



Swedish Hedge Funds

-diversifying investors' portfolios

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SAMMANFATTNING

UPPSATSENS TITEL	Swedish hedge funds – diversifying investors' portfolios
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FÖRFATTARE	Per Hammarbäck Victor Kastensson
HANDLEDARE	Maria Gårdängen
NYCKELORD	Hedgefonder, absolut avkastning, riskjusterad avkastning, korrelation och marknadsportfölj
SYFTE	Syftet med uppsatsen är att analysera Svenska hedgefonders historiska avkastning beträffande riskjusterad avkastning och korrelation mot marknaden. Vidare studeras dessa faktorer ur ett investerarperspektiv för att undersöka huruvida Svenska hedgefonder fyller ett syfte som komplement i en marknadsportfölj.
METOD	Uppsatsen använder sig till största del av kvantitativ data som insamlas med hjälp av relevanta teorier. Kvalitativ data såsom intervjumaterial är ett komplement till de kvantitativa data och leder så småningom till ett större djup i analysdelen. Undersökningen gällande den historiska avkastningen för Svenska hedgefonder är uppdelad i tre olika tidsperioder. Detta för att påvisa eventuella skillnader i avkastning vid olika börs klimat.
TEORETISKA PERSPEKTIV	Hedgefonder, portföljval och risk är i huvudsak de områden som teorierna grundar sig på. Dessa används i sin tur för att exempelvis kunna påvisa hedgefonders syfte i en diversifierad marknadsportfölj. Således är dessa teorier en viktig del för att kunna uppnå uppsatsens syfte.
EMPIRI	Empirin består till största del av de kvantitativa resultaten såsom hedgefonders riskjusterade avkastning och korrelation mot marknaden etc. Vidare består empirin av de kvalitativa data som erhållits via intervjuer.
SLUTSATSER	Uppsatsen visar att svenska hedgefonder skapar en absolut positiv avkastning, oavsett börs klimat. Höga marknadskorrelationer visar emellertid att hedgefonderna har en hög grad av marknadsexponering. Denna slutsats motsäger den vedertagna uppfattningen av hedgefonder som en diversifieringsinvestering till förmån för en högre förväntad avkastning. Slutsatsen är att hedgefonder genererar en positiv avkastning, oavsett börs klimat, genom att ta en marknadrisk och visar således en signifikant marknadskorrelation.

ABSTRACT

TITLE	Swedish hedge funds – diversifying investors’ portfolios
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AUTHORS	Per Hammarbäck Victor Kastensson
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KEYWORDS	Hedge funds, absolute return, risk-adjusted return, market correlation and market portfolio
PURPOSE	The purpose is to analyse the historical performance of Swedish hedge funds in terms of risk-adjusted absolute return and correlation with the market. Further, the thesis examines these factors from an investor’s perspective in order to determine whether Swedish hedge funds fulfil their purpose as a complement in a portfolio.
METHODOLOGY	This thesis is predominantly relying of quantitative data while considering theoretical concepts. Qualitative data, in terms of interviews, complements the quantitative findings in order to add greater depth to a subsequent analysis. The performance of the hedge funds is analysed over three different time periods in aim to determine any differences in the performance between the market conditions.
THEORETICAL PERSPECTIVES	The utilized theories and theoretical concepts are based on the areas of hedge funds, market portfolio and statistical measures in order to further explain hedge funds in portfolios and risk-adjusted return etc.
EMPIRICAL FOUNDING	Mainly quantitative findings, representing the results from the risk-adjusted measures, combined with the qualitative findings in terms of interview answers.
CONCLUSIONS	This thesis shows that Swedish hedge funds are able to generate an absolute positive return, irrespective of the market condition. However, high market correlations indicate that Swedish hedge funds have a high degree of market exposure. This finding contradicts the traditional purpose of hedge funds, diversifying investor’s portfolio, for the benefit of an increased expected return, in particular during a declining market. The conclusion is that hedge funds generate return, irrespective of the market condition, by taking a market risk, thus displaying a significant market correlation.

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Lund, January 11th, 2007

Per Hammarbäck

Victor Kastensson

“If you cannot measure it,
you cannot manage it”

-Francois-Serge Lhabitant

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1. INTRODUCTION

In this first chapter a short introduction and background of the subject of choice is given to the reader. A problem discussion will follow which is concluded with a problem description. The purpose of this thesis is also presented along with perspective, contribution, outline and the selected delimitations.

1.1 Background

Today, more than 8 600 hedge funds control approximately USD 1 100 billion in assets. A majority of these assets are controlled by funds located in the U.S. and at offshore locations. 42 of these funds, with a total of USD 12,5 billion in managed capital, is located in Sweden which makes Sweden the third largest actor on the European market.¹ The Swedish market for hedge funds has increased rapidly during recent years. The attractiveness of hedge funds is even more impressive considering that the first hedge fund in Sweden started only ten years ago. Brummer & Partners started the fund Zenit in 1996, which is still the largest hedge fund in Sweden with a total capital of SEK 9 042 million.²

In the U.S., hedge funds have existed for almost 60 years. Between the late 1980s and late 1990s, the number of hedge funds increased by more than 25 percent per year.³ Even though the phenomenon is not new, it is only during the last 10 years that most research has been done, and consequently mainly in the U.S.

The lack of research and statistical material in Sweden was recognized as recently as the 28th of December (2006) in Sweden's largest daily business paper, Dagens Industri. "There is however a lack of statistic material, covering the hedge funds. For example, official fund statistics lack the branch pioneer, Brummer & Partners' funds. The Swedish Central Bureau for Statistics' fund information contains "Other funds", a category where hedge funds are included."⁴

The popularity of hedge funds is contributed to the combination of risk and return together with the low correlation towards the market that is typical for hedge funds. The low correlation makes hedge funds an interesting alternative for investors to diversify their portfolios. Previously, this

¹ "Nya djur i fondjungeln", *Affärsvärlden*, 2006-11-10

² www.brummer.se, 2006-10-31

³ Ackermann et al (1999) pp. 833-874.

⁴ "Mellanår för hedgefonder", *Dagens Industri*, 2006-12-28

possibility was used primarily by high wealth individuals whereas that trend has since changed. In the U.S., pension funds have started to show greater interest for hedge funds. Even though only less than 3 percent of their total capital is invested in hedge funds, the sum in absolute numbers is so large that the hedge fund market may double in three to five years.⁵

Hedge funds traditionally began as investment partnerships that could take long and short positions but have now developed into a multifaceted structure that defies one simple definition.⁶ Today, hedge funds are often referred to as funds that have fewer regulations than mutual funds and an absolute target of return. Another characteristic is that the fees often are mainly based on the return and managers often invest their own money into the fund.⁷ The recent decline in the Swedish stock market during 2000-2003 is a probable reason for the recent popularity. Since hedge funds have the possibility to take short positions they should be able to receive a positive return, even when the stock market is falling.

The European Central Bank (ECB) has raised some questions and warnings regarding the recently increasing impact of hedge funds. According to *Financial Times*⁸ “hedge funds have created a “major risk” to global financial stability for which there are no obvious remedies, the ECB warned yesterday in one of the bluntest official statements yet on the rapidly growing sector.” The ECB did not hold back their fears when saying that an “idiosyncratic collapse of a key hedge fund or cluster of smaller funds” was ranked in the same category as a possible bird flu pandemic as the type of shock that could trigger fresh disruption in financial markets. These comments were a part of the ECB “financial stability review”, which for the first time included a special section on hedge funds.⁹ This view is not shared by the Swedish Central Bank (Riksbanken), which does not see a need for stricter regulations surrounding hedge funds. According to Lars Nyberg, the head of Riksbanken, it is up to the hedge funds’ counterparts, banks and financial institutions, to cover the risks. Moreover he welcomes the contribution to new flexible investment strategies and the diversity of risks that hedge funds has brought in.¹⁰

Although Riksbanken has a positive view of hedge funds, the Swedish Financial Supervisory Authority, (Finansinspektionen) has raised questions about their lack of transparency. Since the

⁵ ”Nya djur i fonddjungeln”, *Affärsvärlden*, 2006-11-10

⁶ Ackermann et al (1999) pp. 833-874.

⁷ Anderlind et al (2003) p. 33

⁸ ” ECB warns of hedge fund threat to stability”, *Financial Times*, 2006-06-02

⁹ *ibid*

¹⁰ ”ECB: Hedgefonder farligare än fågelinfluensa”, *Dagens Industri*, 2006-06-02

beginning of 2006, reporting requirements have changed from a requirement to a monthly reporting and risk measurement.¹¹

Nevertheless, hedge funds are obviously a financial instrument that affects and creates a debate. As the market continues to grow rapidly, the lack of scholarly material, especially in Sweden, and transparency, is what attracted us to this topic.

1.2 Problem discussion

The recent setbacks on the Swedish stock market have made hedge funds an attractive investment. As their popularity increases, the lack of sufficient research becomes more obvious. Traditional mutual funds are easy to evaluate and compare, either towards each other or towards a market index. The problem with hedge funds is their great variety of goals, risk, flexible investment strategies and debt to equity ratio. Since they often have an objective of an absolute return there is really no sufficient index to use as a comparison. With the possibility of taking short contracts, hedge funds should theoretically display the same return when the stock market fluctuates, i.e. it should be uncorrelated towards the market. To be able to evaluate the performance of hedge funds towards other investments it would then be necessary to use a time period that contains both a negative and a positive development of the stock market. The different levels of risk are also something that separates hedge funds and must be taken into consideration. As shown, there are a large variety of different hedge funds, all gathered under the same label. This thesis wants to map out the Swedish hedge fund market and try to evaluate whether they achieve their goals in terms of absolute return and market correlation. Do Swedish hedge funds generate a risk-adjusted absolute return, independent of the stock market development?

1.3 Purpose

The purpose of this thesis is to analyse the historical performance of Swedish hedge funds in terms of risk-adjusted absolute return and correlation with the market. Further, the thesis examines these factors from an investor's perspective in order to determine whether Swedish hedge funds fulfil their purpose as a complement in a portfolio.

¹¹ “ECB: Hedgefonder farligare än fågelinfluensa”, *Dagens Industri*, 2006-06-02

By acknowledging the lack of daily and weekly observations in combination to the limited access of obtaining relevant hedge fund data, this thesis will serve as a fundament for future research.

1.4 Delimitations

Since the concept of hedge funds is widely used today, the importance of delimitations is unquestionable. For a Swedish fund to be able to take short positions, which is one definition of a hedge fund, one must be accepted as a special fund by Finansinspektionen. One delimitation is consequently that the fund must be listed as a special fund by Finansinspektionen. Exclusion is also made to those funds generally known as fund of funds, which is when a fund invests in other funds, in this case hedge funds. Moreover, this thesis only includes funds with long/short equity as an investment strategy. A delimitation of time is also necessary, since the concept of hedge funds is a somewhat recent phenomenon in Sweden; it is not possible to go further back than 1996 when the first hedge fund was established. The goal is to use a time period that contains at least one stock market setback and one positive period, thus making it possible to evaluate performance in both scenarios.

1.5 Perspective and contribution

Due to the limited amount of previous studies, this thesis aims to contribute to increase people's general knowledge of hedge funds. In particular, fund investors, analysts and academics. For that reason, understanding this thesis requires basic knowledge of hedge funds, finance and portfolio management. The thesis will also contribute to hedge fund managers with a greater self-realization.

1.6 Disposition

2. Methodology

This chapter presents the methodological choices, data description and the procedure in which the study was carried out.

3. Theoretical framework

This section includes relevant theories and theoretical concepts in order to capture important features of the data. Moreover, previous research is presented at the end of this chapter.

4. Empirical findings

In this chapter, the empirical findings and results from the study are discussed and displayed.

5. Analysis

The aim of this section is to connect the previously presented theories and empirical results in accordance to the purpose of this thesis.

6. Conclusions

In the last chapter the essential findings based on the empirical research and analytical discussion are summarized. This is followed by suggestions for future research in this subject.

2. METHODOLOGY

This chapter will explain and motivate the methodological choices as well as describe how the study was carried out in order to fulfil the purpose. Furthermore, the method of investigation, data collection and procedure will be described together with an attempt to critically reflect the data used.

2.1 Overview

The thesis aims to evaluate the performance of Swedish hedge funds relying predominantly on quantitative¹² data while considering relevant theories and measures. Therefore a deductive¹³ approach has been used throughout the thesis in order to capture relevant features of the data. The thesis intend to compare the quantitative findings to the hedge funds overall ambitions such as absolute return and correlation with the market in order to fully serve the purpose of the thesis. Additionally, interviews, representing the qualitative aspect of the thesis, with people possessing expert knowledge in the fund industry have been carried out in order enrich our quantitative findings.

Furthermore, the thesis has a descriptive¹⁴ character since the theoretical concepts and measures facilitate the evaluation of the crucial data. The overall object of this thesis is to demonstrate the historical performance of Swedish hedge funds.

2.2 Defining the target population

The initial “population”¹⁵ under investigation was the register of special funds retrieved from Finansinspektionen which consisted of around 200 hedge funds. The first selection resulted in the exclusion of fund of funds, focusing on long/short equity hedge funds with the ambition of an absolute return. Thanks to the assistance from Dagens Industri and Nyhetsbyrån Direkt the initial population was narrowed down to 30 hedge funds. The next step was to study the hedge funds in more detail with the ambition of ensuring that each hedge fund (element) in the

¹² Holme & Solvang (1991) p. 14

¹³ Rienecker och Stray Jorgensen (2004) pp. 165-171

¹⁴ ibid

¹⁵ **Population:** The identifiable total set of elements of interest, Bryan et al (2004) chapter 8

potential “defined target population”¹⁶ of 30 hedge funds was characterised by using long/short equity as an investment strategy. As a result two other hedge funds were eliminated mainly due to their absence of stock market investments. This resulted in a defined target population, also referred to as “sample” in this thesis, of 28 hedge funds characterised by taking long and short positions and the ambition of generating positive absolute return over a stock market cycle. Moreover the hedge fund returns data are on a monthly basis and is not adjusted for management fees.

2.3 Data collection

2.3.1 Primary data

The primary data was gathered by conducting interviews with people possessing expert knowledge of the fund industry. Four sources from different disciplines were interviewed with the purpose to enrich our quantitative findings and therefore improve the quality of the subsequent analysis. A brief summary of the interviewees is provided below.

- **Jonas Lindmark** - *Editor and publisher* at Morningstar Sweden

Jonas Lindmark has previous work experience from Affärsvärlden where he was working as a fund expert. Today he is the editor and publisher of Morningstar Sweden, a part of Morningstar Inc., which is the world leading independent publisher of information, analysis and ratings of funds.¹⁷ Due to his expert knowledge and long experience within the fund market, Lindmark seems sufficient to comment on our quantitative findings. Moreover, Morningstar, as mentioned previously, is an independent publisher which reflects the satisfactory level of objectivity in Lindmark’s answers and comments.

¹⁶ **Defined target population:** A subset of the population singled out specifically for investigation, Bryan et al (2004) chapter 8

¹⁷ <http://www.morningstar.se> (2006-12-01)

- **Jonas Wikström** – *Co-founder and -manager* of WR Capital.

Jonas Wikström,¹⁸ together with his partner Tomas Risbecker, is currently in the start up phase of the hedge fund WR Capital. The purpose of this interview was to obtain an opinion from a hedge fund manager unrelated to our sample, which should increase the level of objectivity in his opinion regarding the hedge fund market.

- **Björn Germer** - *Co-founder and -manager* of DLG.

Björn Germer and Björn Danckwardt-Lillieström¹⁹ manage the hedge fund DLG. The purpose of interviewing Germer was to determine potential factors underlying their impressive performance since establishment but also explanation behind their high volatility associated with the fund.

- **Per Olofsson** – *Manager for alternative investments* at the Seventh Swedish National Pension Fund (Sjunde AP-fonden)

Sjunde AP-fonden manages two of the largest funds in the Swedish pension system. Per Olofsson is the manager of the pension fund's alternative investments, which includes hedge fund investments. Due to the large amounts being invested in hedge funds, he is considered as an ideal interviewee regarding the purpose and expectation of investing in hedge funds.

2.3.2 Secondary data

Market index (SIX-RX²⁰), risk free interest rate (SSVX90²¹) and the monthly hedge fund returns, all obtained from SIX, are the majority of secondary data for determining the actual hedge fund performance. The remaining hedge fund return data, which SIX was unable to provide us with, had to be gathered directly from the hedge funds, mainly from their websites.

¹⁸ Jonas Wikström, previously stock broker at Alfred Berg

¹⁹ Björn Danckwardt-Lillieström, co-founder and manager of DLG

²⁰ SIX Return Index, a market index that reflects the Stockholm stock market and includes dividends

²¹ Swedish government bond, 90 days

Other secondary data such as academic journals and articles have been obtained at ELIN²² and from business papers such as *Affärsvärlden* and *Dagens Industri*. Moreover, previous theses and relevant hedge fund literature have been useful to fulfil the purpose of the thesis.

SIX-RX was selected as the market index and is used as a framework when evaluating the hedge fund performance. It is complicated to find a suitable comparative market index for hedge fund performance due to their flexible investment strategies²³. Therefore this thesis will be seen from an investor's perspective where SIX-RX represents the market portfolio and function as a possible investment option to the investor.

2.4 Procedure

The first step was to obtain all “performance data” such as hedge fund return, market index and risk free interest rate into Excel sheets. The following step was to perform necessary calculations that serve as input to the performance measures²⁴. These measures are central in order to determine the hedge fund's performance in terms of risk-adjusted absolute returns and correlation to the market index. Microsoft Excel and Minitab have been the main tools when calculating and measuring the data. Pierre Carbonnier²⁵ was contacted at an early stage, in order to ensure that the statistical calculations were performed in an proper way.

The performance of hedge funds has been measured over three different time periods. The first time period focuses on a stock market cycle between 2001 and 2005 in aim to cover a period of both an upward and a downward market. This cycle is further divided in two sub periods – an “increase period” and a “decrease period”. One of many reasons behind the sub periods is to clearly display the performance of the hedge funds in different market conditions, thus, among others, to evaluate the hedge funds ability to generate absolute return regardless of the market condition. Unfortunately many hedge funds in the Swedish market have a short history, which explains the relative low number of hedge funds²⁶ under investigation for this time period.

²² Obtained at www.lub.lu.se (2006-12-21)

²³ Anderlind et al (2003) p. 27

²⁴ Sharpe ratio, Jensens Alpha, Treynors ratio and MRAR

²⁵ Subject teacher (Universitetsadjunkt) at the Department of Statistics, Lund University

²⁶ 8 out of 28.

The second time period focuses on the last 36 months (2003-10-31 - 2006-10-31), which includes 21 hedge funds. Morningstar, among others, usually utilize this time period when evaluating fund performance which motivated our choice of this time period. However, the last 36 months is a time period predominantly characterized by an upward market and gives little or no indication on how well newcomers on the market would perform in a downward period. The last time period of investigation spreads between the establishments of the hedge funds and today. In other words, this time period cover all 28 hedge funds under investigation. The majority of the hedge funds were established in 2002-2003 and thereafter which explains the few observations for some hedge funds due to monthly observations.

The results from the three different time periods have served as a basis of selection process for interviewees and subsequent subject matter at interview. Their expert knowledge has enriched our quantitative findings and given this thesis greater depth in terms of analysis.

2.5 Validity²⁷

After studying academic journals and other academic reports regarding hedge fund performance, it became rather clear what methodology to adopt. The frequently used and widely known theories and measurement procedures facilitates the link of empirical findings and the theory which increase the level of validity in our thesis.

In order to enrich our quantitative findings regarding the hedge fund performance, it is useful to include a qualitative aspect. This is done by conducting interviews with four sources that possess expert knowledge in the fund industry. Being solely dependent to few qualitative sources such as interviewees may affect the level of external validity²⁸ in a negative way. Fortunately, this thesis is predominantly of a quantitative character where the conducted interviews serve the purpose of giving a greater depth in a subsequent analysis. The research method in this thesis is considered as a “census”²⁹ since the procedure, in our opinion, includes and measures every element (hedge fund)³⁰ in the defined target population (Swedish hedge funds). The results are considered to

²⁷ **Validity:** the ability of the methodology to measure what it is supposed to measure, Ericsson & Wiedersheim-Paul (1991) p. 38

²⁸ **External validity:** the results can generalize to the larger population, http://en.wikipedia.org/wiki/External_validity (2006-11-17)

²⁹ Bryan et al (2004) chapter 8

³⁰ According to our definition in 3.1.4

possess very high level of external validity, thus the ability of our “sample” to represent the Swedish hedge fund market.

2.6 Reliability³¹

Most of the “performance data³²” have been received in Excel sheets which increase the level of reliability due to the minimal risk of typing errors. Whenever manual typing was required, the data was entered in a meticulous manner and verified by the co-author in order to help eliminate error and ensure high level of reliability on the data. The monthly observations and the relative recent history of various hedge funds result in few observations, which can have a negative effect on the reliability of the findings. However, as mentioned previously, the methodology aims towards including every element in the defined target population which maintains the reliability of the findings at a respectable level.

The measures³³ for evaluating hedge fund performance were frequently used and calculations were performed in a meticulous way by using Microsoft Excel and Minitab. In order to ensure the reliability of Excel, in particular for the correlation measurements and statistical significance, Minitab was also utilized.

2.7 Criticism and weaknesses

Due to the lack of daily and weekly hedge fund data, the thesis is based on monthly observations. This could affect the precision of our results, particularly when estimating standard deviation, beta value and correlation with the market.

