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Investment Strategies

- Can accumulated stock recommendations provide positive abnormal returns?

Bachelor Thesis within Business Administration

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Abstract

Purpose The purpose of this thesis is; “To find out whether a strategy based on accumulated stock recommendations are able to outperform mutual funds and/or index funds with similar holdings over time”.

Background During the past 30 years the interest for the financial market has been ever increasing. With the increased interest for the financial market, also an increased interest for the different investment alternatives have developed, thus also the amount of various financial products. Further there has been a discussion whether the different investment products actually add value to the investors.

Method To be able to reach our purpose we have constructed a portfolio containing stocks based on recommendations. We have also come up with a method in order to decide the weights of the individual stocks in our portfolio. Further, we have used existing theories in order to estimate the return and the standard deviation. We have also benchmarked our portfolio against popular funds on the market.

Conclusion We have seen that our portfolio during the six years running have performed better than the existing funds and also resulted in a lower standard deviation i.e. risk. Thus the results are applicable on our specific data, more research is needed in order to make any statements of statistical significance.

Sammanfattning

- Syfte** Syftet med denna uppsats är; ”Att undersöka om det är möjligt att en strategi baserad på ackumulerade aktierekommendationer presterar bättre än fonder/indexfonder med liknande innehav över tid”.
- Bakgrund** Under de senaste 30 åren har intresset för finansmarknaden ständigt ökat. Med det har också intresset för de olika investeringsalternativen accelererat. Vidare har det varit en diskussion om alla produkter på marknaden ger mervärde till sina investerare.
- Metod** För att kunna uppnå vårt syfte har vi konstruerat en portfölj baserad på aktierekommendationer. Vidare har vi utvecklat en metod för att bestämma vilka vikter aktierna i vår portfölj ska ha. Dessutom har vi använt befintliga teorier gällande avkastning och standardavvikelse. Vidare har vi jämfört vårt alternativ med befintliga produkter på marknaden.
- Slutsats** Vi har observerat att under de sex år som vi har handhaft vår portfölj så har vi fått en högre avkastning än liknande produkter och en lägre standardavvikelse. Dock är resultatet begränsat till vår specifika data under vår tidshorisont. Fortsatta studier är nödvändiga för att kunna statistiskt säkerställa metoden.

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1 Introduction

1.1 Background

“Don’t work for money, let money work for you.” which is a famous quote by Robert T. Kiyosaki from his book *rich dad poor dad* (2002). This quote very much captures the essence of the problem we are about to shed some light on. During the past thirty years the public interest in finance and economics has grown rapidly, especially the interest in the security market. During the seventies in Sweden, the yearly turnover from the Stockholm Stock Exchange was almost entirely from institutional owners. Thus, during the eighties something happened. The number of private person who where owning stock increased, from 1982 until 2009 the increase has been a staggering 259 per cent (SCB, 2009a).

A second boom in the interest for stocks and mutual funds came along with the new pension system, which was introduced 1994. The new pension system gave the possibility for private persons to invest a part of their pension in mutual funds or other securities such as stocks and bonds. In the year 2000 the pension system was further developed. The overhaul this time was that the Swedes now had the opportunity to invest their national pension in funds and stocks, not only their individual pension (Fondbolagens Förening, 2009). This overhauling of the pension system made the public interest in the financial market even greater. Since people’s future wealth was on the line, the increase in people who owned securities also resulted in an increase in stock analysts, stock recommendations and financial media. Prior to the increased interest from the public, professionals was almost exclusively the once who consumed financial media. Today as an example, di.se, the most visited financial website in Sweden has 1 033 940 unique visitors every week. That makes them to one of the most popular websites overall in Sweden (Kiaindex, 2009).