The choice of comparative market index for the hedge funds is very complicated for many reasons. One of the problems is the flexibility in their investment strategies where, as an example, Swedish hedge funds have the opportunity to invest in foreign market. Therefore, a comparison to the SIX-RX, for the performance of hedge funds, could be somewhat confusing since the index does not take foreign market fluctuations into consideration.

³¹ **Reliability:** the ability of the methodology to provide the same results in repeated samples, Holme & Solvang (1991) p. 163

³² Market index, risk-free return and hedge fund returns

³³ Sharpe Ratio, Jensens Alpha, Treynors Ratio & MRAR

When evaluating the performance of funds it is very important to include all funds in the investigated time period. Less successful hedge funds have the tendency to withdraw from the market while successful hedge funds, for obvious reasons, continue their operations. This often results in an overestimation of historical returns which is called survivorship bias.³⁴ This factor has affected the reliability of the findings and various attempts to find a comprehensive list of “liquidated hedge funds” have been made, unfortunately without success. Nor Harcourt, SIX or Finansinspektionen could provide us with this information, thus making this problem a major weakness in this thesis. However, the “total hedge fund index”³⁵ is adjusted for this bias by subtracting 2%³⁶ of the annual return.

As previously mentioned, the monthly observations, in combination with the relative short existence of various hedge funds, result in few observations which can affect the level of reliability. The results of our calculations regarding the hedge fund performance may to some extent be misleading to the individual investor. This is due to the fact that the individual hedge fund return data is not adjusted for management fees. Consequently, the results do not indicate what return the individual investor would have received if investing in a particular hedge fund. Therefore, it would have been desirable for the individual investor if the thesis displays the results after adjusting for management fees.

Anderlind et al (2003) is a frequent utilized source throughout the thesis. A possible weakness could be that the thesis is heavily relying on this particular source and due to the fact that it was written in 2003.

There is a possible risk of excluding relevant hedge funds in the selection of the final sample due to their wide definition and the lack of an official database register of hedge funds. This may result in a selection bias.³⁷ The level of this bias is mainly determined by two factors. Firstly, the fund manager’s willingness to publicly notify fund information in a database and secondly, the database’s principles regarding fund registration. However, the initial selection of hedge funds and therefore the collection of the “performance data” have not been relying on any particular database and should minimise the risk of selection bias in this thesis.

³⁴ Friedlander (2005)

³⁵ See figure 4-16

³⁶ Recommended adjustment according to Anderlind et al (2003) p. 61

³⁷ Fung & Hsieh (2002)

The first time period focuses on a stock market cycle between 2001 and 2005 in aim to cover a period of both an upward and a downward market. Only 8 out of the 28 hedge funds are represented during this time period which is a weakness in this thesis.

3. THEORETICAL FRAMEWORK

The purpose of this chapter is to describe the theoretical background for this thesis. The reader will be introduced to relevant theories and concepts that are important for the incorporation of the current topic. Furthermore, a short description of the measures that are used will be presented.

3.1 Hedge funds³⁸

Hedge funds are relatively unknown to the general investor in Sweden. Even though Swedish investors have invested a significant amount in hedge funds, the majority of the investments have derived from a restricted number of people. The reason behind the lack of knowledge is primarily due to the hedge fund's initial deliberate targeting of institutional investors and high wealth individuals. Other factors such as high minimum investment and quarterly trading days have influenced the general low interest and slow expansion of hedge funds in Sweden amongst the wider Swedish population.

3.1.1 The history of hedge funds³⁹

In 1949, Alfred Winslow Jones created an alternative investment form known as “hedge fund”. Jones combined two investment strategies – leverage and short selling.⁴⁰ Leverage is when using borrowed funds. Short selling refers to selling a borrowed security with the expectation of being able to repurchase the same security to a lower price on the market before repaying the security to the lender. His technique is similar to the one we today refer to as “long/short equity” which is the most fundamental sort of hedging technique.⁴¹ Jones demonstrated how these instruments could be combined in order to limit market risk. Moreover, he saw two main sources of risk in stock investments – risk arising from individual stock selection and risk of a general market decline. Jones aimed to separate the two by holding a basket of shorted stocks for hedging against a market decline and eliminating the market risk. Furthermore, he exercised leverage in aim to strengthen his return from selecting individual stocks and took long positions in stocks considered as undervalued and short on those considered as overvalued. This results in a fund that is “hedged” since the portfolio consists of stocks that would benefit from a market increase

³⁸ Anderlind et al (2003) pp. 5-6

³⁹ ibid pp. 7-8

⁴⁰ Eichengreen & Mathieson (1999) pp. 4-5

⁴¹ Schaap (2006)

and short positions that would benefit from a downward period.⁴² Presuming a reasonable mixture of stocks in the hedge fund, the fund manager could be able to generate absolute return despite the market conditions.⁴³

In accordance to most hedge fund managers today, Jones had a significant amount of his own savings in the fund. This way, he managed to create a mutual interest between investors and himself by focusing on limited risk and absolute return. In addition, he introduced the system of charging the investors when the fund generated absolute return, the performance fee.

3.1.2 The Swedish hedge fund market⁴⁴

In 1996, the equity hedge fund Zenit was introduced to the Swedish market on the initiative of Brummer & Partners. The introduction of Zenit opened up for new hedge funds but the expansion of the Swedish hedge funds progressed slowly up until year 2000. This was explained by the favourable market in 1996 - 2000 which resulted in a minor demand of hedging the investments. Recently, many new actors have entered the hedge fund market and many funds are managed by traders with previous work experience at major banks or fund commissions.

In 2003, the Swedish hedge fund industry was growing at a faster pace than the global industry, seen from an international perspective. Today, hedge funds represent around 6% of the total capital in funds registered in Sweden.⁴⁵

Long/short equity hedge is currently the most common strategy in the Swedish market. In 2003; Sweden represented 63% of all hedge funds in the Nordic region. This was mainly due to Finansinspektionen's acceptance of introducing hedge funds, unlike the authorities in Norway and Denmark, on the Swedish market. The hedge funds in Norway and Denmark were forced to legally establish the funds offshore. Due to cultural differences between Nordic and international investors in terms of offshore investments, the growth of hedge funds have progressed slowly in Denmark and Norway.

Hedge funds are often accused of having low transparency but the critique is mainly directed to those registered offshore and therefore not aimed at Swedish hedge funds.⁴⁶ Many institutional

⁴² Eichengreen & Mathieson (1999) pp. 4-5

⁴³ Nyberg (2006)

⁴⁴ Anderlind et al (2003) pp. 17-24

⁴⁵ Nyberg (2006)

investors have entered the hedge fund industry lately and one possible explanation can be the hedge funds ability to diversify one's portfolio.⁴⁷

3.1.3 Hedge fund - definition

Defining a hedge fund is like defining an animal at a Zoo⁴⁸ where every animal, in accordance to hedge funds, has their unique strategy of survival. In other words, hedge funds differ in their strategies and as a result every hedge fund is unique. This results in complications when referring to hedge funds as a group. However, hedge funds generally aim to generate absolute returns regardless of the market conditions. Thanks to loose regulations and flexible investment strategies⁴⁹, hedge funds can utilize a wide range of investment strategies such as short positions, leverage and derivatives. This allows them to take advantage of "all" market conditions and generate favourable returns. In contrast, mutual fund performance is very reliant to a rise in the market in order to create positive returns.⁵⁰ Moreover hedge funds have the ability, by hedging investments, to account for the market risk.⁵¹

3.1.4 Hedge fund definition in this thesis

Besides the previous definition of hedge funds it is important to explain what is meant when referring to "hedge fund" in this thesis. To be considered as a hedge fund, and therefore one of the selection criteria, the fund needs to, among else, practice a strategy of long/short equity hedge, in the Swedish market, with the ambition of generating absolute return despite the market condition. This is usually done by utilizing long and short positions and derivatives in the stock market. The strategy in more detail involves finding under- or overvalued stocks where the decision of taking long or short positions, and utilizing derivatives is determined by the market exposure and how the market values those stocks. In 2003, this strategy was the most utilized strategy in the world and represented 55 % of the world's hedge funds.⁵²

⁴⁶ Nyberg (2006)

⁴⁷ *ibid*

⁴⁸ Björn Germer, DLG fonder.

⁴⁹ "Fakta: Vad är en hedge fond?", *Privata Affärer*, 2006-01-13

⁵⁰ Schaap (2006)

⁵¹ Anjilvel et al (2000)

⁵² Anderlind et al (2003) pp. 37-40

3.2 Hedge funds vs. Mutual funds

Hedge funds and mutual funds differ in many ways and the following figure gives a more detailed explanation.

Figure 3-1⁵³ Differences between hedge funds and mutual funds

	Hedge funds	Mutual funds
Investments restrictions	Free	Limited
Ambition of return	Absolute return	Relative return
Attitude towards risk	Lose money	Deviate from the market index
Investment philosophy	Reduce market risk, usually by taking long and short positions	Exposed to market risk, usually by taking long positions
Measure of success	High risk-adjusted return despite the market condition	Exceed the market index
Hedge fund fees	Fees based on fund performance	Fixed fee, irrespective of the fund performance
Managers investing in the funds	Very common	Unusual

3.2.1 Investment restrictions⁵⁴

Mutual funds are restricted by certain regulations, set by Finansinspektionen. The purpose is to show the structure and operation of the fund which helps the investor to choose the right product.⁵⁵ Hedge funds on the other hand are more flexible and can utilize a wide range of investment strategies, such as short positions, arbitrage, leverage, and derivatives which allows for favourable returns despite the market condition. The derivatives usually refer to options and futures where the former can be utilized when hedging towards a market decline. Futures on the other hand have the ability of securing the purchase or selling of a security in advance to a specific price at a specific date. Arbitrage⁵⁶ is a strategy that seeks imbalances between the pricing of two financial instruments that generates a profit when the relationship between the two goes back to normal. Another way of generating money in a market decline is to take short positions and repurchase the same security at a lower price where the difference generates a profit.⁵⁷ Short positions and derivatives have the ability to balance and reduce the market risk.

⁵³ Anderlind et al (2003) p. 25

⁵⁴ *ibid* pp. 25-28

⁵⁵ http://www.ici.org/funds/abt/faqs_hedge.html (2006-11-20)

⁵⁶ Anderlind et al (2003) p. 95

⁵⁷ Nyberg (2006)

3.2.2 Ambition of return⁵⁸

Mutual funds, unlike hedge funds, have the ambition of generating relative return. A relative return means relating the return of an asset to a benchmark index⁵⁹.⁶⁰ This means that mutual funds that generate a negative return still can be considered as having a positive relative return if exceeding the benchmark index. Hedge funds on the other hand have the ambition, despite the market condition, to generate absolute return.

3.2.3 Attitude towards risk & investment philosophy⁶¹

In accordance with the ambition of return, the risk differs between the two. The risk in a mutual fund often refers to the probability of having a lower return than the general stock market. As a result, mutual funds have the ambition of investing in stocks likely to perform better than the general stock market. A positive deviation from the index gives a chance of outperforming the index but there is also a risk of having a negative deviation from the index. Most mutual funds are exposed to market risk since their investments tend to follow the general stock market index. The risk of investing in a hedge fund often refers to losing the actual money.

Hedge funds have the objective of reducing market risk by utilizing flexible investment strategies, as previously mentioned. Mutual funds aim to perform better than the general stock market in a positive market and avoid losing as much as the declining market indicates.

3.2.4 Factors behind return⁶²

The return generated by the market conditions is called beta⁶³ while the excess returns generated by hedge fund portfolios, reflecting the strategies and skills of the fund manager, is called alpha.⁶⁴ Mutual funds generate the majority of their return from the market conditions, in other words the level of beta mostly affects the level of return. Mutual funds do have an opportunity to utilize derivatives but their flexibility is very limited compared to hedge funds.

⁵⁸ Anderlind et al. (2003) pp. 28-29

⁵⁹ In this thesis: SIX-RX

⁶⁰ Nyberg (2006)

⁶¹ Anderlind et al. (2003) pp. 29-30

⁶² *ibid* p. 31

⁶³ Also referred to as systematic risk.

⁶⁴ Anjilvel (2000)

*3.2.5 Measure of success*⁶⁵

A measure of success for the hedge fund manager is to create a high absolute return in proportion to the risk, which is known as a high risk-adjusted absolute return. The different risk adjusted measures⁶⁶ are commonly used when evaluating fund performance and will be explained in more detail later in this chapter. Sharpe Ratio is probably the most common method of measuring hedge fund performance. A high Sharpe Ratio indicates an attractive relationship between risk and return.⁶⁷

*3.2.6 Hedge fund fees*⁶⁸

Hedge funds charge an annual fixed percentage fee usually lower than traditional mutual funds. On the other hand, hedge funds often charge a fee based on the performance around 20 percent of the return exceeding the risk free return.⁶⁹ Some hedge funds charge this fee when reaching absolute positive returns others only when exceeding a “performance threshold”⁷⁰. Some hedge funds have a high water mark⁷¹ which means that the investor only has to pay incentive fees when there is a net increase in the asset value. By having a fee based on performance, the hedge fund manager and the investor share the same objective, which should minimize the risk of the principal agent problem. In contrast, a manager of a mutual fund is compensated irrespective of the fund’s performance, due to the funds fixed percentage fee.

*3.2.7 Managers investing in the funds*⁷²

The managers of hedge funds often invest their own money in the fund, which indicates their focus on generating an attractive return. Conversely, mutual fund managers, as mentioned previously, are not usually compensated by the performance of the fund and generally don’t invest their own money in the fund.

⁶⁵ Anderlind et al (2003) pp. 31-32

⁶⁶ Sharpe Ratio, Treynors Ratio & Jensens Alpha

⁶⁷ Sharpe (1994)

⁶⁸ Anderlind et al (2003) pp. 32-33

⁶⁹ Schaap (2006)

⁷⁰ Usually the risk free return

⁷¹ Goetzmann et al (2003)

⁷² Anderlind et al (2003) p. 33

3.3 Modern portfolio theory⁷³

Markowitz, the father⁷⁴ of modern portfolio theory, argues on the necessity of diversifying the portfolio by investing in several companies representing different industries.⁷⁵ The idea of portfolio theory is to diversify away the unsystematic risk and focus on the systematic risk.⁷⁶ Moreover, Markowitz explains the mean variance portfolio theory, which led to the formulation of the efficient frontier⁷⁷ where the individual investor can design a portfolio consisting of stocks or bonds depending on the investor's risk and return preferences.⁷⁸

In order to optimize the portfolio, the investor needs to diversify the investments to eliminate the unsystematic risk, thus focusing on the overall portfolio's expected risk and return rather than relying on a particular stock. The risk of investing in a specific stock refers to how volatile the return is around its mean. In other words the more deviation around its mean the more risk associated with a particular investment. Once again, being solely dependent on a particular stock can generate favourable return but the high risk associated with the investment can result in a less favourable return. Financial theory argues that risks associated with securities can be divided in two categories; systematic and unsystematic risk:⁷⁹

Systematic risk⁸⁰ usually affects the entire market and is very complicated to diversify away. The number of stocks in the portfolio is irrelevant since the risk mainly derives from macroeconomic risk factors such as inflation and changes in interest- and exchange rate. The systematic risk is also known as “market risk” or “undiversifiable risk”

Unsystematic risk⁸¹ means that the risk is specific to separate stocks and can be minimized by diversifying the investments.⁸² In other words the risk will be eliminated if the investor holds a sufficient portfolio. The unsystematic risk usually stands for the part of the stock return that is not correlated with general market fluctuations. Moreover, the unsystematic risk is also called “diversifiable risk”.

⁷³ Markowitz (1952) pp. 77-91

⁷⁴ Anderlind et al (2003) p. 95

⁷⁵ Howard (2006)

⁷⁶ *ibid*

⁷⁷ See figure 3.3

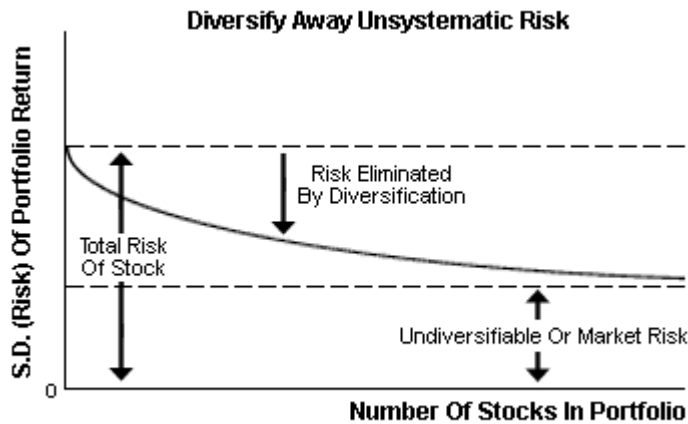
⁷⁸ Anderlind et al. (2003) pp. 67-68

⁷⁹ Howard (2006)

⁸⁰ Arnold (2002) pp. 298-299

⁸¹ *ibid* p. 298

⁸² See figure 3.2

Figure 3-2⁸³ Diversify away unsystematic risk

3.3.1 Risk return trade off⁸⁴

The principle states the relationship between risk and return which clarifies that an increase in risk level should generate a higher expected return. Moreover, risk sometimes refers to the price of achieving returns meaning that risk is necessary in aim to achieve returns. Hedge funds, structured as portfolios, can provide a meaningful improvement to the “risk return trade off” for the investor due to the hedge funds ability of generating absolute return regardless of the market condition.⁸⁵

3.4 Hedge funds in portfolios

Hedge funds have become a central part of modern financial markets.⁸⁶ Many hedge funds use various tools in aim to lower the systematic risk and therefore the correlation with the stock market.⁸⁷ In addition, hedge funds function as a complement in portfolios due the hedge fund’s ability of diversifying the systematic risk. Seen from an investor’s perspective, there are primarily around three factors⁸⁸ that hedge funds have managed to outperform mutual funds. These factors are described below:

⁸³ Arnold (2002) pp. 298-299

⁸⁴ www.investopedia.com (2006-12-03)

⁸⁵ Anjilvel et al (2000)

⁸⁶ Nyberg (2006)

⁸⁷ Ackermann et al (1999) p. 851

⁸⁸ Anderlind et al (2003) pp. 60-68

3.4.1 Higher risk-adjusted return⁸⁹

Most investors value stable and lasting returns of their investments. Seen from a global perspective, hedge funds as a group have in the period between 1993 and 2003 generated a higher risk-adjusted return than mutual funds. This explains why hedge funds are considered as a low risk investment. Relevant in this context is that individual hedge funds can be associated with high levels of risk. In accordance with the modern portfolio theory, the individual investor need to be aware of the specific risks associated with one particular investment, in this case a hedge fund investment. It is recommended to invest in more than one hedge fund in aim to spread the risk and receive a more stable return.

3.4.2 Low correlation⁹⁰

Hedge funds are well known for their ability to generate positive absolute returns regardless of the market condition. Mutual funds on the other hand generate positive returns only when the market allows them to. Due to their wide range of investment strategies, hedge funds are traditionally uncorrelated towards the market index. Moreover, hedge funds are considered as uncorrelated with each other and as mentioned previously, the investor has the possibility to further diversify the portfolio by investing in several hedge funds.

3.4.3 Ability to hedge capital in market decline⁹¹

One of many reasons to the increased awareness for hedge funds is their ability to secure capital in a downward market. This was demonstrated between the beginning of 2001 and the end of 2002 where the market fell by 50 %, which increased the popularity for hedge funds since many people were in demand for alternative types of investments.⁹²

The ideal hedge fund is the one that have high levels of correlation to a rising market and low levels of correlation, preferably negative, to a declining market. It has been proved that hedge funds are generally more correlated in an upward market and less correlated in downward periods.⁹³

⁸⁹ Anderlind et al (2003) pp. 60-68

⁹⁰ ibid

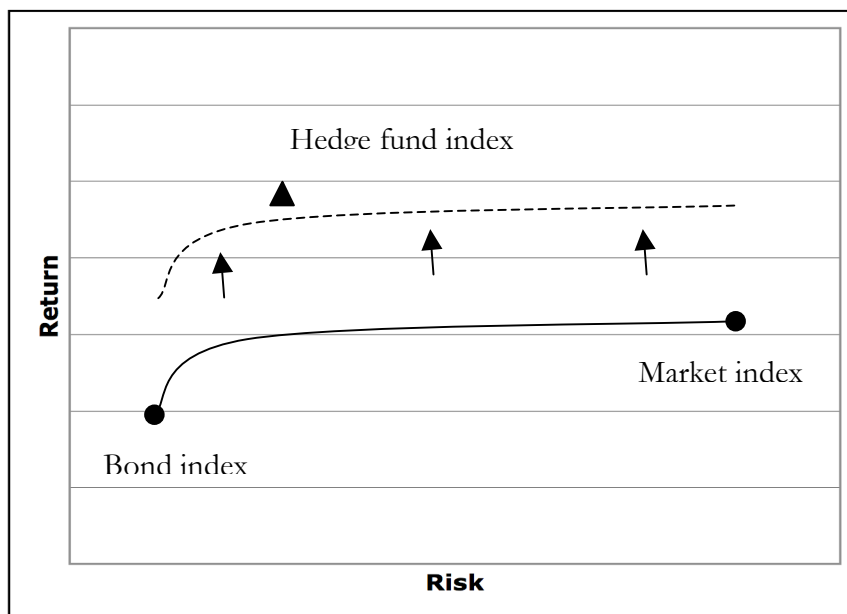
⁹¹ ibid

⁹² Nyberg (2006)

⁹³ Anderlind et al (2003) pp. 60-68

Hedge funds as a group⁹⁴ have proved their ability of generating higher risk-adjusted return than mutual funds. Hedge funds structured as a portfolio can generate a higher total return to a lower total risk than a traditional portfolio. As a result, the efficient frontier of a hedge fund portfolio⁹⁵, in comparison to a traditional portfolio, can be displaced and result in a more attractive “risk return trade off”⁹⁶ to the investor. The logic behind this phenomenon is primarily due to the hedge funds flexibility in its investments, which has the ability to generate an absolute return despite the market condition. In other words, the displacement of the efficient frontier indicates that hedge funds generally generate a better total return to a lower total risk for the entire portfolio.⁹⁷

Figure 3-3⁹⁸ The efficient frontier of a hedge fund portfolio



3.5 Measuring manager performance

3.5.1 Standard deviation

Standard deviation, also known as volatility, is often used to measure the risk of a particular financial asset⁹⁹ and is mathematically the square root of the variance.¹⁰⁰ Standard deviation measures the dispersion around the expected value and a high standard deviation equals high risk

⁹⁴ Usually a hedge fund index.