In June 2009, 17,7 per cent of the Swedish population owned stocks, which is equal to 1 642 000 people. However, that is a little bit behind the top notation from 2002 when 22,6 per cent owned stocks. The total value of the households’ portfolios is 412 billion SEK, which represents 14,5 per cent of the total stock market value. The median portfolio in June 2009 was worth 13 000 SEK, which indicates a lot of small-scale investors (SCB, 2009c). The most popular alternative to own stocks is to buy a part of a fund. The first mutual fund in Sweden was introduced in the 1950s. In 2006, 90 per cent of the Swedish pop-

ulation owned a part in some kind of fund (PPM included) and four out of five had a share of a mutual fund (Fondbolagens Förening, 2009).

The basic theory about the stock market is the efficient market hypothesis (EMH). The security market has to be efficient in order to function correctly. According to Fama (1970), an efficient market is a market where the price of the securities fully reflects all available information. There are three different stages of efficiency; weak form, semi strong and strong. According to Claesson (1987), the Swedish market is not completely efficient. That means that there exists opportunities to earn abnormal returns. If the market is semi-strong, there is no meaning to invest in anything else but index funds, because it requires access to inside information to actually beat index. One of the most important assumptions about market efficiency is that investors act rational. According to financial theories, this means that people behave like they “should”. However, this is not always the case. If people do not act rational, there will be opportunities to earn abnormal returns (Fama, 1970).

In an efficient market, there should be impossible to outperform the market continuously. However, some investors manage to do this on a regular basis. Well-known successful investors like Warren Buffet, Peter Lynch and Anthony Bolton have all showed the ability to perform better than index over time. An example from Scandinavia is the Norwegian stock guru Kristoffer Stensrud, also called the “stock hippie”. Stensrud is the owner and founder of the mutual fund company Skagen funds. Since the start in 1993 their funds have been able to beat the comparable index every year. Skagen funds have three different funds and the annual average return since the start has been over twenty per cent for all of them. Skagen’s Kon-Tiki fund is ranked as number one in its category by Standard & Poor (Bernhardsson, 2008). The strategy behind the success seems to be pretty simple. The most important thing according to Stensrud is to use common sense. The head office is located in Stavanger, far away from the financial centers, so he will avoid to be affected by what is going on there i.e. the psychological effects will not play a part in the investment decision made. More technically, Stensrud makes a distinction between price and value and therefore continuously tries to find undervalued stocks. He also likes to buy stocks that are unpopular and stocks with low P/E ratios. The desirable investment horizon is two years and the philosophy is to buy an undervalued stock, keep it for two years and then sell it when it has reached its true value. Stensrud seems to be trustworthy in what he is doing because the majority of his private wealth is invested in his own funds (Bernhardsson, 2008).

1.2 Problem

As mentioned in the background, the number of people investing in stocks has increased rapidly during the last decades (SCB, 2009a). Even though the interest and numbers of stock investors has increased, the question is if the knowledge about the stock market has increased exponentially. The environment has changed and the security market today is more complex than ever. In order to succeed in the long run, some financial knowledge is required (Aktiesparana, 2009). Many investors today lack that kind of necessary knowledge and the question of interest therefore is to find out the different investment alternatives that are available for that kind of small scale investors (Familjeekonomi, 2008). In order to find out how investors without in depth knowledge about the security market can get the best possible return, we will compare four different investment alternatives. The alternatives are an index fund, a mutual fund with focus on the Swedish market, government bonds and a portfolio consisting of stocks that has been recommended by professional stock analysts.

One popular alternative to constructing a portfolio with stocks on your own is to buy a part of a mutual fund from a bank or financial institute. A professional fund manager manages the mutual fund and the fund manager's task is to get the highest possible return for a given level of risk. This means that they should strive for beating the index in order to add value to the customers. The downside of mutual funds is that there is a relatively high fee you have to pay. The fee for a mutual fund consisting of Swedish large companies is usually about 1,3-1,5 per cent on an annual basis of the total value of the fund (Morningstar, 2009). Because it is more expensive to buy a mutual fund than an index fund, you can expect the mutual fund to beat the index fund. However, the upside with mutual funds compared to individual stocks is that you will be able to have a diversified portfolio without owning a lot of stocks on your own. You can also usually invest such a small amount as 100 SEK (Nordea, 2009).