⁹⁵ See figure 3.3

⁹⁶ See 3.3.1

⁹⁷ Anderlind et al (2003) pp. 60-68

⁹⁸ *ibid* pp. 67-68

⁹⁹ Brooks (2002) p. 441

¹⁰⁰ Brooks (2002) pp. 485-486

to the investor. In this thesis, the standard deviation has a central function when analysing the specific risk in investments but also when determining the risk adjusted return in the Sharpe Ratio.

$$\sigma_p = \sqrt{\left(\frac{\sum (r_{pt} - ar_p)^2}{n - 1} \right)}$$

Figure 3-4 Standard deviation¹⁰¹

r_{pt} = fund return at time t
 ar_p = fund average return
 n = number of observations

3.5.2 Covariance and Beta¹⁰²

The covariance measures the linear relation between two assets. The covariance tells the direction of the relationship and is infinite since it expands from minus to plus infinity. When the covariance between the specific asset and the market index is divided by the variance of the market index, the value of beta will be calculated.¹⁰³ The beta of a particular stock indicates the degree to which the stock responds to changes in the return produced by the market.¹⁰⁴ It is very useful when determining the values of Jensen's Alpha and Treynors Ratio.

$$Cov_{r_p, r_m} = \sum_{i=1}^N \frac{((r_{pt} - ar_p)(r_{mt} - ar_m))}{n - 1}$$

Figure 3-5 Covariance¹⁰⁵

r_{pt} = fund return at time t
 ar_p = fund average return
 r_{mt} = market return at time t
 ar_m = market average return
 n = number of observations

$$\beta_p = \frac{Cov(r_{pt}, r_{mt})}{\sigma_{mt}^2}$$

Figure 3-6 Beta¹⁰⁶

¹⁰¹ Körner (2000) p. 76

¹⁰² Haugen (2001) pp. 43-48

¹⁰³ *ibid* p. 53

¹⁰⁴ Howard (2006)

¹⁰⁵ Körner (2000) p. 101

¹⁰⁶ Arnold (2005) p. 345

3.5.3 Pearson Correlation

Correlation is a measure that describes the degree of relationship between two variables.¹⁰⁷ In this thesis the focus will be on the correlation between the performance of the hedge funds and the stock market. The correlation coefficient can take on values between -1 to +1, although these values are exceptional. A value of +1 indicates a perfect positive correlation between the two variables. The opposite (-1), is a perfect negative correlation which means that a movement of one security will cause an equal movement to the perfect negatively correlated security in the opposite direction.¹⁰⁸

$$\rho_{p,m} = \frac{Cov(r_{pt}, r_{mt})}{\sigma_{pt} \sigma_{mt}}$$

Figure 3-7 Pearson Correlation¹⁰⁹

r_{pt} = fund return at time t

r_{mt} = market return at time t

σ_{pt} = fund standard deviation at time t

σ_{mt} = market standard deviation at time t

Value of coefficient	Strength of correlation
0,8-1,00	Very strong correlation
0,6-0,79	Strong correlation
0,40-0,59	Average correlation
0,20-0,39	Weak correlation
0,00-0,19	Barely any correlation

Figure 3-8 Pearson Correlation coefficients¹¹⁰

3.5.4 Sharpe Ratio

The Sharpe Ratio is designed to measure the expected return per unit of risk and is one of the most accepted measures for determining the risk adjusted return of an investment.¹¹¹ The ratio measures the average return of the hedge fund, usually after subtracting the risk free return, in proportion to its standard deviation. The Sharpe Ratio is mathematically formulated below:

$$S_r = \frac{R_p - R_f}{\sigma_p}$$

Figure 3-9 Sharpe Ratio¹¹²

R_p = fund return

R_f = risk free return

σ_p = fund standard deviation

The Sharpe Ratio is commonly used as guidance when choosing between investments and explains the risk within the portfolio and does not take the fluctuations of the market into consideration.¹¹³

¹⁰⁷ Brooks (2002) p. 43

¹⁰⁸ Haugen (2001) pp. 48-50

¹⁰⁹ Körner (2000) p. 101

¹¹⁰ Lhabitant (2004) p. 117

¹¹¹ Sharpe (1994)

¹¹² ibid

3.5.5 Treynor Ratio¹¹⁴

Treynor Ratio, unlike the Sharpe Ratio, places the value of beta instead of the standard deviation in the denominator of the formula. The two ratios are identical except in their way of interpreting risk. In other words, the risk referred to beta, in Treynor Ratio, accounts for the market risk.¹¹⁵

$$T = \frac{r_p - r_f}{\beta}$$

Figure 3-10 Treynor Ratio¹¹⁶

r_p = fund return

r_f = risk free return

3.5.6 Jensen's Alpha¹¹⁷

The value of Jensen's Alpha, unlike the other two measures, is expressed in absolute terms and helps to determine and specify whether a portfolio is earning sufficient return in relation to its risk.¹¹⁸ Jensen's Alpha measures the difference between the average return of the hedge fund and the expected return according to CAPM. In other words, a positive value of Jensen's Alpha describes a positive risk-adjusted return and is often generated due to the skills and strategies of the fund managers.¹¹⁹

$$E[R_i] - R_f = \alpha_i + \beta_i(E[R_m] - R_f)$$

Figure 3-11 Jensen's Alpha¹²⁰

$E[R_i]$ = fund return

R_f = risk free return

α_i = Jensen's Alpha

β_i = fund beta

$E[R_m]$ = market return

3.5.7 MRAR – Morningsstar Risk-Adjusted Return¹²¹

Morningstar ratings are based on MRAR which has, since 2002, functioned as a basis when evaluating fund performance. MRAR originates from the 'expected utility' theory where the individual investor ranks alternative portfolios on their end value, based on numerical expectations of the utility function. Due to MRAR's foundation in the 'expected utility' theory, investors are generally more worried about an eventual poor outcome rather than a surprisingly

¹¹³ Huang & Dowd (2004)

¹¹⁴ Hodges et al (2003)

¹¹⁵ www.hedgefund.net (2006-12-05)

¹¹⁶ Hodges et al (2003)

¹¹⁷ Jensen (1964)

¹¹⁸ www.investopedia.com (2006-12-05)

¹¹⁹ Anderlind et al (2003) pp. 37-40

¹²⁰ Jensen (1964)

¹²¹ www.morningstar.se (2006-12-19)

fortunate outcome. Moreover, the investor is willing to sacrifice some of the expected return in order to achieve a high certainty regarding the return. In other words, MRAR penalizes risk and a high MRAR indicates a stable return over time. The MRAR is mathematically formulated below:

$$\left[\frac{1}{T} \sum_{t=1}^T (1 + R_{Gt})^{-\gamma} \right]^{-\frac{1}{\gamma}} \text{Minus } 1$$

Figure 3-12 MRAR¹²²

R_{Gt} = load-adjusted excess return

γ = investor's level of risk aversion

($\gamma = 2$ in accordance with Morningstar recommendations)

3.6 Previous studies

Ackermann et al¹²³ studied the historical performance of American and foreign hedge funds. The study resulted in that no conclusions, regarding differences in terms of Sharpe Ratio and Jensen's Alpha between hedge funds as a group and the market index, could be drawn. However, the study showed that hedge funds over time generally outperform mutual funds. Moreover, the authors managed to find a positive relationship between the Sharpe Ratio and the fee based on performance.

Fung & Hsieh¹²⁴ compared the differences between hedge funds and mutual funds on the American market. The results indicated major differences between mutual funds and hedge funds. The former showed a strong positive correlation with the stock market while hedge funds indicated low levels of, or even negative, correlation. Moreover, their results proved that hedge funds were more flexible in their investment strategies compared to mutual funds.

Brown et al¹²⁵ analysed the historical performance of hedge funds. The result showed that the hedge funds outperformed the S&P 500 index in terms of higher Sharpe Ratio and Jensen's Alpha.

Liang¹²⁶ analysed the expected risk and return regarding hedge funds and came to the conclusion that hedge funds in general have a relatively higher standard deviation in combination with a lower beta compared to traditional mutual funds. In accordance with Fung & Hsieh, he found that hedge funds have a lower correlation with the market index compared to the highly correlated mutual funds. In addition, he concluded a low level of correlation between the different hedge fund strategies.

¹²² www.morningstar.se (2006-12-19)

¹²³ Ackermann et al (1999)

¹²⁴ Fung & Hsieh (1997)

¹²⁵ Brown et al (1999)

¹²⁶ Liang (1998)

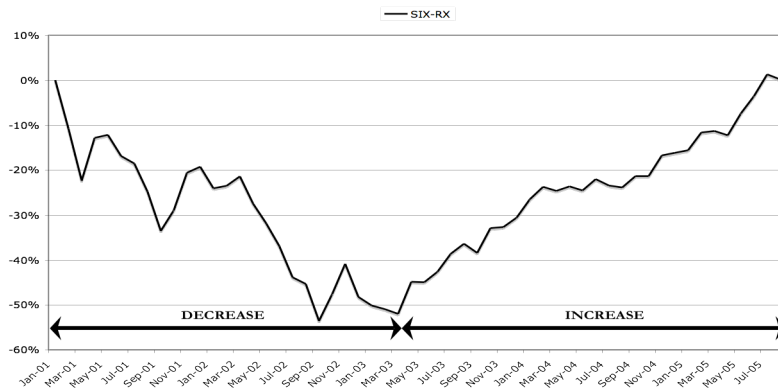
4. EMPIRICAL FINDINGS

This chapter will include a description of the empirical findings. A presentation, both in tables and graphs, of the results will be incorporated together with an enlightenment of the most essential findings. There will furthermore be a summary of the primary data that has been obtained through interviews.

4.1 Market cycle

To be able to find a time period in which the Swedish stock market has had a downward period and an upward period; a cycle, and a sufficient number of observations, one has to go back to the end of January 2001. From that point forward to the end of August 2005, the market had a marginal positive development of 0,14%. During this period, only 8 out of 28 hedge funds, in our sample, were active. This period has further been divided into one period of market decrease and one period of market increase, as seen in the figure below. The breaking point was set to the end of March 2003, with the ambition of having two fairly equal time periods. The results are based on monthly data and fund management fees are not included. Statistically significant (2-sided, 95% confidence interval) correlations are hereafter marked with an asterisk (*).

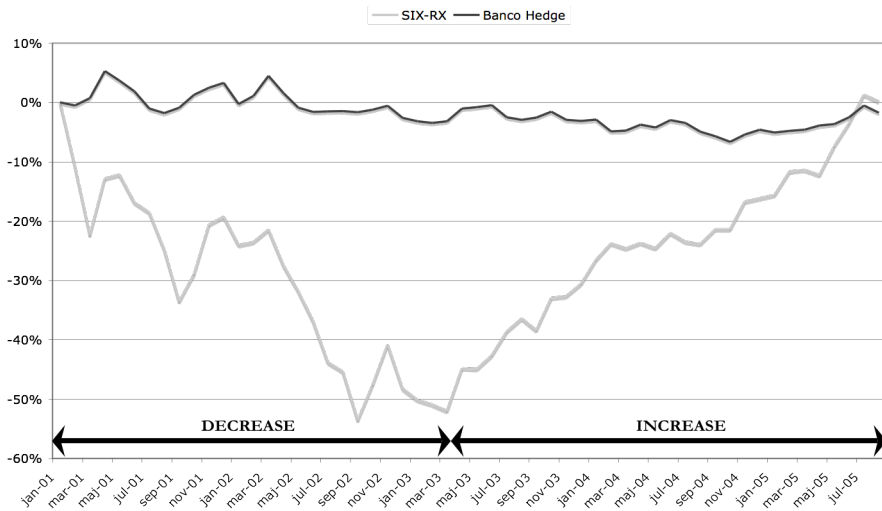
Figure 4-1 SIX-RX during a stock market cycle



The following statistical measures were chosen in accordance to the purpose of this thesis.

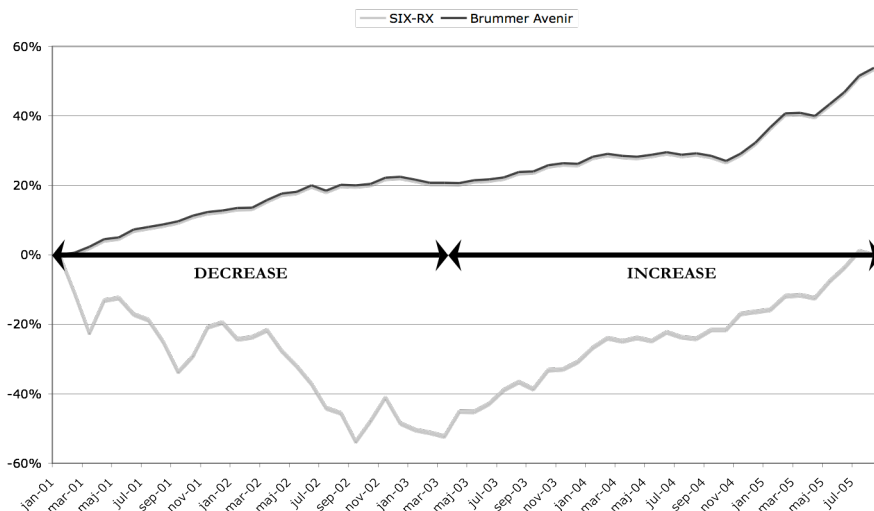
Sharpe Ratio		Treyner Ratio		Jensen's Alpha		Pearson Correlation	
Brunner Avenir	0,48	Brunner Avenir	0,15	Lynx	1,17%	Banco Hedge	0,45
Brunner Futuris	0,44	Tanglin	0,13	Brunner Futuris	0,95%	Brunner Avenir	0,23
Tanglin	0,39	Brunner Manticore	0,02	Tanglin	0,62%	Tanglin	0,21
Lynx	0,28	Lancelot Merlin	0,00	Brunner Avenir	0,52%	Brunner Manticore	-0,09
Brunner Zenit	0,15	Brunner Zenit	-0,01	Brunner Zenit	0,46%	Brunner Futuris	-0,36
Lancelot Merlin	0,03	Banco Hedge	-0,03	Lancelot Merlin	0,07%	Lynx	-0,41
Brunner Manticore	-0,03	Lynx	-0,05	Brunner Manticore	-0,05%	Lancelot Merlin	-0,65
Banco Hedge	-0,19	Brunner Futuris	-0,09	Banco Hedge	-0,29%	Brunner Zenit	-0,73

Figure 4-2 Hedge fund performance measurements during the stock market cycle



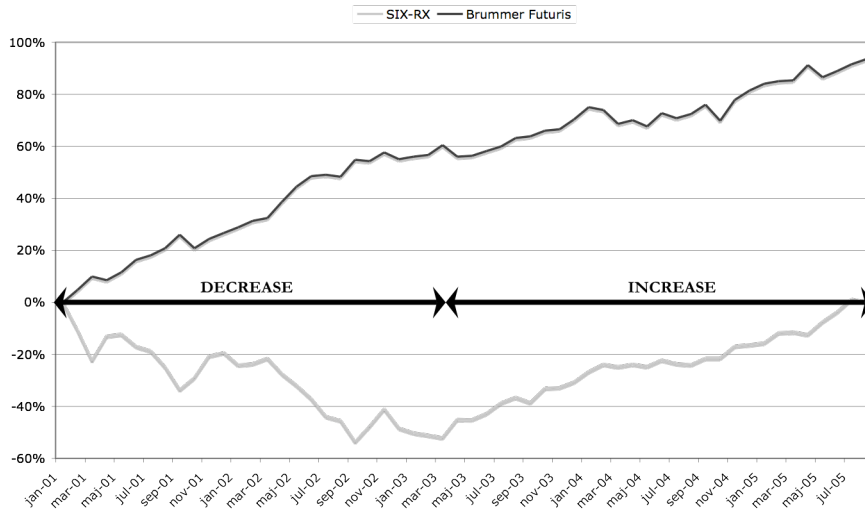
4-3 BANCO HEDGE	
Cycle	
Std.dev.	1,51%
Std.dev. SIXRX	6,83%
Sharpe Ratio	-0,19
Treynor Ratio	-0,03
Jensens Alpha	-0,29%
Pearson Correlation	0,45*
Market Development	0,14%
Fund Development	-1,74%
Decrease	
Std.dev.	1,88%
Std.dev. SIXRX	8,37%
Sharpe Ratio	-0,24
Treynor Ratio	-0,04
Jensens Alpha	-0,16%
Pearson Correlation	0,49
Market Development	-52,01%
Fund Development	-3,15%
Increase	
Std.dev.	1,11%
Std.dev. SIXRX	3,84%
Sharpe Ratio	-0,14
Treynor Ratio	-0,01
Jensens Alpha	-0,42%
Pearson Correlation	0,38
Market Development	108,66%
Fund Development	1,46%

Banco Hedge is the only fund that has shown a negative development during the chosen period and is consequently the fund with the poorest return. This is also reflected in their Sharpe Ratio and Jensen’s Alpha, which is the lowest in the competition. They also show a high correlation (0,45), which is statistically secured ($p=0,001$), with the market. The fact that the correlation is higher in a decreasing market than in an increasing market should trouble their investors. The negative Jensen’s Alpha shows their lack of ability to create a positive absolute return. On the positive side, Banco Hedge has a low volatility in comparison.



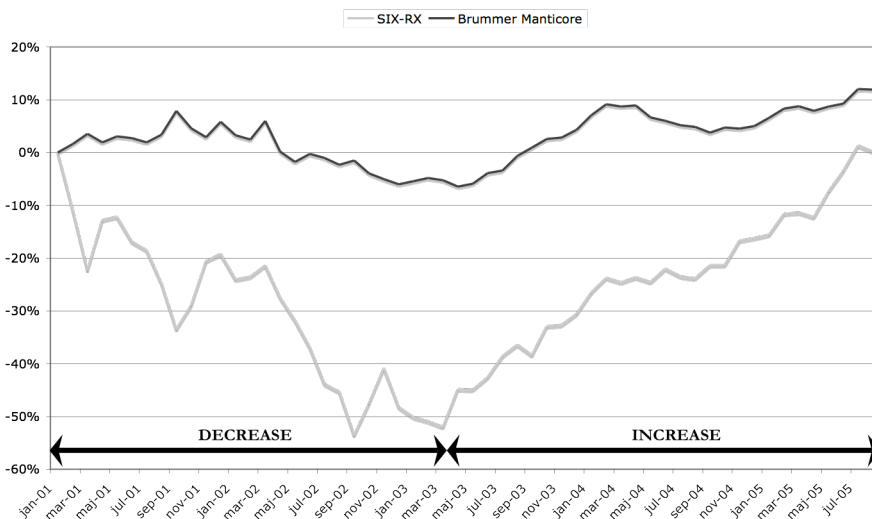
4-4 BRUMMER AVENIR	
Cycle	
Std.dev.	1,08%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,48
Treynor Ratio	0,15
Jensens Alpha	0,52%
Pearson Correlation	0,23
Market Development	0,14%
Fund Development	53,80%
Decrease	
Std.dev.	0,91%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,43
Treynor Ratio	0,15
Jensens Alpha	0,46%
Pearson Correlation	0,26
Market Development	-52,01%
Fund Development	20,74%
Increase	
Std.dev.	1,24%
Std.dev. SIXRX	3,84%
Sharpe Ratio	0,51
Treynor Ratio	0,08
Jensens Alpha	0,44%
Pearson Correlation	0,25
Market Development	108,66%
Fund Development	27,38%

Brummer Avenir has the highest Sharpe Ratio and Treynor Ratio, which measure the risk-adjusted performance. This can be highly attributed to the low level of risk that the fund display, the volatility presented is actually the lowest examined during a stock market cycle. The correlation towards the market is comparatively low and is not statistically secured.



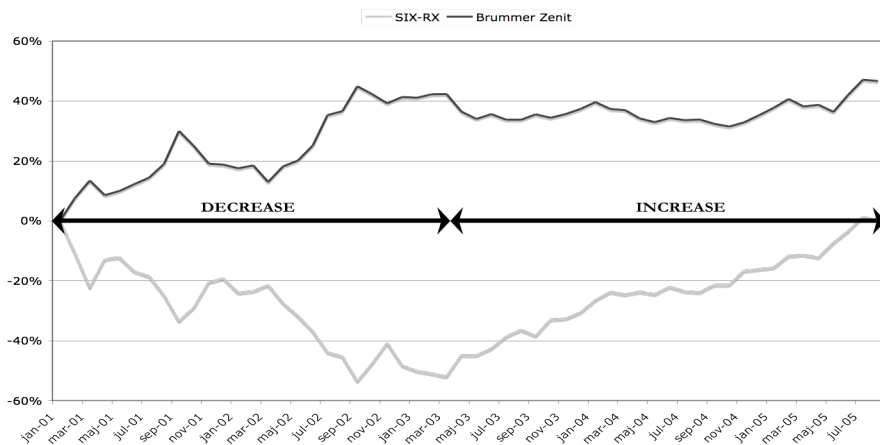
4-5 BRUMMER FUTURIS	
Cycle	
Std.dev.	2,17%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,44
Treynor Ratio	-0,09
Jensens Alpha	0,95%
Pearson Correlation	-0,36*
Market Development	0,14%
Fund Development	93,49%
Decrease	
Std.dev.	2,26%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,67
Treynor Ratio	-0,13
Jensens Alpha	1,19%
Pearson Correlation	-0,45
Market Development	-52,01%
Fund Development	60,42%
Increase	
Std.dev.	1,96%
Std.dev. SIXRX	3,84%
Sharpe Ratio	0,23
Treynor Ratio	0,18
Jensens Alpha	0,39%
Pearson Correlation	0,05
Market Development	108,66%
Fund Development	20,62%

Brummer's hedge fund Futuris is inconsistent in the results regarding the risk-adjusted performance. It shows a high Sharpe Ratio of 0,44 but at the same time a very low Treynor Ratio of -0,09. This is due to the negative beta of -0,11 that affects the Treynor Ratio. The fund shows a high average risk-adjusted absolute return (Jensens Alpha) of 0,95% and a statistically secured negative correlation of -0,36.



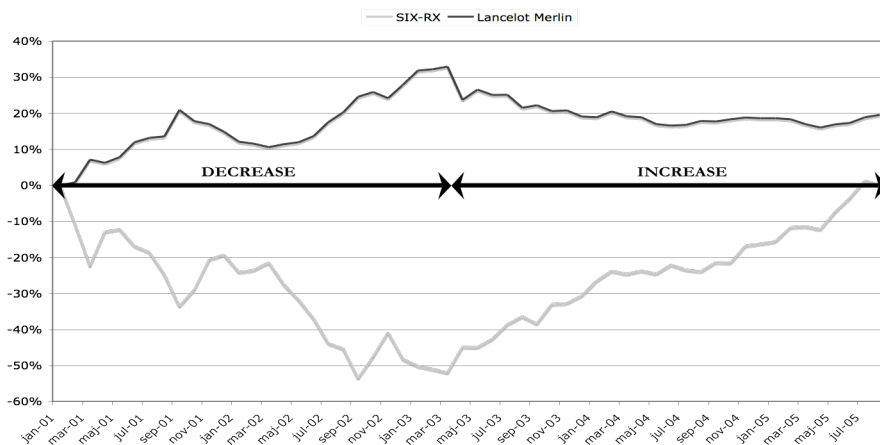
4-6 BRUMMER MANTICORE	
Cycle	
Std.dev.	1,78%
Std.dev. SIXRX	6,83%
Sharpe Ratio	-0,03
Treynor Ratio	0,02
Jensens Alpha	-0,05%
Pearson Correlation	-0,09
Market Development	0,14%
Fund Development	11,90%
Decrease	
Std.dev.	2,18%
Std.dev. SIXRX	8,37%
Sharpe Ratio	-0,24
Treynor Ratio	0,07
Jensens Alpha	-0,74%
Pearson Correlation	-0,30
Market Development	-52,01%
Fund Development	-5,25%
Increase	
Std.dev.	1,25%
Std.dev. SIXRX	3,84%
Sharpe Ratio	0,30
Treynor Ratio	0,07
Jensens Alpha	0,24%
Pearson Correlation	0,17
Market Development	108,66%
Fund Development	18,10%

Brummer Manticore demonstrates the most neutral correlation (-0,09), towards the market index in the sample and manages to keep a negative correlation (-0,30) during a market decrease and a positive (0,17) during an increase. They also show a low volatility but fail to generate a positive risk-adjusted absolute return (-0,05%).



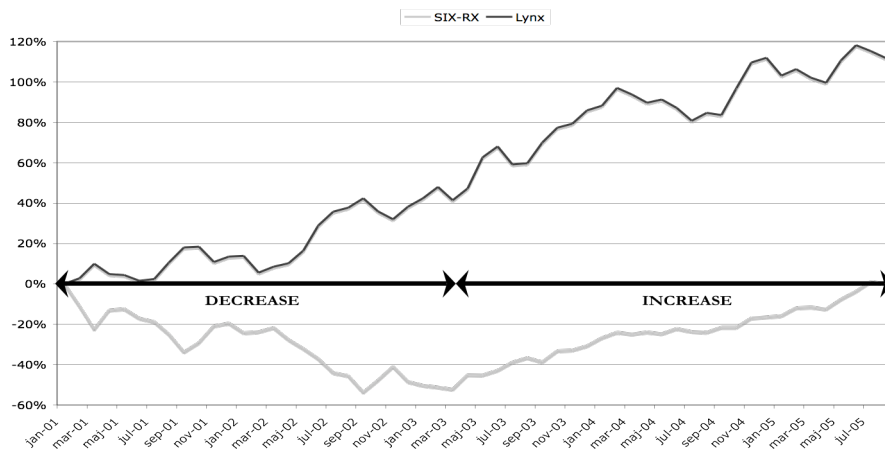
4-7 BRUMMER ZENIT	
Cycle	
Std.dev.	3,03%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,15
Treynor Ratio	-0,01
Jensens Alpha	0,46%
Pearson Correlation	-0,73*
Market Development	0,14%
Fund Development	46,60%
Decrease	
Std.dev.	3,90%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,28
Treynor Ratio	-0,03
Jensens Alpha	0,05%
Pearson Correlation	-0,84
Market Development	-52,01%
Fund Development	42,31%
Increase	
Std.dev.	1,80%
Std.dev. SIXRX	3,84%
Sharpe Ratio	-0,05
Treynor Ratio	0,01
Jensens Alpha	0,11%
Pearson Correlation	-0,18
Market Development	108,66%
Fund Development	3,01%

Besides being the first hedge fund in Sweden, Brummer Zenit also shows a fine return during the sample period. This is however, at the expense of a higher volatility which influences their Sharpe Ratio (0,15) to a moderate level. Their high negative correlation (-0,73) provides them with a negative beta (-0,32), which in turn affects their Treynor Ratio (-0,01) negatively and Jensen’s Alpha (0,46%) in a positive way. The extremely high negative correlation (-0,84) during the market decrease has consequently made Brummer Zenit show an impressive return of 42,31% (market - 52,01%), however, they have the second highest volatility during the same time frame.



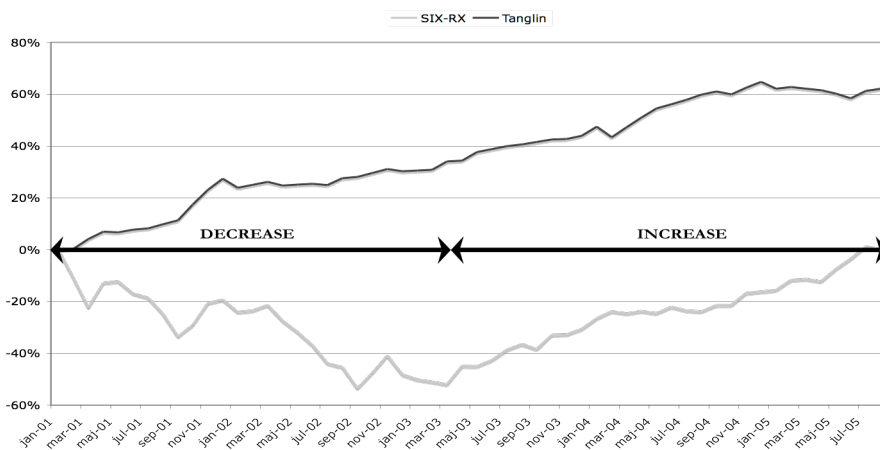
4-8 LANCELOT MERLIN	
Cycle	
Std.dev.	2,13%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,03
Treynor Ratio	0,00
Jensens Alpha	0,07%
Pearson Correlation	-0,65*
Market Development	0,14%
Fund Development	19,56%
Decrease	
Std.dev.	2,36%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,33
Treynor Ratio	-0,05
Jensens Alpha	0,30%
Pearson Correlation	-0,64
Market Development	-52,01%
Fund Development	32,91%
Increase	
Std.dev.	1,64%
Std.dev. SIXRX	3,84%
Sharpe Ratio	-0,34
Treynor Ratio	0,03
Jensens Alpha	-0,05%
Pearson Correlation	-0,52
Market Development	108,66%
Fund Development	-10,04%

Lancelot Merlin also displays a high negative correlation (-0,65) and subsequently presents a much greater return (32,91%) during the market decrease than during the increase (-10,04%). The risk adjusted measurements places Lancelot Merlin in the lower middle of the competition.



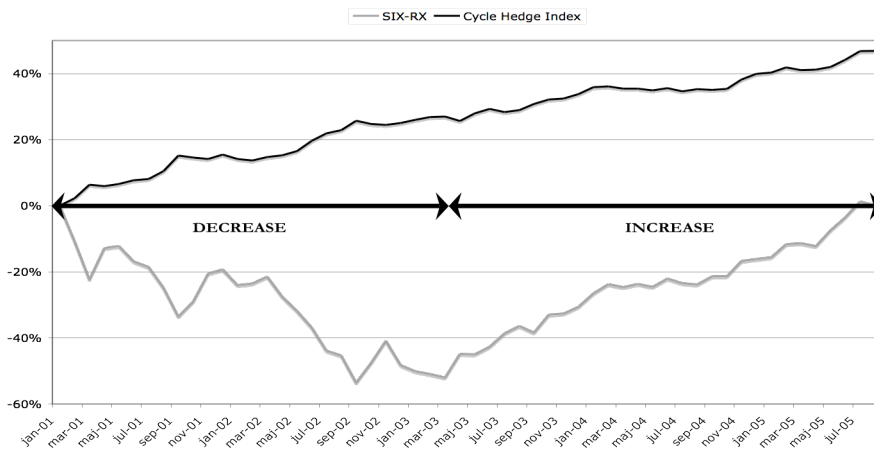
Lynx generates the highest return (111,75%) in the sample and is successful in creating a high positive return in both the decrease (41,33%) and the increase (49,83%) of the selected index. Not surprisingly, this is followed by the highest volatility. Nevertheless, the high return generates the highest Jensen’s Alpha (1,17%) during the sample period.

4-9 LYNX	
Cycle	
Std.dev.	4,17%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,28
Treynor Ratio	-0,05
Jensens Alpha	1,17%
Pearson Correlation	-0,41*
Market Development	0,14%
Fund Development	111,75%
Decrease	
Std.dev.	4,64%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,24
Treynor Ratio	-0,03
Jensens Alpha	0,05%
Pearson Correlation	-0,71
Market Development	-52,01%
Fund Development	41,33%
Increase	
Std.dev.	3,79%
Std.dev. SIXRX	3,84%
Sharpe Ratio	0,33
Treynor Ratio	0,09
Jensens Alpha	0,93%
Pearson Correlation	0,14
Market Development	108,66%
Fund Development	49,83%



The results on Tanglin place them high in risk-adjusted measurements compared with the competition. Even though they demonstrate a negative correlation during an upward market and vice versa. They generate a positive return of 62,14% during the entire market cycle. The correlation during the cycle is low (0,21) and is not statistically secured.

4-10 TANGLIN	
Cycle	
Std.dev.	1,58%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,39
Treynor Ratio	0,13
Jensens Alpha	0,62%
Pearson Correlation	0,21
Market Development	0,14%
Fund Development	62,14%
Decrease	
Std.dev.	1,84%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,44
Treynor Ratio	0,08
Jensens Alpha	1,07%
Pearson Correlation	0,45
Market Development	-52,01%
Fund Development	34,03%
Increase	
Std.dev.	1,30%
Std.dev. SIXRX	3,84%
Sharpe Ratio	0,35
Treynor Ratio	-0,13
Jensens Alpha	0,54%
Pearson Correlation	-0,11
Market Development	108,66%
Fund Development	20,97%



4-11 CYCLE HEDGE INDEX	
Cycle	
Std.dev.	1,15%
Std.dev. SIXRX	6,83%
Sharpe Ratio	0,38
Treynor Ratio	-0,05
Jensens Alpha	0,43%
Pearson Correlation	-0,54
Market Development	0,14%
Fund Development	46,88%
Decrease	
Std.dev.	1,39%
Std.dev. SIXRX	8,37%
Sharpe Ratio	0,42
Treynor Ratio	-0,05
Jensens Alpha	0,28%
Pearson Correlation	-0,70
Market Development	-52,01%
Fund Development	26,98%
Increase	
Std.dev.	0,86%
Std.dev. SIXRX	3,84%
Sharpe Ratio	0,34
Treynor Ratio	0,34
Jensens Alpha	0,27%
Pearson Correlation	0,04
Market Development	108,66%
Fund Development	15,68%

The index above is created as a portfolio consisting of identical proportions of each hedge fund in this sample. Noteworthy is the low volatility that distinguishes this index in comparison to the individual hedge funds. Worth mentioning is also the high negative correlation during the cycle and especially during the decrease period in contrast to the increase period where the correlation is close to zero.

4.2 Last 36 months

A commonly used measurement, for example utilized by Morningstar, is the performance during the last 36 months. In our sample of 28 hedge funds, 21 have been active since 36 months back, which in this case is since the end of October 2003. During this period, the market index has increased with 103,38% and has had an almost constant increase, with the only real setback during the spring 2006.

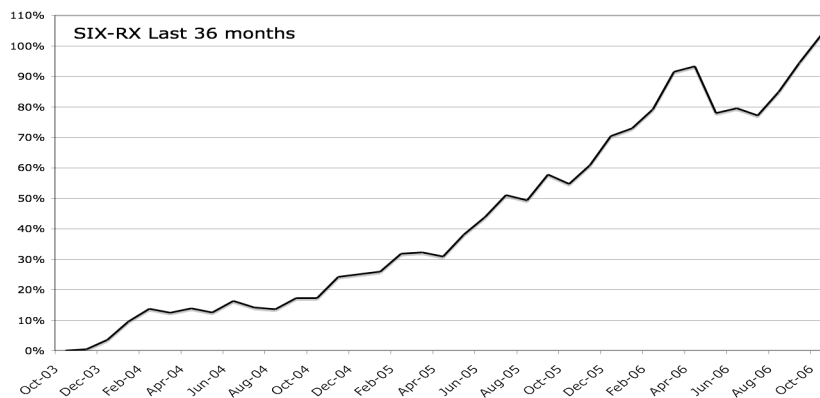


Figure 4-12 SIX-RX during last 36 months

The following charts display a summary of the measurement regarding the 36 months sample, presented in alphabetical order. MRAR is short for Morningstar Risk-Adjusted Return, which measures the historical return and penalizes risk.

Figure 4-13 Hedge fund performance during the last 36 months

LAST 36 MONTHS	Aktie-Ansvar Graal	Banco Hedge	Bid & Ask Stella Nova	Brummer Avenir	Brummer Futuris	Brummer Manticore	Brummer Zenit
Std.dev.	0,62%	1,29%	0,75%	1,93%	2,25%	1,41%	1,95%
Std.dev. SIXRX	3,19%	3,19%	3,19%	3,19%	3,19%	3,19%	3,19%
Exp. return	0,59%	0,38%	0,71%	0,81%	0,53%	0,34%	0,69%
Exp. return SIXRX	2,04%	2,04%	2,04%	2,04%	2,04%	2,04%	2,04%
Sharpe Ratio	0,65	0,15	0,71	0,32	0,16	0,11	0,26
Beta	0,11	0,25	-0,01	0,37	0,25	0,16	0,30
Treynor Ratio	0,04	0,01	-0,99	0,02	0,01	0,01	0,02
Jensen's Alpha	0,19%	-0,27%	0,54%	-0,07%	-0,11%	-0,14%	-0,05%
Pearson Correlation	0,60	0,64	-0,02	0,63	0,36	0,37	0,51
Market Development	103,38%	103,38%	103,38%	103,38%	103,38%	103,38%	103,38%
Fund Development	23,35%	14,11%	28,88%	32,59%	19,97%	12,42%	27,37%
MRAR	7,20%	4,30%	8,76%	9,37%	5,64%	3,74%	7,92%

LAST 36 MONTHS	DnB NOR ARI Primus	Erik Penser Hedgefond	IPM Global Dimensions	Lancelot Merlin	Lannebo Alpha	Lynx	Nordea Euro. Equity Hedge
Std.dev.	1,42%	1,46%	1,33%	1,84%	0,65%	3,04%	0,71%
Std.dev. SIXRX	3,19%	3,19%	3,19%	3,19%	3,19%	3,19%	3,19%
Exp. return	0,41%	0,81%	0,26%	0,20%	0,17%	0,76%	0,44%
Exp. return SIXRX	2,04%	2,04%	2,04%	2,04%	2,04%	2,04%	2,04%
Sharpe Ratio	0,16	0,43	0,06	0,01	-0,03	0,19	0,36
Beta	0,22	0,23	0,31	0,34	0,08	0,23	0,10
Treynor Ratio	0,01	0,03	0,00	0,00	0,00	0,02	0,03
Jensen's Alpha	-0,18%	0,20%	-0,50%	-0,61%	-0,17%	0,14%	0,07%
Pearson Correlation	0,50	0,52	0,77	0,60	0,41	0,25	0,45
Market Development	103,38%	103,38%	103,38%	103,38%	103,38%	103,38%	103,38%
Fund Development	15,30%	33,39%	9,38%	6,79%	6,10%	29,04%	16,87%
MRAR	4,61%	9,81%	2,82%	1,81%	7,21%	7,73%	5,27%

LAST 36 MONTHS	Nordic Abs. Return Fund	P&N Yield	Peter Edwall Pecunia	RAM ONE	Sector Hedge	SHB Hedge Aktie Europa	Tanglin
Std.dev.	2,52%	0,40%	2,66%	1,42%	2,90%	0,85%	1,17%
Std.dev. SIXRX	3,19%	3,19%	3,19%	3,19%	3,19%	3,19%	3,19%
Exp. return	1,18%	0,48%	0,96%	0,80%	0,98%	0,21%	0,56%
Exp. return SIXRX	2,04%	2,04%	2,04%	2,04%	2,04%	2,04%	2,04%
Sharpe Ratio	0,40	0,75	0,29	0,43	0,28	0,03	0,32
Beta	0,51	0,09	-0,14	0,33	0,63	0,18	0,02
Treynor Ratio	0,02	0,03	-0,06	0,02	0,01	0,00	0,19
Jensen's Alpha	0,05%	0,14%	1,04%	0,01%	-0,37%	-0,30%	0,34%
Pearson Correlation	0,67	0,72	-0,17	0,76	0,71	0,67	0,05
Market Development	103,38%	103,38%	103,38%	103,38%	103,38%	103,38%	103,38%
Fund Development	50,97%	18,78%	39,57%	32,74%	40,14%	7,60%	21,90%
MRAR	13,90%	5,89%	10,83%	9,64%	10,84%	2,38%	6,65%

During this period, the market index has had a positive return of 103,38 %, which no hedge fund has been able to match. In top with the highest return is Nordic Absolute Return Fund (50,97%), followed by Sector Hedge (40,14%) and Peter Edwall Pecunia (39,57%), no fund has had a

negative development. Hedge funds are traditionally considered as a low risk investment and several funds in the sample have a set objective of keeping a low risk. Unfortunately, both Lynx (3,04%) and Sector Hedge (2,90%) have volatility in the near region of the Swedish stock market (3,19%), which cannot be considered as a low risk instrument.

IPM Global Dimensions Fund (0,77) and RAM ONE (0,76) have the highest correlations towards the market, which are statistically secured ($p < 0,05$). In general, all funds have a positive correlation towards the market except Bid & Ask Stella Nova Hedgefond and Peter Edwall Pecunia. In this case, a somewhat positive correlation could be desirable since the market has shown such a positive development during the sample period, making long positions favourable.

In terms of risk-adjusted measurements, P&N Yield (0,75) and Bid & Ask Stella Nova (0,71) have the highest Sharpe Ratio, only Lannebo Alpha (-0,03) has a negative. Tanglin has without comparison the highest Treynor Ratio (0,19) and Bid & Ask the lowest (-0,99). Peter Edwall Pecunia generates the greatest risk-adjusted absolute return (1,04%) followed by Bid & Ask (0,54%) and Tanglin (0,34%). 11 out of 21 hedge funds generates a negative risk-adjusted absolute return, which is highly remarkable.

The accepted MRAR measurement, which is the foundation for Morningstar's rating, placed Nordic Absolute Return Fund (13,90%) in top. High marks in this category as well for Sector Hedge (10,84%) and Peter Edwall Pecunia (10,83%) in contrary to Lancelot Merlin (1,81%) and SHB Hedge Aktie Europa (2,38%), which displayed the lowest MRAR.