Another thing we will look at is an index fund. An index fund is supposed to follow the target index, for example the OMXS30 index. The advantage with that kind of fund is that the fees are very low compared to other types of funds. That kind of funds does not require an active management and is therefore cheaper. The fee for XACT OMXS30 index fund is 0,3 per cent of the value of the holdings (XACT, 2009).

There has been a debate during the last years if fund managers actually add value to the fund they manage. A lot of research shows that most of the fund managers are unable to add additional value to the fund, i.e. beat the comparable index (Brunnberg, 2007). Why should you invest in a mutual fund that has lower return than an index fund when the mutual fund has higher administration fees than the index fund?

An alternative to buy a mutual fund is to construct your own portfolio with stocks. The portfolio we will focus on is a portfolio consisting of stocks that have been recommended by professional stock analysts. Investors that lack the proper knowledge tend to listen to the analysts (Forum för ekonomi och teknik, 2003). Stock analysts have an important role today and all banks and financial institutions provide analyses of different stocks on a daily basis. The difference compared to the seventies and eighties is that all relevant information is much more accessible nowadays. The main reason for that is Internet. About 80 per cent of the population in Sweden has access to Internet at home (SCB, 2009b). The analyses will reach a lot of investors and so the recommendations will be more powerful. By analyzing the different investment strategies and compare their returns over time, we will find which one that suits a private investor with limited knowledge the best.

1.3 Purpose

“To find out whether a strategy based on accumulated stock recommendations are able to outperform mutual funds and/or index funds with similar holdings from 2003-2008.”

1.4 Research questions

In order for us to effectively reach a conclusion we will have to answer a number of research questions. Previous work have been conducted that read up on the different parts that are of interest to us, but are handled separately. For example; if fund managers add value for the individual investor when investing in a mutual fund, if analysts are correct when releasing stock recommendations and comparison in terms of costs, risk and return between mutual funds and index funds. This is however questions that are handled separately by other researchers and there are entire thesis written on the different parts just mentioned.

Therefore we will in this report try to answer three specified questions, which will in turn make it possible for us to draw conclusions and reach our main purpose. It will also serve the purpose of providing the reader with a clearer picture of the purpose of our work.

The reason for investing in an actively managed fund is the belief that the invested money is in good hands of the fund manager. The manager with his or her knowledge will make the transactions that he or she thinks will generate the highest rate of return. For this is the private investor ready to pay a relatively high fee. An alternative to putting your money in a mutual fund could instead be to invest in a passively managed fund, for instance an index fund in which the return is based on the performance of the market and the fees are lower. We can then assume that what you pay for, or should expect, when investing in a mutual fund, is the fund manager to beat market index i.e. generate abnormal returns. Or in a market in downturn, to minimize a decrease in the funds total value in terms of invested money.

This leads us to our first research question:

- *Is the higher administrations fees in mutual funds in Sweden uncalled-for, or do professionals add value for the small-scale investors i.e. generating abnormal returns?*

If this is the case the investor should prefer an actively managed, mutual fund in front of a passively managed fund for instance index fund. Different kinds of risk parameters compared to rate of return will have impact on our result implying that different assumptions will have to be made; therefore we will describe and conform to a number of “basic” theories within investment strategy.

We previously pointed out that technology, along with possibilities, have moved forward and developed over the past years, and still do. This has made it possible to easily create your own fund-like portfolio. It has also brought the possibilities of facilitating information more easily. With these two ”opportunities” at hand our belief lies in that accumulated knowledge from several stock analysts, collected from the online, financial commercial and industrial magazine “Dagens Industri”, will be more worth than one fund manager’s single knowledge.