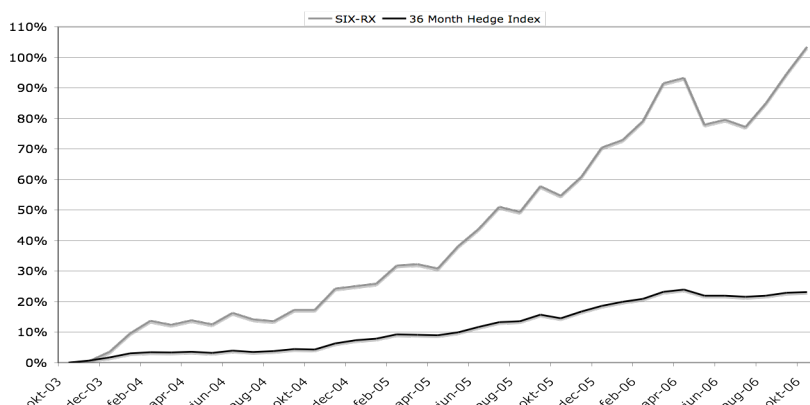


Figure 4-14 Performance of 36-month hedge fund index

This index is created as portfolio that contains equally large

portions of each hedge fund in the 36-month sample. The value of Jensen's Alpha is interesting since it indicates that no abnormal return was created if one would invest in this hedge fund

LAST 36 MONTHS	36 Month Hedge Index
Std.dev.	0,83%
Std.dev. SIXRX	3,19%
Exp. return	0,59%
Exp. return SIXRX	2,04%
Sharpe Ratio	0,48
Beta	0,22
Treynor Ratio	0,02
Jensen's Alpha	0,00%
Pearson Correlation	0,85
Market Development	103,38%
Fund Development	23,13%

portfolio. The extremely high correlation is also remarkable, it is higher than any individual hedge fund has displayed during the last 36 months.

4.3 Total hedge fund performance

Finally, a summary of the performance of all hedge funds in the sample is presented. The data is based on the hedge fund return from the beginning of its existence. A consequence of this is that the results are based on widely varying observations, and spread from Brummer Zenit, (active since 1996) to Lannebo Alpha (active since the beginning of 2006). This makes the measurements inappropriate for comparison between the funds and should consequently be seen as individual measures of the specific fund in its specific context and time period. The results are presented in alphabetical order.

Figure 4-15 Hedge fund performance since establishment

SINCE START	Aktie-ansvar Graal	Banco Hedge	Bergsgård Petersson	Bid & Ask Stella Nova	Brummer Avenir	Brummer Futuris	Brummer Manticore
Observations	52	106	10	38	71	85	70
Std.dev.	0,89%	1,71%	4,30%	0,73%	1,51%	4,21%	1,75%
Std.dev. SIXRX	5,63%	6,42%	4,24%	3,41%	6,33%	6,61%	6,37%
Exp. return	0,80%	0,58%	1,25%	0,71%	0,76%	1,51%	0,23%
Exp. return SIXRX	1,65%	1,06%	1,87%	2,08%	0,68%	0,91%	0,72%
Sharpe Ratio	0,64	0,18	0,25	0,73	0,33	0,30	-0,01
Beta	0,04	0,10	0,32	0,00	0,07	0,13	-0,01
Treynor Ratio	0,14	0,03	0,03	-4,23	0,07	0,09	0,02
Jensen's Alpha	0,51%	0,23%	0,52%	0,53%	0,47%	1,16%	-0,02%
Pearsoncorrelation	0,27	0,38*	0,35	-0,01	0,29*	0,21*	-0,05
Market Development	116,28%	146,34%	19,35%	114,42%	40,59%	80,24%	43,86%
Fund Development	50,68%	82,11%	12,30%	30,91%	69,31%	233,47%	16,33%
MRAR	9,82%	6,66%	12,92%	8,81%	9,01%	16,55%	2,25%

SINCE START	Brummer Zenit	Catella Hedgefond	DLG Aktiefond	DnB NOR ARI Primus	Erik Penser Hedgefond	Gladiator	Holtback Amplus
Observations	124	32	13	45	54	15	30
Std.dev.	4,08%	0,92%	6,55%	1,27%	1,95%	3,03%	1,82%
Std.dev. SIXRX	6,27%	3,28%	4,05%	3,87%	5,75%	3,97%	3,34%
Exp. return	1,85%	0,81%	3,72%	0,42%	0,78%	1,57%	0,85%
Exp. return SIXRX	1,28%	1,89%	2,05%	2,33%	1,34%	2,08%	2,01%
Sharpe Ratio	0,38	0,69	0,54	0,17	0,29	0,46	0,37
Beta	-0,03	0,21	1,34	0,14	0,24	0,59	0,41
Treynor Ratio	-0,59	0,03	0,03	0,02	0,02	0,02	0,02
Jensen's Alpha	1,58%	0,27%	1,03%	-0,07%	0,29%	0,27%	-0,07%
Pearsoncorrelation	-0,04	0,78*	0,90*	0,42*	0,73*	0,83*	0,78*
Market Development	281,43%	78,87%	28,90%	173,60%	88,10%	34,66%	78,65%
Fund Development	777,94%	29,23%	56,77%	20,39%	51,02%	25,52%	28,39%
MRAR	21,09%	9,99%	43,94%	4,87%	9,11%	18,73%	10,08%

Hammarbäck & Kastensson – Swedish Hedge Funds

SINCE START	IPM Global Dimensions F.	Lancelot Merlin	Lannebo Alpha	Lynx	Nordea Euro. Equity Hedge	Nordic Abs. Return Fund	P&N Idea
Observations	42	73	10	78	56	43	10
Std.dev.	1,35%	2,26%	1,15%	3,89%	0,82%	2,38%	2,78%
Std.dev. SIXRX	3,37%	6,32%	4,24%	6,23%	5,78%	3,85%	4,24%
Exp. return	0,17%	0,51%	0,60%	1,32%	0,51%	0,96%	0,62%
Exp. return SIXRX	2,23%	0,52%	1,87%	0,32%	1,20%	2,53%	1,87%
Sharpe Ratio	-0,02	0,11	0,36	0,27	0,34	0,32	0,16
Beta	0,28	-0,14	0,17	-0,22	0,00	0,28	0,54
Treynor Ratio	0,00	-0,02	0,02	-0,05	-1,33	0,03	0,01
Jensen's Alpha	-0,59%	0,29%	0,13%	1,07%	0,28%	0,11%	-0,47%
Pearsoncorrelation	0,71*	-0,41*	0,69*	-0,35*	-0,02	0,47*	0,91*
Market Development	147,30%	26,67%	19,35%	10,62%	78,33%	184,20%	19,35%
Fund Development	7,01%	42,68%	6,10%	163,29%	32,60%	49,11%	6,03%
MRAR	1,74%	5,38%	7,21%	14,05%	6,15%	11,08%	6,33%

SINCE START	P&N Yield	Peter Edwall Pecunia	Radar	RAM ONE	Sector Hedge	SHB Hedge Aktie Europa	Tanglin
Observations	47	57	13	48	49	60	75
Std.dev.	0,47%	3,49%	1,06%	1,88%	3,21%	0,88%	1,63%
Std.dev. SIXRX	4,44%	5,73%	4,05%	4,67%	4,87%	5,82%	6,32%
Exp. return	0,61%	1,47%	2,70%	0,44%	1,13%	0,11%	1,01%
Exp. return SIXRX	1,89%	1,19%	2,05%	2,12%	2,34%	1,26%	0,42%
Sharpe Ratio	0,84	0,35	2,39	0,12	0,28	-0,14	0,46
Beta	0,06	0,17	0,10	0,17	0,44	0,05	0,04
Treynor Ratio	0,06	0,07	0,26	0,01	0,02	-0,03	0,20
Jensen's Alpha	0,29%	1,08%	2,35%	-0,11%	-0,02%	-0,18%	0,74%
Pearsoncorrelation	0,61*	0,28*	0,40	0,44*	0,68*	0,32*	0,15
Market Development	130,60%	79,58%	28,90%	160,17%	193,69%	91,98%	18,38%
Fund Development	32,71%	122,11%	41,23%	22,22%	69,10%	6,52%	110,48%
MRAR	7,47%	16,55%	37,37%	4,71%	12,38%	1,18%	12,30%

4.3.1 Total hedge fund index

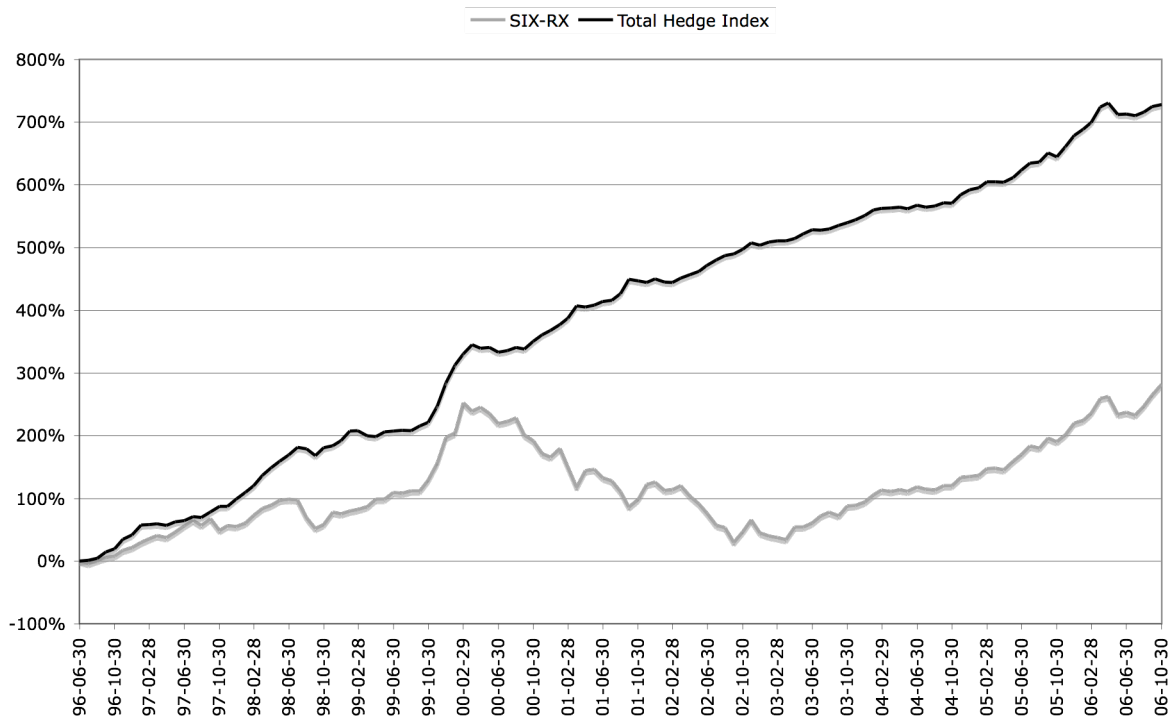


Figure 4-16 Total hedge fund index

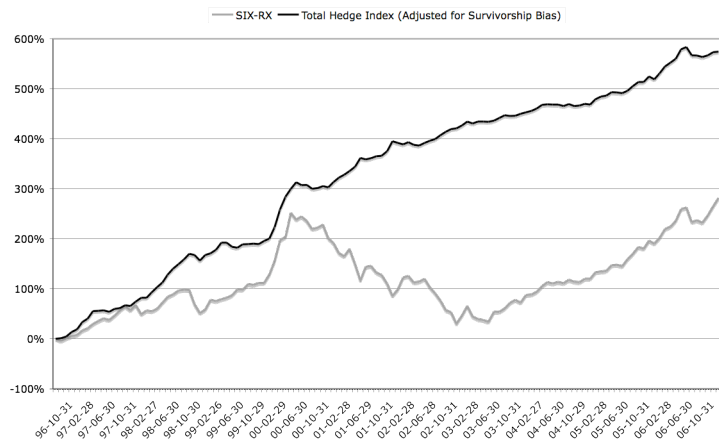
This index has been created as a portfolio containing an equally large part of every hedge fund in the sample, which is active, during a specific point of time. As the chart displays, holding this portfolio during this period of time would have been more than a decent investment. One should consider, however, that neither management fees (usually 1%) nor performance fees (usually 20% of the positive return that exceeds the risk-free return) are taken into consideration in this index. Besides the extraordinary development, the low correlation of -0,04 is noticeable.

TOTAL HEDGE INDEX	
Observations	124
Std.dev.	4,08%
Std.dev. SIXRX	6,27%
Exp. return	1,85%
Exp. return SIXRX	1,28%
Sharpe Ratio	0,38
Beta	-0,03
Treynor Ratio	-0,59
Jensen's Alpha	1,58%
Pearsoncorrelation	-0,04
Market Development	281,43%
Fund Development	777,94%

4.3.2 Index adjusted for survivorship bias

An adjustment for an annual loss of 2% (0,17% monthly), caused by survivorship bias, would still generate an impressive return compared to the market index. Note, however, that from an investor's point-of-view, there is still no consideration taken to fees.

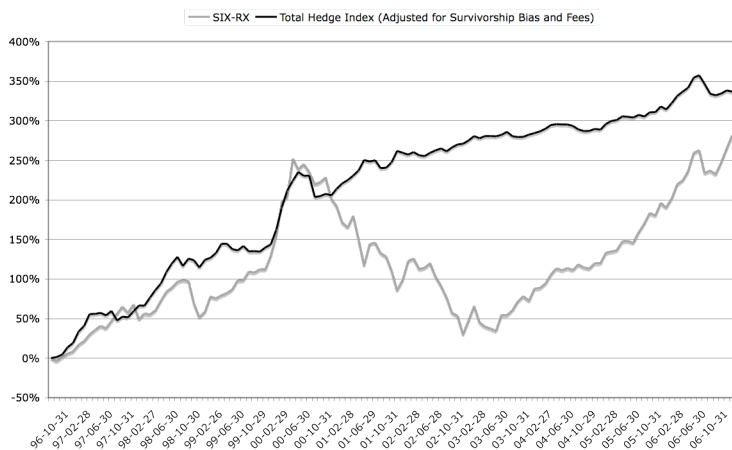
Figure 4-17 Total hedge fund index adjusted for survivorship bias



4.3.3 Index adjusted for survivorship bias and fees

Figure 4-18 Total hedge fund index adjusted for survivorship bias and fees

This index displays our total hedge fund index adjusted for both survivorship bias and management- and performance fees. The fees have been generalized to 20% of the positive return each year instead of the return exceeding a risk-free return for example, which is common. This way, a greater fee is actually calculated since every fund has not generated a positive return (especially not exceeding a risk free return) each year. These facts make this index under-valued in comparison to what the real-life portfolio would have been. As the chart displays, the hedge fund portfolio has still generated a greater return than the market index during this period of time.



4.4 Qualitative findings

In this thesis, the qualitative findings serve the purpose of adding depth to the final analysis. The findings consist of four interviews with various actors on the Swedish hedge fund market. A summarized presentation of the essential findings and answers is displayed below.

4.4.1 *Jonas Lindmark – Morningstar*

Jonas Lindmark believes that hedge funds serve the purpose, from the market's perspective, to correct imperfections regarding price-levels. Consequently, they contribute to an increased efficiency on the market. Traditionally, hedge funds should stay uncorrelated towards the market and this mainly applies to hedge funds which focus on arbitrage. If the funds only exploit arbitrage possibilities, they are not exposed to the market risk and consequently uncorrelated. However this is not the case in Sweden since long/short equity is the most common strategy. Lindmark points out that many hedge funds give the impression of generating alpha but as a matter of fact, charge the investor for the market risk, beta. Lindmark perceives hedge funds as a good investment if one has an investment horizon of approximately 3 years, since the return is fairly stable. For investments over longer periods, 10 years, it is more lucrative to take market risk with a mutual fund. Hedge funds could serve a purpose as a part of a portfolio for diversifying purposes. He believes that the minimum investment is high but there are ways to get around it. For example through Internet stockbrokers¹²⁷, several investors can together invest in a hedge fund, thus lowering the individual investor's investment. He thinks that the rising stock market currently lowers the general interest for hedge funds and that the investor's greed is greater than her fear of losing money. He emphasizes the importance, when evaluating hedge funds, of examining how well they perform during a declining market. He believes that the hedge funds performing extremely well in positive markets are those that investors should worry about, since they probably have many long positions¹²⁸ and would consequently follow the market if it declines. He is sceptic towards hedge funds as a pension investment. Additionally, he believes that mutual funds outperform hedge funds over a longer period of time. He sees a trend that hedge fund returns decrease and believes that this is a consequence of the increasing number of hedge funds on the market which results in fewer arbitrage opportunities. Lindmark believes that hedge fund managers are more important than the hedge fund itself. When new managers are appointed, usually due to previous manager's lack of inspiration, the direction of the fund usually

¹²⁷ For example Avanza

¹²⁸ Consequently high market correlation (authors note)

changes. A potential consequence may be that many investors utilize a strategy of investing in recently established hedge funds in order to withdraw from the fund when the initial period is over. He underlines the importance for hedge fund managers to invest their own money into the fund, as an incentive for a lower risk. He also says that the performance-based fee is a good way of creating mutual interest between the investor and manager.

4.4.2 Jonas Wikström – WR Capital

An investment in WR Capital, managed by Jonas Wikström and Tomas Risbecker, is considered as a way of protecting your existing capital rather than creating wealth. He thinks that there is a trend today which indicates that investors are willing to pay for alpha, in contrast to beta. He admits that many hedge funds use beta as a way of increasing returns, but he proclaims that WR Capital has the ambition of being an alpha-fund with a minor portion of beta. He thinks that investors chose WR Capital based on him and his partner's personal abilities rather than the specific strategy or investment philosophy. In a couple of years, investors probably invest in the fund based on the fund's historical performance. He perceives a problem that Sweden has a tradition of speaking of return in relative terms rather than absolute terms. In his own words; "you can't buy your children diapers with a relative return". Moreover, Wikström adds that the lack of transparency and high minimum investments is highly intentional. WR Capital is looking for high net worth-individuals and qualified investors who understands the risk and expected return that is associated with a hedge fund.

4.4.3 Björn Germer – DLG Fonder

Björn Germer begins by illustrating how hard it is to define a hedge fund. He compares it to defining an animal at Kolmården¹²⁹, every animal is unique and defining him or her with one definition is impossible. He prefers the term "special fund", characterized as funds with greater flexibility in investment strategies compared to mutual funds. Since hedge funds can benefit from a decreasing market, hedge fund managers never have an excuse for losing money, only explanations. To generate an attractive positive return, a fund has to be able to have a short-term negative return in order to generate the favourable return in a long-term perspective. In accordance with Wikström, Germer emphasizes the management team regarding its importance. Too many chefs spoil the broth¹³⁰, meaning that he and his partner is sufficient for a successful management of the fund. In accordance with Wikström, Germer emphasizes their interest in

¹²⁹ Famous Zoo outside of Norrköping in Sweden

¹³⁰ **Soup**, an aphorism for the fewer the better

finding experienced investors. This is exemplified in his own words; “many seem to believe that, earning money from the stock market, is a part of the Geneva rights”. Meaning that, earning money through Germer’s fund should not be taken for granted and their high minimum investment threshold is a way of guaranteeing experienced investors.

4.4.4 Per Olofsson – Sjunde AP-fonden

Sjunde AP-fonden has 5%¹³¹ of their investments in hedge funds. Two external fund managers with different investment strategies handle this investment. However, Sjunde AP-fonden do not have any Swedish hedge funds in their portfolio at present time¹³² due to their current high exposure to the Swedish market through other investments. Sjunde AP-fonden has a goal of return which is linked to the interest rate. When investing, they have 5 main criterions; the investment process, return, risk and correlation, employee turnover and the administrative factor. Over time, Olofsson demand low levels of correlation with the market and believes that the ideal fund would generate a positive return, regardless of the market condition. He is impressed with the performance of Swedish hedge funds during 2006 and he emphasizes the importance of evaluating these successful funds over the coming 2-3 years. The purpose of hedge funds, from an investor’s point of view, should be to generate a positive return at a lower risk than mutual funds; a higher risk-adjusted return. From the market’s perspective, he says, it refers to create a higher efficiency on the market through arbitrage possibilities. In conclusion, he believes that hedge funds in general are a positive contribution to the market. Olofsson also agreed to that some hedge funds in this thesis displayed a high correlation. Although, he believed that the correlation would decrease if combining several funds. This is one reason why Sjunde AP-fonden utilizes several hedge funds in their portfolio. At last, Olofsson believes that the market is becoming more efficient which makes it harder for hedge funds to earn abnormal returns.

¹³¹ approximately SEK 4 billion

¹³² 2006-12-20

5. ANALYSIS

The aim of this analysis is to connect the previously presented theories and empirical results in accordance to the purpose of this thesis. This chapter starts with a presentation of the chosen disposition and is followed by the actual analysis, organized in appropriate topics.

5.1 Disposition

In order to organize the analysis in a structured way, this chapter focuses on topics that summarize how hedge funds differentiate from mutual funds and consequently what makes hedge funds attractive in a portfolio. This point-of-view should provide the analysis with a discussion of how well Swedish hedge funds fulfil their purpose as a sole investment as well as a complement in a portfolio. Moreover, these topics should provide a suitable connection between the theoretical framework and the empirical findings that has been presented in previous chapters.

5.2 Risk-adjusted return

Hedge fund investments usually give the impression of having a high risk-adjusted return. In this thesis, the Sharpe Ratio and Treynor Ratio have mainly been used as a measure of comparison between the hedge funds. For a more satisfying absolute measure of the risk-adjusted return, the use of Jensen's Alpha is superior. This measure represents the manager's ability to obtain abnormal returns in contrast to beta, which is a measure of the market portion of the return. As seen in the empirical findings, a majority of the hedge funds do actually succeed in providing their investors with a positive alpha. This is clearly demonstrated when looking at the complete history of all the hedge funds, where only 8 out of 28 (29%) funds have a negative Jensen's Alpha. Moreover, this is displayed in the "total hedge fund index"¹³³, which has a considerable Jensen's Alpha of 1,58%. When studying this measure during a stock market cycle, it is hard to notice any significant difference regarding the funds' capability of delivering alpha between an upward and a downward market. It is shown that 5 out of 8 funds create a higher alpha when the market is falling. One could expect this number to be higher since it is hard to create value

¹³³ See figure 4-16

through beta when the market is falling. By studying the “Cycle hedge index”¹³⁴ for the same time-period, Jensen’s Alpha differs between 0,28% (decreasing market) and 0,27% (increasing market), which is considered as a negligible difference. It is also noticeable that the hedge fund index that was created for the 36-month period¹³⁵ displayed a Jensen’s Alpha of 0,00%, and unfortunately, no conclusions could be drawn from this fact.

In terms of risk, defined as standard deviation or volatility, without any consideration to the return, the results show that hedge funds can be considered as a lower risk investment, compared to the market index. Only two funds, DLG Aktiefond and Bergsgård Petersson Småbolag, display a higher volatility than market index during a specific time-period. These funds only appear in the study regarding the “total”¹³⁶ time period, which indicates their recent entry on the market. DLG is not considered as a low risk fund and, according to the prospect, they might experience periods when the standard deviation is higher than traditional mutual funds.¹³⁷ Bergsgård Petersson on the other hand, has an ambition of having a lower risk than a traditional mutual fund. However, there are only 10 observations for this hedge fund, which makes it hard to draw any further conclusions.

When examining hedge fund performance over a longer period of time, a market cycle and 36 months, standard deviations are significantly lower than the market index. This gives an indication of hedge funds as a relatively low-risk investment. One should, on the other hand, not forget the “survivorship bias” that may have affected these numbers in a favourable direction. By holding a broad and diversified portfolio, in accordance with the market portfolio theory, the risk usually falls. This is demonstrated in the hedge fund indices characterized by low volatility compared to the individual hedge funds.

A remarkable fact is how well the hedge funds managed the rising market situations, which is clearly displayed in the hedge fund indices created during the “total” time period. Since mid-1996 until today, the market has had a positive development of 281%. During the same time period the “total hedge fund index”¹³⁸ outperformed the market index by showing a positive return of 778%. Ackermann et al¹³⁹ showed similar results when comparing the performance of hedge

¹³⁴ See figure 4-11

¹³⁵ See figure 4-14

¹³⁶ 4.3 Total hedge fund performance

¹³⁷ For further information on investment strategy, risk management and additional information regarding the specific hedge funds in the sample, please see appendix 1.

¹³⁸ See figure 4-16

¹³⁹ Ackermann et al (1999)

funds to mutual funds rather than the market index. Even when adjusting the template loss of an annual 2%, to account for the survivorship bias, the “total hedge fund index”¹⁴⁰ managed to outperform the market index.

MRAR, in resemblance with the Sharpe Ratio and Treynor Ratio, is mainly not used as an absolute measure but as a figure for comparison. This relative measure, in accordance with Morningstar, is used to rank funds between each other. Since Morningstar mainly uses the 36-month period, this is the most relevant period for comparison. During this period, Nordic Absolute Return Fund outperformed the other funds. This was mainly due to their high average return since their volatility is not particularly low.

5.3 Absolute return

In their marketing material, hedge funds tend to focus on their ability to generate an absolute return. This was best demonstrated by Jonas Wikström at WR Capital who pointed out the fact that it is hard to buy your children diapers, for a relative return. A fact that is hard to oppose, particularly in a falling market. On the other hand, when investing in hedge funds, there is a strong tendency to have a high level of minimum investment and consequently, diapers is probably not what the return is invested in. This reasoning is probably not why investors choose hedge funds in an increasing pace. When talking to Per Olofsson, at Sjunde AP-Fonden, the absolute return was not one of the main reasons for having hedge funds in their portfolio. Jonas Lindmark, at Morningstar, had another perspective regarding different investment alternatives. He pointed out the fact that, over a long period of time, it is hard to beat the stock market since it historically has displayed an increasing value. Therefore, investing in hedge funds or mutual funds (only long positions) is a question of time horizon. If you do not have the possibility to choose when to withdraw your investment, an absolute return strategy could be a smart investment. A conclusion could therefore be that the absolute return aspect is mainly relevant to minor investors, who does not have the privilege, or choice, to await a fortunate market condition when withdrawing from their investment.

In order to determine whether or not an absolute return has been created, the chosen period of time is crucial. To create an absolute return, on a time-horizon of 10 years, an investment in a market index weighed fund should be sufficient. On the other hand, if the ambition is to generate

¹⁴⁰ See figure 4-16

an annual absolute return, one would have to choose investment strategy more wisely. This is confirmed in our study. Over a longer period of time, for example during the displayed stock market cycle, only Banco Hedge failed to generate a positive absolute return. If narrowing down the time period, in which we require a positive absolute return, to an annual basis, the disappointments increase. The empirical findings show that 4 out of 8 hedge funds manage to create an annual¹⁴¹ positive absolute return during the stock market cycle. This is clearly displayed in the charts under the topic “4.1 Market cycle”.

5.4 Part of a diversified portfolio

For wealthier investors and institutions, a way to diversify their portfolio is to invest in hedge funds, besides their investments in mutual funds etc. Hedge funds usually have the ambition to stay uncorrelated with the market in order to serve the advantage of diversifying purposes. This makes hedge funds an excellent alternative to a portfolio with a high market risk. The key concept when discussing this issue is market correlation.

The attitude towards market correlation differs between hedge funds. One could generally say that the greatest difference between hedge funds and traditional mutual funds is that the former have the proper tools to generate a positive return during a falling market condition. This is mainly due to their possibility of taking short positions, which theoretically should result in a negative correlation with the market. The conclusion can also be drawn that if a fund has a high positive correlation when the market is increasing, it should generate a positive return. This is an area in which the hedge funds differ among themselves, depending on the level of net exposure¹⁴² towards the market. Some funds have the ambition to stay uncorrelated in a rising market in order to lower the market risk in an investor’s portfolio, other take advantage of the market condition and have a high net exposure, which results in a high correlation. This explains the fact that many funds display a high positive correlation during the 36-month period, characterized by a rising market. Only 6 funds out of 21 showed a correlation under 0,40, which indicates weakly or barely any correlation. A value exceeding 0,60 demonstrates high or extremely high correlation and 10 funds can be found in this category. Jonas Wikström at WR Capital, believes that hedge fund managers often try to increase the level of market risk in the fund when the market return, in comparison to the hedge fund return, is increasing. For the hedge funds, this certainly results

¹⁴¹ From January_t to January_{t+1}

¹⁴² Difference between long and short positions

in a higher correlation with the market. This fact was expected and the main reason behind the selection of a market cycle as a period of investigation. In this period, the results regarding the funds' capability of handling both an upward and a downward market is displayed. Unfortunately, only 8 funds, that still exist, were active during this period. During the market cycle and in accordance with Fung & Hsieh¹⁴³ and Liang¹⁴⁴, hedge funds indicated low levels of, or even negative, correlation. 1 fund presented a positive correlation, 3 negative and 4 funds had weakly or barely any correlation. During the decreasing market, the funds displayed higher correlation since 2 of the funds had a positive correlation, 4 negative and only 2 funds had weakly or barely any correlation. In an upward market, there was a trend towards lower correlation since 7 funds showed weakly or barely any correlation and 1 fund a negative correlation. Several conclusions can be drawn from these figures. Providing the investors with a positive absolute return when the market conditions are favourable is probably less challenging than in the opposite situation. Therefore, keeping a low net exposure, which results in a lower correlation, is easier in an increasing market. As the market declines, hedge funds are put to the test and their varying strategies are more obvious and result in more extreme correlation values. From an investor's point of view, when evaluating hedge fund performance, one should consider their performance during a falling market. This excludes many Swedish hedge funds since they have not experienced that type of market condition yet, which is a fact that Lindmark at Morningstar agrees on.

Again, Lindmark did not see hedge funds as a part of a portfolio with an extensive time horizon. A good example is pension funds, which usually is seen as a long time investment. Lindmark is sceptic towards hedge funds ability to outperform the market in these long-term investments. He pointed out that hedge funds worldwide have had a lower return than the stock market during the last five to six years. He believes that the increasing number of actors on the hedge fund market has affected the individual fund's performance. This since they compete over a limited number of arbitrage opportunities. However, a fund solely utilizing an arbitrage strategy does not have any market risk and should subsequently be uncorrelated towards the market. He admits that this is an unusual strategy in Sweden and that Swedish hedge funds focus on stocks and do consequently not avoid market risk.

If the motivation for choosing hedge funds is the low or negative market correlation and the possibility to diversify ones portfolio, several hedge funds could be the remedy. The presented

¹⁴³ Fung & Hsieh (1997)

¹⁴⁴ Liang (1998)

“market cycle hedge index”¹⁴⁵ has a negative correlation with the market during the entire cycle and a correlation close to zero during the increasing period. This index, as a part of a portfolio, would provide a lower market risk. As an example, Sjunde AP-fonden who invests 5% in a number of hedge funds utilizes this technique. An alternative could be to invest in a fund of hedge funds to avoid the time-consuming selection process and fund evaluation.

5.5 Hedge funds as a hedge

One of the most important factors behind the increased interest for hedge funds in Sweden is their possibility to protect and preserve capital. This was best displayed during the market recession that started in 2000. As mutual funds and institutions saw their investments diminish, various hedge funds managed to, besides protecting the capital, generate a positive return. This is clearly displayed in the hedge fund indices. As seen in “total hedge fund index”¹⁴⁶, when the market had its first drawback in the beginning of 2000, the hedge fund index experienced a small stagnation, and thereafter continued to rise as the market was falling. Further inspection of this chart displays an index that in fact has protected its capital and has not seen any real drawbacks. However, the survivorship bias, which could show a temporary setback on the index is important to bare in mind. Yet, as seen in the “index adjusted for survivorship bias”¹⁴⁷, the overall performance remains satisfactory. This is also demonstrated in the “cycle hedge index”¹⁴⁸ which, as a matter of fact, displays a better performance in the decrease period in comparison to the increase period.

Another factor that speaks in favour of hedge funds during a recession is the structure of fees. By charging a relatively low management fee, that is independent to the performance, it could be considered as a relatively cheap investment when the fund displays a negative return. On the other hand, the high performance based fees¹⁴⁹ contribute to making hedge funds an expensive investment when the fund generates a positive return.

¹⁴⁵ See figure 4-11

¹⁴⁶ See figure 4-16

¹⁴⁷ See figure 4-17

¹⁴⁸ See figure 4-11

¹⁴⁹ See appendix 1 for specific figures

5.6 Management fee

Hedge funds justify their high fees with the fact that they are able to provide alpha. According to Jonas Wikström at WR Capital, investors today, are not willing to pay for beta, on the contrary to alpha. Still, he says, many hedge funds generate a lot of return through beta rather than solely alpha, which the investors usually pay for.

As seen in the appendix, the most common management fee is around 1% of the investment. In addition, hedge funds charge a performance fee that is based on the positive return. Typically, this fee is 20% of the return in excess of a risk free return¹⁵⁰. In 4 out of 28 hedge funds, the performance fee is 20% without taking any consideration to the risk free return. The fees associated with hedge funds are high which has been argued for at many occasions. Lindmark, among others, has been critical towards this in several articles. Nevertheless, it is still an attractive investment and investors are obviously willing to pay the fees. The high performance based fees could also be a way of minimising the principal-agent problem and giving the hedge fund manager an incentive to generate a high return. The dilemma that managers consequently would benefit from a high volatility is generally solved through the “high-watermark”.

The performance fees highly affect the investor’s return and can be seen by comparing the hedge indices; “index adjusted for survivorship bias”¹⁵¹ and “index adjusted for survivorship bias and fees”¹⁵². Taking fees into consideration provides a significant difference in return. However, the return is still greater than the market index return, although the hedge fund index is considered as undervalued.

5.7 Management risk

A consequence of the looser regulations, regarding hedge funds, is that investors have to put a greater deal of trust in the specific fund manager. Even though hedge funds are considered as a low risk investment, in comparison to traditional funds, hedge funds have the possibility to take riskier positions. This places a greater responsibility on the fund manager, and is a possible reason behind the generally high fees as discussed in the previous topic. When asked about the greater freedom of hedge funds, Björn Germer at DLG, expressed that a hedge fund manager,

¹⁵⁰ Usually SSVX90

¹⁵¹ See figure 4-17

¹⁵² See figure 4-18

on an annual basis, never have an excuse for losing money. Moreover, he made clear that there are no excuses, only explanations. Germer also believed that the team, referring to combination of hedge fund managers, is everything and that “too many chefs, spoil the broth”. Subsequently, few managers are to prefer in order to create a successful hedge fund. According to Lindmark, choosing the right manager could be more important than choosing the right fund. The importance of the manager has become obvious during our investigation where several funds, as an example, are named after the manager¹⁵³. The opportunity of meeting the hedge fund managers also gives the impression that they are promoting themselves, in terms of previous work experience and performance, rather than the fund. Lindmark also highlights the importance of a network of potential clients when starting a hedge fund in order to attract capital to the fund.

According to Lindmark, there are investors who consistently invest in new hedge funds. This since recently established funds has a tendency to outperform “older” funds. This is most likely due to the fact that a smaller fund is easier to manoeuvre in combination with the manager’s initial dedication and eagerness, Lindmark continues. This has not been examined thoroughly during our research but 3 out of the 4 top performing funds¹⁵⁴ have been on the market for approximately one year.

A dilemma, previously addressed, is the principal agent problem. A common feature for hedge funds is that the manager often invests a great deal of their own money in the fund. The main reason behind this is obviously the aim towards a mutual interest of generating an attractive return to both investor and manager. Lindmark agrees to the manager’s importance of sharing the objective with the investor and argues that every investor needs to examine this before investing in the fund. In accordance, both Jonas Wikström and Björn Germer invests a great deal of money into their own funds, and to Wikström, it is an obvious requirement.

5.8 Liquidity

Many hedge funds are only open for transactions on a monthly or a quarterly basis. This is, in other words, a serious limitation for those investors who want easy access to their capital. The trend is nevertheless towards an increasing liquidity among hedge funds.

¹⁵³ Brummer & Partners, Peter Edwall Pecunia among others

¹⁵⁴ Based on monthly average return

The high minimum investment can also stand as a high threshold for many investors. This does not concern Björn Germer. According to him, “many seem to believe that earning money from the stock market is a part of the Geneva rights¹⁵⁵”. The fact that there is a high threshold guarantees the hedge funds experienced investors, which are familiar with the concept and purpose of hedge funds, and consequently knows what to expect. However, there is a trend towards a more accessible market and Catella, for example, has a minimum investment of SEK 100, a reasonable amount. There are, however, ways around high minimum fees. Jonas Lindmark mentioned that Avanza¹⁵⁶, among others, has a system where the individual investor, together with other investors, can make smaller investments than what is usually required.

¹⁵⁵ That it is a part of the human rights formulated at the Geneva Convention (authors note)

¹⁵⁶ A Swedish Internet-based stockbroker

CONCLUSIONS

This conclusion will summarize the essence of this thesis and develop the analytical discussion based on the empirical findings. This chapter will further discuss how the conclusions influence the current perception of hedge funds. Finally, suggestions for future research on this subject will be presented.

6.1 Conclusions

The aim of this thesis is to examine the Swedish hedge fund market based on historical performance. This is done in order to evaluate the hedge fund as a strategy of investment.

Hedge funds became popular in the market decline between 2001 and 2003. This was because of their capability of securing capital in a downward period due to their possibility of taking short positions. Hedge funds have managed to maintain their popularity even though the Swedish stock market has generated favourable returns in the last couple of years.

Based on the unmistakable meaning of the word hedge (to protect), the purpose of a hedge fund should be considered as obvious and unambiguous. However, this is far away from the reality. This thesis displays the highly fragmented market and shattered perception of hedge funds. Still, a few common features can be attributed to this phenomenon. The greatest difference between a mutual fund and a hedge fund is the latter's possibility of taking short positions. This fact provides the necessary tools for hedge funds to generate return on overvalued assets and in a declining market, which is difficult for mutual funds. As a consequence, hedge funds are able to provide their investors with both an absolute return and a lower market correlation.

The results of the empirical findings consistently show that the examined hedge funds generated a positive absolute return, irrespectively of the market condition. The "cycle hedge index"¹⁵⁷ even had a slightly higher return during a declining market. The manager-based performance, alpha, was equally high during different market conditions and the Sharpe Ratio had the same tendencies. These facts show that hedge fund performance is not highly affected by the current market condition. However, several hedge funds had a significant correlation with the market, which contradicts the earlier statement. The conclusion is that hedge funds generate return,

¹⁵⁷ See figure 4-11

irrespective of the market condition, by taking a market risk, thus displaying a significant market correlation.

When interpreting these findings from an investor's perspective, it is important to clearly define the purpose of the investment. In portfolio theory, hedge funds primarily serve the purpose of diversifying away unsystematic risk. In theory, this is achieved through the low market correlation that is associated with hedge funds. However, according to this thesis, hedge funds do not show a low correlation to the market and as a result; hedge funds are not an exceptional investment if the purpose is to diversify a portfolio.

This thesis also demonstrates that hedge funds can compare to the market return over a longer period of time. By creating an unweighted index of Swedish hedge funds, which is adjusted for survivorship bias and fees, this thesis clearly demonstrates that Swedish hedge funds have outperformed the Swedish stock market during the last ten years. This finding could change the traditional purpose of hedge funds, diversifying investor's portfolios, for the benefit of an increased expected return, in particular during a downward market.

The results show that hedge funds are a good way of protecting and preserving investors capital. Swedish hedge funds have handled a falling market in a sufficient way and have not been significantly affected by recent market drawbacks. An exception is of course those funds that have been liquidated. This is an exception that weakens our results and unfortunately these funds have not been included in this study. We have consequently made a template adjustment for these exclusions in the total hedge fund index. Unfortunately, this adjustment does not reflect the fluctuation of the excluded funds in a satisfying manner. This thesis is also affected by the lack of more frequent hedge fund data, daily or weekly, which would have increased the reliability of our results.

6.2 Suggestions for future research

During the ten weeks working on this thesis; several interesting aspects of this subject have appeared. Due to the limited time and possibilities, following questions were unable to thoroughly examine.

- It would be interesting to perform a similar study in the future, which would include a greater number of observations and different market conditions. Hedge funds are still a relatively novel occurrence in Sweden, and as shown in this thesis, only 8 hedge funds have experienced an entire stock market cycle. Today, few hedge funds have had the opportunity to prove their capabilities during a declining market. How will the next market depreciation affect the Swedish hedge fund market?
- With an increasing transparency in the market, there might be a chance in the near future to obtain weekly or even daily hedge fund return data. This would increase the validity and reliability to the statistics and consequently, more accurate conclusions could be drawn.
- An aspect that we have had a hard time to investigate is the liquidated hedge funds. It would be interesting to incorporate those funds into the indices that have been created in this thesis. Furthermore, a closer inspection of the liquidated funds may explain what caused their ruin and withdrawal from the market. Are there any patterns or connections between the liquidated funds in terms of correlation, high risk or leverage etcetera.
- Do hedge funds tend to perform better during their initial period after establishment, which some investors believe. In accordance to the belief that fund manager has a remarkably high impact on hedge fund performance, is it then possible to determine any changes in the fund's performance after a change of fund manager? Are the best hedge funds the most expensive; is there a relationship between the fee and the hedge fund performance?
- A comparison of the performance between different hedge strategies would be an interesting study. This thesis has focused on long/short equity, how does this strategy measure up to other strategies like arbitrage for example?

- Fund of funds is a growing phenomenon. Is this a better investment than individual hedge funds and is it possible to obtain an even lower correlation towards the market in a fund of hedge funds?
- With an arbitrage strategy, are there a limited number of arbitrage possibilities on a defined specific market? And consequently, does the increasing number of arbitrage hedge funds lead to a lower return per fund? Do hedge funds improve the efficiency on the market?
- Hedge funds reflect their market belief and alter their market risk by their net-exposure. By studying these figures, many conclusions regarding their different strategies could be drawn. This is probably hard to examine since transparency still is not a key issue on the Swedish hedge fund market, but maybe in the future?