This leads us to our second research question:

- *If investment based on collected and accumulated stock recommendations, during the period 2003-2008, is more worth to the small scale investors, than investing in a mutual fund?*

This also leads us to another question we would like to answer. If the second just mentioned research question is indeed true, we further would like to see if the gathered information provided by stock analysts to the public, can help us outperform the market. If this is the case then investing in a passively managed index fund might not be a too bad of idea, to a profit-maximizing investor. Of course different factors have impact on the investors decision-taking when investing on a long term basis, but however this is a question regarding the individual investor's opportunity cost. For instance, spending several hours in front of the computer, instead of spending those hours together with your family or friends might not be the choice of the small private investor.

This leads us to our third research question

- *If investment based on collected and accumulated stock-recommendations, during the period 2003-2008, is more worth to the small scale investors, than investing in an index-fund?*

1.5 Delimitations

The paper will be written from the private investors' point of view in Sweden. Our focus in this report will be on the Swedish security market. The chosen stock recommendations will only be on stocks from the Large Cap list on Stockholm Stock Exchange. We will choose stock recommendations published on the financial website di.se no matter which stock analysts the recommendation is published by. The time period chosen is six years, between 2003 and 2008 which is an entire business cycle that includes both good and bad times.

The mutual funds analyzed are funds issued by the four largest banks in Sweden; Nordea, SEB, SHB and Swedbank (Svenska Bankföreningen, 2008). The main part of the fund should be invested in stocks listed on the Large Cap on Stockholm Stock Exchange, i.e. Swedish mutual fund (Sverigefond). The funds chosen should have equivalent risk, fees and investment strategy.

1.6 Definitions

Abnormal return

“The difference between the expected return and the actual return on an investment. An abnormal return may be either positive or negative; indeed, an abnormal return may be negative even if the actual return is positive.” (The Free Dictionary, 2009a)

Administration fee

“The money paid to the managers of an investment company. The fee is generally based on a percentage of the net asset value of the fund, with the percentage becoming smaller as the fund's assets grow larger.” (The Free Dictionary, 2009b)

Beta/Market risk

“The measure of an asset's risk in relation to the market (for example, OMXS30) or to an alternative benchmark or factors. Roughly speaking, a security with a beta of 1,5, will have move, on average, 1,5 times the market return. According to asset pricing theory, beta represents the type of risk, systematic risk that cannot be diversified away.” (The Free Dictionary, 2009c)

Diversification

“The acquisition of a group of assets in which returns on the assets are not directly related over time. An investor seeking diversification for a securities portfolio would purchase securities of firms that are not similarly affected by the same variables.” (The Free Dictionary, 2009d)

Fund manager

“A fund manager is an investment professional, who manages the allocation of the financial resources in order to achieve optimal fund performance.” (Investor Glossary, 2009)

Index fund

“A mutual fund that is not actively-managed and simply tracks a benchmark index.” (The Free Dictionary, 2009e)

Mutual fund

“A mutual fund is a company that brings together money from many people and invests it in stocks, bonds or other assets. Each investor in the fund owns shares, which represent a part of these holdings.” (Security and Exchange Commission, 2009)

Private investor

“A private person who uses his or her money to purchase property in the expectation of earning periodic cash flows from the property, making a profit on the eventual resale of the property, or both.” (The Free Dictionary, 2009f)

Risk-averse

“Wanting to avoid risk unless adequately compensated for it. A riskier investment has to have a higher expected return in order to provide an incentive for a risk-averse investor to select it.” (InvestorWords, 2009a)

Standard deviation/Firm specific risk

“A statistical measure of the variability of a distribution. An analyst may wish to calculate the standard deviation of historical returns on a stock or a portfolio as a measure of the investment's riskiness. The higher the standard deviation of an investment's returns, the greater the relative riskiness because of uncertainty in the amount of return.” (The Free Dictionary, 2009g)

Stock analyst

“A person with expertise in evaluating financial investments. Financial analysts, who serve as investment advisers and portfolio managers, use their training and experience to investigate risk and return characteristics of securities.” (The Free Dictionary, 2009h)

Stock recommendation

“An opinion given by an analyst to his/her clients about whether a given stock is worth buying or not.” (InvestorWords, 2009b)

Transaction cost

“The expense incurred in buying or selling a security. Transaction costs include commissions, markups, markdowns, fees, and any direct taxes.” (The Free Dictionary, 2009i)

Variance

“A measure of dispersion of a set of data points around their mean value. The mathematical expectation of the average squared deviations from the mean. The square root of the variance is the standard deviation.” (The Free Dictionary, 2009j)

2 Methodology

2.1 Introduction to methodology

In academic research there are various ways to carry out the exploration of information. Thus, the important thing is to get an understanding of the subject in order to use the right methods and approaches. Depending on how one will retrieve the information, there should be a distinction between qualitative and quantitative, between deduction, induction and abduction. Researchers can use each of these methods, but as mentioned above they differ in content and how they treat the data collected. We will also stress the ideas of validity and reliability. As mentioned in the first sentence, the importance of understanding the various methods of research are trivial in order for the end result to be as satisfactory as possible. By discussing the various methods and approaches we will be able to understand which one to choose for our specific paper. This methodology part will not cover how we practically went on collecting the data and finding information for our empirical findings. The more practical oriented ideas will be processed in the part “methods”. Though, this part will deal with the somewhat more philosophical distinctions made by researcher during and before they undertake the task at hand.

2.1.1 Quantitative and Qualitative

As stated in the earlier section, the distinction between qualitative and quantitative is important in order to carry on along the right path. Qualitative research is according to Thietart (2001) defined differently depending on the author of the specific paper. The following are some of the definitions provided in Thietart (2001); Miles and Huberman (1994) argue that qualitative data corresponds to words rather than figures. Yin (2009) explains that “numerical data” provides quantitative information, while non-numerical deals with the idea of qualitative data. So, the differences between the two are immense and understanding which one that fits the specific purpose is trivial. We have now discussed the definitions of the two, now a deeper understanding will be given in order to get an understanding of the two approaches.

“It is conventional to correlate investigation with a qualitative approach and verification with a quantitative” (Thietart, 2001). He further argues that when the researchers have a defined image of what they are looking for they use the ideas of verification, thus a quantitative approach. The outcome of the discussion of qualitative and quantitative, say that we

should use a qualitative approach toward our data collection. The choice is also founded in the fact that we will be using a theoretical framework in order to analyze our collected data.

2.1.2 Deduction, Induction and Abduction

As we discuss the usage of data we will also promote the idea of deductive, inductive and the abductive approach to the theoretical framework. Those approaches are much related to the ideas of quantitative and qualitative. As we discussed the quantitative approach is much about verifying. This is incorporated with the idea of the deductive method of interpretation. Deductive approach is the ideas that the data collected will be analyzed and interpreted with theories that already exist. According to Gill and Johnson (2002) “a deductive research method entails the development of a conceptual and theoretical structure prior to its testing through empirical observations”. A classic example of how deduction treats data is the Socrates idea first posted by Saunders (2009).

1: All men are mortal

2: Socrates is a man

3: Thus; Socrates is mortal

As one can see if the first and second proposal in the model are true then the third one must be true as well, this according to the deductive approach.

Inductive approach is a type of reasoning which involves moving from a set of specific facts to a general conclusion. The approach can also be seen as a building up from data to a theory instead of using an existing theory to understand the data. The information thus not analyzed with a current theory as a base. The inductive approach as described above aims more towards building its own theories.

Giving an example, the inductive approach takes into consideration the following. If one find out that all the houses in the specific sample are red, thus, then all houses in the world must be red. A theory is now founded and is used in order to support future research. Though, as Gill and Johnson (2002) argues that in the case of inductive approaches to research, the only thing the researchers aims for is the possibility of the information to be worth in order for her to use it to develop new theories.