7. REFERENCES

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Lindbom, J., (2005) ”Hedgefonder – absolut avkastning?”
Kandidatuppsats inom NEK/Bachelor thesis in Economics

7.3 Databases

SIX Trust

www.six.se

Nyhetsbyrån Direkt

www.direkt.se

7.4 Electronic References

Affärsvärlden www.affarsvarlden.se

Brummer & Partners www.brummer.se

Dagens Industri www.di.se

Financial Times www.ft.com

Finansinspektionen www.fi.se

HedgeFund.Net	www.hedgefund.net
Investment Company Institute	www.ici.org/funds/abt/faqs_hedge.html
Investopedia	www.investopedia.com
Lexin	lexin2.nada.kth.se
Morningstar	www.morningstar.se
Privata Affärer	www.privataaffarer.se
Scandinavian Information Exchange	www.six.se
Wikipedia	en.wikipedia.org

7.4.1 Hedge fund information

Aktie-Ansvar Graal

www.aktieansvar.se

Bergsgård Petersson Småbolag

www.bpfonder.se/riskinformation.aspx

Banco Hedge

www.banco.se

Bid & Ask Stella Nova

www.bidask.se/info.pdf

Brummer Zenit

www.brummer.se/default.asp

Brummer Manticore

www.brummer.se/default.asp

Brummer Avenir

www.avenir.fi/index.php?changelang=2

Brummer Futuris

www.futuris.se/index.asp

Catella

www.catellakapitalforvaltning.se

DLG

www.dlgfonder.se/faktablad050908.pdf

DnB NOR ARI Primus

www.dnbari.se/Dokumenter/Prospekt.Primus.v4.pdf

Erik Penser Hedge fund

www.pensenfonder.se/hedge.jsp

Gladiator

www.mittkap.se/index.php?ID=3364

Handelsbankens Hedgefond Aktie Europa

www.handelsbanken.se/fonder

Holtback Amplus

www.holtback.com/test2/amplus.html

IPM Global Dimensions Fund

www.nsdcapital.com

Lancelot Merlin

www.lancelot.se

Lannebo Alpha

www.lannebofonder.se/LFTemplates/FundPage_____425.aspx

Lynx

www.lynxhedge.se

Nordea European Equity Hedge Fund

www.nordea.se/sitemod/default/index.aspx?pid=200334

www.nordea.se/sitemod/upload/root/se_org/privat/tjanster/prodreg/fonder/resurs/faktablad/FB-EuropeanEquityHedge.pdf

Nordic Absolute Return Fund

www.nordicfund.com/nordicFund/index.asp

P&N Idea

www.pnfonder.se/Exego.aspx?p_id=318

www.pnfonder.se/UserMedia/Documents/Idea%20fondbestämmelser%20060116_632730190994863282.pdf

P&N Yield

www.pnfonder.se/UserMedia/Documents/Yield%20faktablad%20061016_632966113456728212.pdf

Peter Edwall Pecunia

www.pecunia.se

Radar

www.oncapital.se/?page=fonden

RAM ONE

www.ramrational.com

Sector Hedge

www.sectormanagement.com

Tanglin

www.tanglin.se/fonden.html

www.tanglin.se/Fondbestämmelser.pdf

7.5 Oral References

7.5.1 Main Interviews

Name:	Organisation:	Date:
Germer, Björn	DLG Aktiefond	2006-12-22
Lindmark, Jonas	Morningstar	2006-12-21
Olofsson, Per	Sjunde AP-fonden	2006-12-20
Wikström, Jonas	WR Capital	2006-12-21

7.5.2 Other Contacts

Name:	Organisation:	Date:
Carbonnier, Pierre	Department of Statistics, Lund University	2006-11-21
Johansson, Dennis	RAM ONE	2007-01-03
Klang, Stefan	Catella	2007-01-03
Liljekvist, Kjell	IPM Global Dimensions Fund	2007-01-03
Nordin, Per	Brummer & Partners	2007-01-03
Olsson, Mikael	Nordic Absolute Return Fund	2007-01-03
Omma, Nils-Ola	Peter Edwall Pecunia	2007-01-03
Åkerhielm, Mikael	Radar	2007-01-03

APPENDIX 1

Hedge fund information

Aktie-Ansvar Graal

www.aktieansvar.se

Investment strategy:

Long/short equity hedge and derivatives focusing on the Swedish stock market with the ambition of generating a positive stable absolute return regardless of the market condition.

Risk management:

Considered as lower risk than investing on the stock market but higher risk than the risk free return.

Management fee:

0,75%

Performance fee:

20% on the return exceeding the risk free return (OMRX- TBILL)

Minimum investment:

SEK 100.000

Banco Hedge

www.banco.se

Investment strategy:

Long/short equity hedge and derivatives primarily focusing on the Swedish stock market with the long term ambition of generating a high risk-adjusted return regardless of the market condition.

Risk management:

Historically lower risk than traditional mutual funds. However, periodically high standard deviation, thus recommended investment horizon is 2-3 years

Management fee:

1,1%

Performance fee:

20% on the return exceeding the risk free return (OMRX-TBILL)

Minimum investment:

SEK 4000

Bergsgård Petersson Småbolag

www.bpfonder.se/riskinformation.aspx

Investment strategy:

Long/short equity hedge and derivatives focusing on small and mid cap on the Swedish market. The fund has the ambition of generating an absolute return regardless of the market condition.

Risk management:

Lower risk (standard deviation) than a traditional mutual fund.

Management fee:

1 %

Performance fee:

20% on the return exceeding the risk free return (Riksbankens reporänta)

Minimum investment:

SEK 20. 000, monthly saving: SEK 500

Bid & Ask Stella Nova

www.bidask.se/info.pdf

Investment strategy: Long/short equity and derivatives primarily focusing on the European market with the ambition of generating an absolute return regardless of the market condition.

Risk management: High risk-adjusted return (“väl avvägt risktagande”)

Management fee: 1 %

Performance fee: 20% on the return exceeding the risk free return (SSVX, 30 days)

Minimum investment: First: SEK 100.000, thereafter SEK 25.000

Brummer Avenir

<http://www.avenir.fi/index.php?changelang=2>
Per Nordin, Brummer & Partners

Investment strategy: Long/short equity focusing on the Nordic stock market with the ambition of a high absolute return regardless of the market condition. The fund is designed to provide investors with an attractive means to diversify their portfolios.

Risk management: High risk-adjusted return at a risk level below that of equity markets.

Management fee: 1%

Performance fee: 20% on the return exceeding the risk free return (EURIBOR, 30 days)

Minimum investment: € 100.000

Brummer Futuris

www.futuris.se/index.asp

Investment strategy: Long/short equity hedge and derivatives focusing on the Nordic stock market with the ambition of generating a high risk-adjusted return.

Risk management: Lower market risk than traditional mutual funds.

Management fee: 1 %

Performance fee: 20% on the return exceeding the risk free return (LIBOR, 90 days in €)

Minimum investment: First: € 100.000, thereafter € 10.000

Brummer Manticore

www.brummer.se/default.asp

Investment strategy: Global long/short equity hedge focusing on the global stock market with the ambition of generating a high

Risk management:	risk-adjusted absolute return regardless of the market condition. Higher risk-adjusted return than traditional mutual funds. In a long term perspective the fund should indicate lower risk than the general stock market.
Management fee:	1%
Performance fee:	20% on the return exceeding the risk free return (SSVX, 90 days). High water mark principle.
Minimum investment:	First: SEK 500.000, thereafter: SEK 100.000

Brummer Zenit

www.brummer.se/default.asp

Investment strategy:	Long/short equity hedge and derivatives focusing on the European, primarily the Scandinavian, stock market with the ambition of generating an absolute return regardless of the market condition.
Risk management:	Higher risk-adjusted return than traditional mutual funds
Management fee:	0,75%
Performance fee:	20% on the return exceeding the risk free return (SSVX, 90 days)
Minimum investment:	SEK 500.000

Catella

www.catellakapitalforvaltning.se

Stefan Klang, Catella

Investment strategy:	Long/short equity hedge and derivatives focusing on the Nordic stock market with the ambition of generating an annual stable absolute return of 8-12% during a 5 year period regardless of the market condition.
Risk management:	Lower risk than traditional mutual funds.
Management fee:	1%
Performance fee:	20% on the return exceeding the risk free return (OMRX-TBILL)
Minimum investment:	SEK 100

DLG Aktiefond

www.dlgfonder.se/faktablad050908.pdf

Investment strategy:	Long/short equity hedge focusing on mid cap on the Nordic stock market with the ambition of generating an absolute return to a controlled risk.
Risk management:	Periodically higher standard deviation than traditional mutual funds due to high firm specific risk.
Management fee:	1%

Performance fee: 20% on the return exceeding the average risk free return (SSVX, 90 days).
Minimum investment: First: SEK 250.000, thereafter: SEK 25.000

DnB NOR ARI Primus www.dndari.se/Dokumenter/Prospekt.Primus.v4.pdf

Investment strategy: Long/short equity hedge and derivatives focusing on small and mid cap primarily on the Nordic stock market with the ambition of generating an absolute return regardless of the market condition.

Risk management: High risk-adjusted return.

Management fee: 1%

Performance fee: 20% on the return exceeding the risk free return (STIBOR, 30 days)

Minimum investment: First: SEK 500.000, thereafter: SEK 100.000

Erik Penser Hedge fund www.penserfonder.se/hedge.jsp

Investment strategy: Long/short equity hedge primarily focusing on the Swedish stock market with the ambition of generating an absolute return regardless of the market condition.

Risk management: Lower risk than the general stock market in a long term perspective. Thus, considered as a relative low risk investment. In detail, the fund aim to have half of the risk associated with the stock market.

Management fee: 1%

Performance fee: 20% on the return exceeding the risk free return

Minimum investment: SEK 5000

Gladiator www.mittkap.se/index.php?ID=3364

Investment strategy: Long/short equity hedge and derivatives primarily focusing on the Nordic stock market with the ambition of generating an absolute return regardless of the market condition.

Risk management: Periodically higher standard deviation than traditional mutual funds. However, lower or equal standard deviation than the Swedish stock market on a annual basis.

Management fee: 1%

Performance fee: 20% on the return exceeding the average risk free return (SSVX, 90 days)

Minimum investment: First: SEK 500.000, thereafter: SEK 100.000

Handelsbankens Hedgefond Aktie Europa

	www.handelsbanken.se/fonder
Investment strategy:	Long/short equity hedge and derivatives focusing on the European stock market with the long term ambition of generating a high risk-adjusted return regardless of the market condition.
Risk management:	Lower market risk than traditional mutual funds.
Management fee:	1%
Performance fee:	Maximum 20% on the return exceeding the risk free return (STIBOR, 30 days)
Minimum investment:	First: SEK 50.000, thereafter: SEK 10.000

Holtback Amplus

www.holtback.com/test2/amplus.html

Investment strategy:	Long/short equity hedge and derivatives primarily focusing on the Nordic stock market with the ambition of generating a high risk-adjusted absolute return regardless of the market condition.
Risk management:	High risk-adjusted return
Management fee:	1%
Performance fee:	20% on the return exceeding the risk free return
Minimum investment:	First: SEK 500.000, thereafter SEK 100.000

IPM Global Dimensions Fund

www.nsdcapital.com

	Kjell Liljekvist, IPM Global Dimensions Fund
Investment strategy:	Long/short equity hedge focusing on the stock market with the ambition of generating an absolute return regardless of the market condition.
Risk management:	Higher risk-adjusted return than the stock market in a long term perspective
Management fee:	1%
Performance fee:	20% on the return exceeding the risk free return
Minimum investment:	SEK 500.000

Lancelot Merlin

www.lancelot.se

Investment strategy:	Long/short equity hedge and derivatives focusing on the European, in particular the Nordic, stock market with the ambition of generating an absolute return regardless of the market condition. Moreover, the fund aims to diversify the portfolio by minimising the standard deviation.
Risk management:	Aim towards lowering the standard deviation
Management fee:	1%

Performance fee: 20% on the return exceeding the risk free return (SSVX, 90 days). High water mark principle.
Minimum investment: SEK 1 000.000

Lannebo Alpha

www.lannebofonder.se/LFTemplates/
FundPage____425.aspx
Investment strategy: Long/short equity hedge and derivatives primarily focusing on the Nordic stock market with the ambition of generating an absolute return regardless of the market condition
Risk management: Lower risk than the stock market in a long term perspective
Management fee: 1%
Performance fee: 20% on the return exceeding the risk free return (STIBOR, 30 day)
Minimum investment: SEK 5.000 or SEK 500 per month

Lynx

www.lynxhedge.se
Investment strategy: Long/short equity hedge and derivatives on the stock market with the ambition of generating a high risk-adjusted return regardless of the market condition.
Risk management: Lower risk than traditional mutual funds
Management fee: 1%
Performance fee: 20% on the return exceeding the risk free return (SSVX, 6 months)
Minimum investment: First: SEK 500.000, thereafter: SEK 100.000

Nordea European Equity Hedge Fund

www.nordea.se/sitemod/default/index.aspx?pid=200334
www.nordea.se/sitemod/upload/root/se_org/privat/tjanster/prodreg/fonder/resurs/faktablad/FB-EuropeanEquityHedge.pdf
Investment strategy: Long/short equity hedge and derivatives focusing on the European stock market with the ambition of generating a high risk-adjusted return regardless of the market condition.
Risk management: Solely considered as a risky investment, but utilized in a right way (eg. as a complement in a portfolio) can increase the chances of a higher risk-adjusted return. The fund has low market risk and is considered as lower risk than traditional mutual funds. Therefore the performance is mainly determined by the skills of the fund manager.

Management fee: 1%
Performance fee: 20% on the return exceeding the risk free return (STIBOR, 30 days)
Minimum investment: SEK 100

Nordic Absolute Return Fund

www.nordicfund.com/nordicFund/index.asp
Mikael Olsson, Nordic Absolute Return Fund
Investment strategy: Long/short equity hedge and derivatives focusing on the European, in particular the Nordic, stock market with the ambition of generating an absolute return. Mainly focusing on long positions, thus the return of the fund is expected to have a positive correlation with the stock market
Risk management: Positive return to a low risk
Management fee: 1%
Performance fee: 20% on the return exceeding the risk free return
Minimum investment: € 125.000 or through Avanza: SEK 10.000

P&N Idea

www.pnfonder.se/Exego.aspx?p_id=318
www.pnfonder.se/UserMedia/Documents/Idea%20fondbestämmelser%20060116_632730190994863282.pdf
Investment strategy: Long/short equity hedge and derivatives primarily focusing on the Nordic and European stock market with the ambition, in a long term perspective, of generating an annual high risk-adjusted return (10-20%).
Risk management: Same risk (standard deviation) as the stock market in a long term perspective. However, the standard deviation can periodically vary, thus considered as relative high risk in a short term perspective.
Management fee: 0,2%
Performance fee: 20% on the total return. High water mark principle.
Minimum investment: First: SEK 20.000, thereafter: SEK 10.000

P&N Yield

www.pnfonder.se/UserMedia/Documents/Yield%20faktablad%20061016_632966113456728212.pdf
Investment strategy: Long/short equity hedge and derivatives focusing on the Swedish stock market with the ambition of generating an absolute return regardless of the market condition.
Risk management: In a long term perspective considered as lower risk than the majority of hedge funds and traditional mutual funds.
Management fee: 1%

Performance fee: 20% on the return exceeding the risk free return (SSVX, 30 days)
Minimum investment: First: SEK 500.000, thereafter SEK 100.000

Peter Edwall Pecunia

www.pecunia.se
Nils-Ola Omma, Peter Edwall Pecunia
Investment strategy: Long/short equity hedge and derivatives focusing on the Nordic stock market with the ambition of generating an absolute return to a controlled risk regardless of the market condition. Investment horizon: 3-5 year.
Risk management: Higher risk profile than traditional mutual funds
Management fee: 0,8%
Performance fee: 15%. High water mark principle
Minimum investment: SEK 2 000.000

Radar

www.oncapital.se/?page=fonden
Mikael Åkerhielm, Radar
Investment strategy: Long/short equity hedge focusing on the Nordic stock market with the ambition of generating an absolute return.
Risk management: In a long term perspective, a risk profile of being more neutral to the market than most other traditional mutual funds
Management fee: 1%
Performance fee: 20% on the return exceeding the risk free return (SSVX, 90 days)
Minimum investment: SEK 500.000

RAM ONE

www.ramrational.com
Dennis Johansson, RAM ONE
Investment strategy: Global long/short equity hedge and derivatives focusing on the global stock market with the ambition of generating an absolute return regardless of the market condition.
Risk management: High risk-adjusted return. Ambition of having a risk in accordance with the stock market.
Management fee: 1%
Performance fee: 20% on the positive absolute return. High watermark principle.
Minimum investment: First: SEK: 5 000.000, thereafter SEK: 1 000.000

Sector Hedge

www.sectormanagement.com

Investment strategy: Long/short equity hedge and derivatives focusing on the Nordic stock market. The ambition of a 3 years investment horizon is to generate an annual average return of 8-12 % above the risk free return, regardless of the market condition.

Risk management: High risk-adjusted return

Management fee: 1,5%

Performance fee: 20% on the return exceeding the average risk free return (SSVX, 90 days)

Minimum investment: SEK 25.000

Tanglin

www.tanglin.se/fonden.html
www.tanglin.se/Fondbestämmelser.pdf

Investment strategy: Global long/short equity hedge and derivatives focusing on the global stock market with the ambition of generating a high risk-adjusted absolute return regardless of the market condition.

Risk management: Lower risk than in the stock market.

Management fee: 1%

Performance fee: 20% on the abnormal return

Minimum investment: SEK 500.000

APPENDIX 2

Date	SIX-RX	SSVX90	Brummer Zenit	Banco Hedge	Brummer Futuris	Lynx	Tanglin	Lancelot Merlin	Brummer Avenir	Brummer Manticore
96-07-31	-4,14%	0,50%	1,33%							
96-08-30	5,52%	0,54%	3,21%							
96-09-30	4,35%	0,45%	9,11%							
96-10-31	2,25%	0,44%	4,84%							
96-11-29	8,12%	0,45%	12,57%							
96-12-30	3,74%	0,46%	5,32%							
97-01-31	7,05%	0,24%	10,84%							
97-02-28	4,56%	0,32%	0,38%							
97-03-27	3,76%	0,33%	0,95%							
97-04-30	-2,23%	0,37%	-1,73%							
97-05-30	6,45%	0,33%	3,83%							
97-06-30	6,69%	0,34%	1,21%							
97-07-31	5,65%	0,35%	3,62%							
97-08-29	-4,82%	0,34%	-0,50%							
97-09-30	6,77%	0,34%	5,26%							
97-10-31	-11,22%	0,37%	4,75%							
97-11-28	4,92%	0,31%	0,02%							
97-12-30	-0,82%	0,42%	6,42%							
98-01-30	3,48%	0,39%	8,29%	2,75%						
98-02-27	7,57%	0,35%	9,66%	-0,54%						
98-03-31	6,68%	0,35%	11,88%	3,84%						
98-04-30	2,69%	0,41%	9,25%	1,25%						
98-05-29	4,02%	0,40%	7,25%	0,47%						
98-06-30	0,92%	0,38%	5,96%	1,94%						
98-07-31	-0,45%	0,36%	10,94%	-2,04%						
98-08-31	-14,43%	0,31%	0,12%	-1,64%						
98-09-30	-10,31%	0,36%	-8,68%	0,66%						
98-10-30	4,42%	0,43%	6,52%	2,86%						
98-11-30	12,30%	0,38%	2,84%	-0,26%						
98-12-30	-1,40%	0,37%	4,09%	1,58%						
99-01-29	2,40%	0,30%	6,57%	3,96%						
99-02-26	1,47%	0,27%	-1,24%	1,63%						
99-03-31	2,64%	0,36%	-9,84%	4,46%						
99-04-30	6,19%	0,24%	-6,31%	5,37%						
99-05-31	-0,03%	0,19%	3,28%	1,90%						
99-06-30	5,52%	0,25%	1,90%	-1,16%						
99-07-30	-0,62%	0,25%	1,38%	-0,64%						
99-08-31	1,91%	0,24%	0,17%	-0,38%						
99-09-30	-0,12%	0,24%	3,78%	0,98%						
99-10-29	8,09%	0,26%	1,45%	2,52%	1,36%					
99-11-30	11,80%	0,25%	6,69%	0,53%	16,88%					
99-12-30	16,23%	0,30%	3,62%	1,27%	27,59%					
00-01-31	2,22%	0,25%	13,79%	0,60%	7,90%					
00-02-29	15,78%	0,26%	4,04%	0,76%	7,81%					
00-03-31	-3,78%	0,39%	3,00%	4,74%	2,74%					
00-04-28	1,87%	0,32%	-2,50%	2,43%	-3,95%					
00-05-31	-2,78%	0,39%	0,58%	0,53%	-3,30%	3,35%				
00-06-30	-4,71%	0,24%	-5,91%	-0,28%	1,65%	-2,25%				
00-07-31	0,86%	0,30%	0,79%	1,44%	-0,99%	0,88%				
00-08-31	1,85%	0,40%	2,63%	0,39%	5,64%	-4,29%	1,27%			
00-09-29	-8,24%	0,29%	0,01%	-0,41%	-0,55%	-1,34%	0,00%			
00-10-31	-3,20%	0,40%	4,86%	0,35%	0,12%	3,09%	5,00%	3,91%		
00-11-30	-6,92%	0,33%	2,75%	2,46%	-3,69%	5,69%	4,01%	2,18%		
00-12-29	-2,27%	0,34%	-0,48%	1,59%	-2,72%	7,54%	4,15%	1,48%	-0,89%	
01-01-31	5,48%	0,35%	-2,17%	3,29%	0,65%	2,06%	5,19%	2,83%	2,47%	0,88%
01-02-28	-10,79%	0,32%	7,55%	-0,50%	4,75%	2,69%	0,34%	0,83%	0,57%	1,57%
01-03-30	-12,95%	0,38%	5,52%	1,25%	4,88%	7,09%	3,73%	6,24%	1,70%	1,92%
01-04-30	12,23%	0,30%	-4,35%	4,52%	-1,28%	-4,66%	2,76%	-0,84%	2,14%	-1,54%
01-05-31	0,79%	0,37%	1,28%	-1,53%	2,85%	-0,49%	-0,29%	1,46%	0,47%	1,11%
01-06-29	-5,38%	0,27%	2,11%	-1,77%	4,23%	-2,68%	1,04%	3,84%	2,21%	-0,35%

Hammarbäck & Kastensson – Swedish Hedge Funds

Date	SIX-RX	SSVX90	Brummer Zenit	Banco Hedge	Brummer Futuris	Lynx	Tanglin	Lancelot Merlin	Brummer Avenir	Brummer Manticore
01-08-31	-7,72%	0,39%	3,99%	-0,78%	2,30%	8,02%	1,49%	0,35%	0,62%	1,42%
01-09-28	-11,59%	0,45%	9,21%	0,96%	4,32%	6,81%	1,40%	6,47%	0,87%	4,40%
01-10-31	6,90%	0,33%	-3,91%	2,21%	-4,10%	0,25%	5,54%	-2,61%	1,49%	-3,08%
01-11-30	11,79%	0,32%	-4,64%	1,14%	2,96%	-6,35%	4,85%	-0,70%	0,92%	-1,63%
01-12-28	1,66%	0,32%	-0,28%	0,82%	1,83%	2,36%	3,47%	-1,77%	0,38%	2,88%
02-01-31	-5,93%	0,30%	-1,02%	-3,45%	1,75%	0,40%	-2,81%	-2,41%	0,65%	-2,44%
02-02-28	0,70%	0,28%	0,83%	1,34%	1,94%	-7,30%	0,96%	-0,53%	0,10%	-0,77%
02-03-28	2,73%	0,31%	-4,74%	3,35%	0,80%	2,70%	0,91%	-0,84%	1,88%	3,46%
02-04-30	-7,71%	0,32%	4,65%	-2,79%	4,80%	1,60%	-1,18%	0,73%	1,68%	-5,52%
02-05-31	-5,98%	0,39%	1,66%	-2,40%	4,09%	5,65%	0,35%	0,52%	0,41%	-1,93%
02-06-28	-7,50%	0,34%	4,22%	-0,75%	2,83%	10,75%	0,21%	1,49%	1,59%	1,54%
02-07-31	-10,95%	0,38%	8,08%	0,11%	0,34%	5,27%	-0,39%	3,40%	-1,34%	-0,76%
02-08-30	-2,67%	0,39%	0,97%	0,04%	-0,49%	1,48%	2,16%	2,35%	1,46%	-1,31%
02-09-30	-15,03%	0,35%	6,06%	-0,16%	4,37%	3,35%	0,34%	3,58%	-0,12%	0,84%
02-10-31	12,89%	0,37%	-1,83%	0,40%	-0,32%	-4,56%	1,19%	1,03%	0,34%	-2,47%
02-11-29	12,82%	0,38%	-2,12%	0,68%	2,17%	-2,85%	1,22%	-1,33%	1,45%	-1,15%
02-12-30	-12,50%	0,37%	1,51%	-2,04%	-1,68%	4,73%	-0,65%	2,98%	0,22%	-1,05%
03-01-31	-3,67%	0,29%	-0,17%	-0,58%	0,62%	2,99%	0,19%	3,08%	-0,65%	0,63%
03-02-28	-1,58%	0,31%	0,82%	-0,32%	0,43%	3,99%	0,21%	0,29%	-0,74%	0,64%
03-03-31	-2,18%	0,30%	0,03%	0,33%	2,44%	-4,52%	2,46%	0,54%	0,03%	-0,42%
03-04-30	14,92%	0,30%	-4,14%	2,19%	-2,80%	4,18%	0,27%	-6,91%	-0,08%	-1,31%
03-05-30	-0,18%	0,35%	-1,79%	0,26%	0,22%	10,51%	2,45%	2,26%	0,63%	0,59%
03-06-30	4,21%	0,29%	1,22%	0,31%	1,18%	3,25%	0,79%	-1,14%	0,22%	2,15%
03-07-31	7,00%	0,26%	-1,38%	-2,03%	1,12%	-5,32%	0,87%	0,03%	0,45%	0,51%
03-08-29	3,62%	0,19%	0,02%	-0,47%	2,03%	0,41%	0,44%	-2,86%	1,32%	2,85%
03-09-30	-3,21%	0,26%	1,30%	0,40%	0,38%	6,45%	0,70%	0,55%	0,12%	1,63%
03-10-31	8,92%	0,24%	-0,81%	1,02%	1,34%	4,29%	0,65%	-1,32%	1,41%	1,61%
03-11-28	0,42%	0,19%	0,92%	-1,39%	0,35%	1,14%	0,18%	0,13%	0,47%	0,27%
03-12-30	3,10%	0,26%	1,26%	-0,21%	2,28%	3,69%	0,81%	-1,41%	-0,11%	1,40%
04-01-30	5,84%	0,28%	1,65%	0,27%	2,77%	1,19%	2,49%	-0,14%	1,60%	2,67%
04-02-27	3,77%	0,22%	-1,65%	-2,07%	-0,66%	4,69%	-2,80%	1,34%	0,65%	1,90%
04-03-31	-1,16%	0,28%	-0,28%	0,16%	-3,02%	-1,69%	2,76%	-1,10%	-0,43%	-0,38%
04-04-30	1,30%	0,19%	-2,02%	1,02%	0,82%	-2,05%	2,49%	-0,23%	-0,20%	0,22%
04-05-28	-1,19%	0,19%	-0,89%	-0,47%	-1,44%	0,83%	2,32%	-1,61%	0,46%	-2,12%
04-06-30	3,38%	0,17%	1,02%	1,27%	3,08%	-2,20%	1,06%	-0,35%	0,56%	-0,59%
04-07-30	-1,85%	0,18%	-0,55%	-0,46%	-1,17%	-3,35%	1,11%	0,20%	-0,60%	-0,79%
04-08-31	-0,52%	0,16%	0,19%	-1,56%	1,00%	2,12%	1,22%	0,91%	0,31%	-0,31%
04-09-30	3,27%	0,19%	-1,12%	-0,76%	2,07%	-0,60%	0,79%	-0,14%	-0,54%	-1,03%
04-10-29	-0,01%	0,21%	-0,64%	-1,04%	-3,50%	7,32%	-0,67%	0,52%	-1,12%	0,92%
04-11-30	5,93%	0,21%	1,05%	1,33%	4,70%	6,45%	1,56%	0,44%	1,64%	-0,18%
04-12-30	0,66%	0,19%	1,79%	0,86%	2,04%	1,09%	1,43%	-0,19%	2,44%	0,49%
05-01-31	0,70%	0,17%	1,82%	-0,49%	1,45%	-4,18%	-1,64%	0,02%	3,34%	1,46%
05-02-28	4,67%	0,16%	2,15%	0,31%	0,50%	1,61%	0,45%	-0,24%	2,93%	1,63%
05-03-31	0,35%	0,18%	-1,81%	0,19%	0,16%	-2,10%	-0,44%	-1,14%	0,11%	0,42%
05-04-29	-1,04%	0,17%	0,42%	0,76%	3,22%	-1,20%	-0,34%	-0,84%	-0,64%	-0,80%
05-05-31	5,57%	0,18%	-1,68%	0,21%	-2,47%	5,60%	-0,80%	0,76%	2,47%	0,75%
05-06-30	4,14%	0,24%	4,10%	1,19%	1,30%	3,50%	-1,13%	0,35%	2,39%	0,50%
05-07-29	5,00%	0,13%	3,64%	2,05%	1,36%	-1,35%	1,80%	1,36%	3,18%	2,53%
05-08-31	-1,13%	0,12%	-0,37%	-1,23%	1,03%	-1,60%	0,52%	0,57%	1,53%	-0,09%
05-09-30	5,67%	0,13%	4,33%	1,33%	4,01%	1,53%	1,38%	0,73%	3,87%	2,13%
05-10-31	-1,97%	0,13%	-4,64%	-0,37%	-1,99%	1,96%	0,52%	-1,81%	-6,11%	-1,30%
05-11-30	4,01%	0,13%	3,03%	1,61%	5,75%	4,48%	0,34%	2,24%	1,72%	1,12%
05-12-30	5,93%	0,10%	1,85%	3,55%	-1,04%	-1,44%	0,79%	1,82%	2,64%	0,63%
06-01-31	1,44%	0,13%	2,13%	0,62%	-3,34%	0,16%	0,87%	3,84%	3,03%	1,85%
06-02-28	3,61%	0,15%	3,35%	1,80%	1,31%	-0,13%	0,12%	4,86%	0,45%	0,70%
06-03-31	6,90%	0,16%	1,66%	3,08%	0,74%	3,44%	0,60%	4,25%	1,52%	1,43%
06-04-28	0,93%	0,17%	2,62%	0,88%	-1,54%	3,24%	1,06%	-0,35%	0,87%	0,63%
06-05-31	-7,95%	0,21%	-1,31%	-1,90%	-1,10%	1,92%	-0,81%	-4,93%	-3,74%	0,86%
06-06-30	0,92%	0,19%	-0,60%	0,00%	-1,79%	-2,07%	0,73%	-0,13%	0,20%	-2,91%
06-07-31	-1,33%	0,20%	0,53%	-0,04%	1,25%	-4,60%	0,54%	-2,83%	0,95%	-1,08%
06-08-31	4,40%	0,20%	0,35%	0,75%	-0,23%	3,97%	0,08%	1,17%	0,79%	-3,48%
06-09-29	5,21%	0,20%	2,20%	1,91%	-1,19%	-3,15%	0,81%	0,69%	0,33%	1,59%
06-10-31	4,53%	0,22%	0,44%	0,35%	2,42%	-1,04%	-0,10%	-1,60%	2,02%	1,04%

Hammarbäck & Kastensson – Swedish Hedge Funds

Date	SHBHedge Akt. E.	P. Edwall Pecunia	Nordea E. Equity H.F	Erik Penser Hedgefond	Aktie-ansv. Graal	Sector Hedge	RAM ONE	P&N Yield	DnB NOR ARIPrimus	Nordic Absolute
01-08-31										
01-09-28										
01-10-31										
01-11-30	-0,37%									
01-12-28	-0,12%									
02-01-31	0,94%									
02-02-28	0,05%	2,38%								
02-03-28	-0,25%	4,63%	2,25%							
02-04-30	-0,68%	5,52%	2,12%							
02-05-31	0,43%	1,48%	-0,46%	0,63%						
02-06-28	2,55%	-1,34%	-0,67%	-1,59%						
02-07-31	-0,44%	1,37%	1,63%	-0,90%	3,70%					
02-08-30	0,36%	3,71%	1,71%	0,66%	2,79%					
02-09-30	-0,09%	-11,82%	1,12%	-3,36%	1,33%					
02-10-31	0,75%	10,62%	-0,44%	2,77%	2,53%	7,76%				
02-11-29	0,71%	5,38%	0,27%	7,57%	2,37%	9,06%	1,71%			
02-12-30	-1,37%	2,42%	0,40%	-5,16%	-0,71%	-7,93%	-2,13%	0,58%		
03-01-31	0,17%	4,75%	0,61%	0,70%	-0,50%	1,50%	0,93%	0,27%		
03-02-28	-0,68%	-3,15%	-0,76%	0,26%	1,90%	1,03%	-1,44%	0,61%	0,62%	
03-03-31	-2,40%	-1,53%	1,88%	1,42%	0,24%	-1,07%	0,71%	0,94%	0,01%	
03-04-30	-0,33%	5,21%	1,02%	4,29%	1,67%	0,06%	4,40%	1,96%	1,28%	0,45%
03-05-30	-0,72%	3,26%	0,89%	1,26%	0,15%	2,45%	-2,35%	1,16%	0,43%	-0,31%
03-06-30	-0,09%	4,81%	1,36%	1,74%	1,26%	1,72%	1,16%	1,46%	0,27%	-1,09%
03-07-31	0,25%	2,82%	-0,14%	1,03%	1,08%	-0,11%	-1,66%	1,22%	0,17%	-0,91%
03-08-29	0,60%	0,06%	0,65%	1,23%	0,91%	1,04%	-4,26%	0,78%	0,58%	0,40%
03-09-30	-0,70%	7,48%	-0,06%	0,17%	0,29%	2,06%	-0,18%	0,69%	0,35%	-0,81%
03-10-31	0,52%	1,01%	-0,62%	0,36%	1,24%	2,34%	-4,74%	1,49%	0,62%	1,05%
03-11-28	-0,22%	2,42%	1,00%	0,53%	1,62%	3,06%	0,73%	0,82%	0,97%	0,72%
03-12-30	0,58%	4,53%	0,39%	1,00%	0,77%	2,42%	-1,61%	0,60%	0,74%	1,77%
04-01-30	1,17%	3,50%	0,52%	0,50%	0,22%	3,98%	0,74%	0,86%	1,44%	-1,03%
04-02-27	-0,13%	1,09%	0,41%	-0,30%	0,06%	1,04%	1,58%	0,77%	0,35%	-0,59%
04-03-31	-0,30%	0,14%	0,63%	1,71%	0,14%	0,28%	-0,18%	0,42%	0,50%	-0,32%
04-04-30	0,02%	0,45%	0,02%	-1,47%	1,24%	-1,68%	3,32%	0,72%	-2,54%	2,78%
04-05-28	0,14%	-1,31%	0,78%	-0,33%	0,11%	0,52%	-1,22%	0,61%	-2,33%	-1,93%
04-06-30	0,55%	1,35%	0,70%	1,01%	0,77%	0,42%	1,34%	1,27%	0,00%	3,07%
04-07-30	-0,55%	1,68%	0,48%	0,73%	0,13%	-2,11%	-0,63%	0,32%	-0,05%	-2,74%
04-08-31	-0,46%	2,48%	0,61%	0,23%	0,05%	-1,10%	-0,85%	0,18%	0,72%	-0,56%
04-09-30	0,19%	3,70%	1,14%	0,06%	0,43%	4,17%	1,01%	0,28%	0,78%	1,43%
04-10-29	0,41%	0,62%	-0,33%	-0,16%	0,36%	-2,24%	0,99%	0,35%	-0,34%	-3,91%
04-11-30	0,93%	2,79%	1,04%	2,06%	1,48%	5,39%	1,62%	0,70%	1,97%	4,72%
04-12-30	0,63%	4,38%	0,60%	1,16%	0,88%	0,54%	0,36%	0,55%	-0,44%	1,21%
05-01-31	0,76%	4,15%	0,18%	0,76%	0,50%	0,85%	1,48%	0,38%	0,49%	-0,72%
05-02-28	0,92%	-1,25%	0,66%	1,97%	1,23%	2,99%	2,78%	0,56%	-0,20%	5,41%
05-03-31	-0,33%	0,67%	-1,13%	1,26%	0,29%	1,43%	-0,41%	0,48%	-0,19%	-1,13%
05-04-29	0,10%	-1,54%	1,55%	-0,27%	-0,27%	-4,27%	0,18%	-0,13%	1,77%	-0,87%
05-05-31	0,92%	-0,75%	0,94%	2,16%	0,66%	1,83%	0,91%	0,57%	-1,66%	4,65%
05-06-30	0,72%	4,68%	1,61%	2,72%	2,62%	4,86%	0,75%	0,55%	1,83%	0,23%
05-07-29	0,58%	0,76%	0,51%	0,84%	1,01%	4,51%	3,22%	0,54%	0,38%	0,43%
05-08-31	0,08%	3,14%	0,52%	1,81%	0,07%	1,20%	-0,34%	0,00%	0,64%	-0,38%
05-09-30	0,07%	-2,49%	0,34%	3,37%	0,75%	7,07%	1,39%	0,40%	2,88%	4,59%
05-10-31	-1,79%	2,72%	-1,18%	-0,66%	0,12%	-2,51%	-0,84%	0,48%	-1,57%	-1,88%
05-11-30	0,30%	3,16%	0,26%	1,36%	0,71%	3,22%	2,18%	0,67%	1,33%	4,27%
05-12-30	0,83%	4,22%	0,75%	0,91%	0,77%	4,29%	2,67%	0,87%	2,17%	7,13%
06-01-31	1,64%	0,35%	1,84%	4,23%	0,39%	0,07%	1,63%	0,37%	2,88%	0,05%
06-02-28	0,42%	-4,98%	0,95%	0,28%	0,77%	-2,56%	1,53%	0,88%	2,31%	1,47%
06-03-31	-0,01%	1,36%	0,59%	3,19%	1,23%	5,41%	2,78%	1,09%	0,86%	4,37%
06-04-28	1,12%	-2,80%	0,41%	2,09%	0,48%	-1,81%	0,52%	0,32%	1,05%	1,57%
06-05-31	-3,30%	3,81%	-1,65%	-3,88%	-0,54%	-4,67%	-2,99%	-1,02%	-2,64%	-0,37%
06-06-30	0,51%	-0,55%	0,00%	0,51%	0,19%	0,47%	0,25%	0,00%	0,93%	1,84%
06-07-31	0,04%	1,35%	-0,06%	0,34%	-0,37%	-0,87%	-1,00%	0,15%	-1,51%	-0,13%
06-08-31	0,26%	-0,72%	0,00%	-0,03%	0,20%	-1,25%	1,82%	0,54%	-0,70%	3,17%
06-09-29	0,56%	-2,73%	0,24%	-0,10%	1,12%	2,30%	1,42%	0,88%	1,15%	3,50%
06-10-31	0,10%	-5,65%	0,39%	-0,29%	0,92%	-1,89%	1,66%	0,25%	0,65%	0,70%

Hammarbäck & Kastensson – Swedish Hedge Funds

Date	IPM Global Dimensions	Stella Nova	Catella Hedgefond	Holtback Amplus	Gladiator	DLG Aktiefond	Radar	Lannebo Alpha	P&N Idea	Bergsgård Pettersson
01-08-31										
01-09-28										
01-10-31										
01-11-30										
01-12-28										
02-01-31										
02-02-28										
02-03-28										
02-04-30										
02-05-31										
02-06-28										
02-07-31										
02-08-30										
02-09-30										
02-10-31										
02-11-29										
02-12-30										
03-01-31										
03-02-28										
03-03-31										
03-04-30										
03-05-30	0,54%									
03-06-30	0,35%									
03-07-31	0,11%									
03-08-29	-0,97%									
03-09-30	-3,08%	0,68%								
03-10-31	0,91%	0,89%								
03-11-28	0,46%	0,26%								
03-12-30	-0,90%	2,87%								
04-01-30	1,48%	2,48%								
04-02-27	1,36%	0,33%								
04-03-31	-1,28%	1,12%	2,44%							
04-04-30	0,14%	0,86%	0,25%							
04-05-28	-0,92%	0,80%	0,46%	0,20%						
04-06-30	0,59%	0,50%	1,57%	0,20%						
04-07-30	-0,65%	0,26%	-0,66%	-0,60%						
04-08-31	0,43%	0,54%	0,09%	0,60%						
04-09-30	-0,06%	0,93%	1,27%	3,29%						
04-10-29	0,07%	-0,38%	0,45%	-0,39%						
04-11-30	-0,14%	0,84%	1,63%	3,10%						
04-12-30	-0,11%	1,49%	0,64%	2,16%						
05-01-31	-0,57%	-0,42%	0,83%	0,17%						
05-02-28	1,39%	0,88%	1,73%	2,05%						
05-03-31	-0,20%	2,00%	0,60%	1,44%						
05-04-29	-1,07%	1,46%	0,08%	1,19%						
05-05-31	2,96%	0,15%	1,87%	2,47%						
05-06-30	0,11%	0,82%	2,09%	1,69%						
05-07-29	1,92%	0,33%	1,42%	2,14%						
05-08-31	-1,70%	0,51%	0,08%	-1,56%	0,21%					
05-09-30	0,61%	0,68%	1,25%	2,83%	2,33%					
05-10-31	-1,44%	1,25%	-0,18%	1,03%	-0,16%	0,04%	1,05%			
05-11-30	2,32%	0,55%	1,17%	2,66%	4,77%	2,95%	2,05%			
05-12-30	0,29%	-0,15%	1,78%	2,12%	5,42%	10,66%	3,82%			
06-01-31	0,50%	-0,92%	1,00%	0,84%	0,07%	5,75%	3,48%	1,60%	1,81%	1,33%
06-02-28	0,27%	0,61%	1,29%	2,15%	3,15%	6,13%	2,67%	1,60%	2,90%	3,59%
06-03-31	1,30%	0,38%	1,67%	1,92%	6,18%	14,71%	4,68%	1,30%	3,15%	11,95%
06-04-28	-0,19%	1,17%	0,83%	-0,40%	0,03%	5,73%	2,86%	0,30%	0,59%	1,55%
06-05-31	-3,23%	0,68%	-1,94%	-5,07%	-5,07%	-13,50%	2,24%	-2,00%	-6,37%	0,57%
06-06-30	0,18%	-0,09%	-0,34%	-1,37%	0,51%	3,60%	3,23%	1,20%	0,32%	-3,73%
06-07-31	-0,39%	1,10%	-0,28%	-2,09%	-0,05%	-0,60%	2,11%	0,50%	-0,55%	-0,27%
06-08-31	0,53%	0,36%	0,72%	1,34%	4,50%	4,01%	2,31%	-0,30%	1,52%	-2,33%
06-09-29	1,50%	0,81%	0,60%	2,06%	3,28%	5,05%	1,02%	1,70%	2,86%	1,01%
06-10-31	3,73%	0,50%	1,47%	-0,60%	-1,63%	3,83%	3,53%	0,10%	0,00%	-1,21%