As a compliment to these two approaches a third is sometimes mentioned, abduction. Abduction is not an approach that stands alone rather it is a mixture of deduction and induc-

tion. The Abduction starts from facts just as the inductive approach. Thus it does not neglect theories that are on the subject. Our paper will largely be undertaken with the ideas of abductive reasoning. To fully understand the ideas of abduction a quote from Arbner & Bjerke (2009) gives light on the approach, “abduction means that a single case is placed in general hypothetical pattern, which, if it is true, will explain the case, in question”.

Our thesis will have fragments of both the deductive and the inductive approach, thus an abductive approach. Since we are using well known models in our attempt to construct the best portfolio possible the deductive approach will be used. Thus, we also use fragments from the inductive approach, due to the fact that we are testing if ideas hold. As Saunders (2009) argues, in most paper written both inductive and deductive approaches are used.

2.1.3 Primary and Secondary data

When choosing which data one should have in the research, primary and secondary are the once we can use.

Primary data often consist of the collection of data from surveys, interviews, and focus groups. Secondary data uses data already at hand in order to improve products and services. In business research, both of the data can be used but they can also differ in various aspects.

Secondary data is, as the name indicates, data that uses past periods of information. Primary data is on the other hand the latest information. Primary data is often projected for the specific research that the researcher undertakes this in order to have data that to a large extent meet the objectives.

Why then, is the use of primary data more solid, does we not always use the primary approach? The collection of primary data have some disadvantages, the money factor is one of them as is the impact of time. To collect primary data is time costly and expensive, and sometimes it is just not feasible for the researcher to collect. The secondary data on the other hand is easier to collect since the data already exist in some form, the back side of secondary data is that as mentioned above that it is not objective specific. Thus, if the research takes this into consideration, the noise will be under control (Saunders, 2009).

2.1.4 Validity and Reliability

One aspect that researchers are concerned with during the process of research and after the process of research is the implications of validity and reliability. The researcher may ask them self up to what extent the research will be beneficial and utilized. This can be a crucial part of the paper due to the impact it may have on other researchers and the public at large.

In order to assess the validity of the research there are two main things that one should use. First we should, according to Saunders (2009) asses the relevance and precision of the work. The second thing is to get an understanding as previously mentioned, how well we can generalize the result we have gained. If we can see that these two can be accepted, the validity of the research will be on a satisfying level.

Reliability is the second parameter that the researcher should take into consideration in order to gain as high credibility as possible. Saunders (2009) has three questions that will answer how credible the work is. The first the researcher asks is if the results will be consistent on all actions? The second is if the same observations could be reached by others? The third and final is whether there is transparency from the raw data collected. Those questions will be answered and if they are consistent the credibility of the report is high and thus if they are not, the credibility will be low.

2.1.4.1 Validity and Reliability of our Study

The result received through our findings show interesting indications. However can one assume that the findings are reliable and valid? Thus, would others that research the same phenomenon come up with the same answers or would they find other observations? In order to answer this we use the knowledge of these things from the methodology part and try to establish the relevance and reliability of our findings. How we compare our findings with the findings done by other on the subject.

The validity can be dealt with by assessing the precision of the work. This paper is as we have mentioned based on our assumptions and specific data and thus the work is valid from those specific assumptions.

The implication on reliability, as was the second parameter, can be answered by answering three questions. First, is the actions taken applicable on all actions and the answer is as we have argued no. Further we can ask how easy we could generalize the result, which we have received. Concerning our accumulated stock recommendation model, the validity can be

discussed. Since the model together with the weighing process is something we by ourselves have invented, we are not sure how valid the model is, looking at it from a statistical point of view. To fully answer that question further research and more statistical models of significance are needed.

Concerning our theories that we use in order to correctly analyze our raw data and also to be able to obtain a reliable result we have to use reliable theories and models as foundation, to be able to reach a reliable conclusion. By using well known data and theories that are approved by the academic world we hope to achieve our purpose i.e. we will be able to achieve a more reliable result and conclusion.

Last we ask our self whether the data collected is transparent. This we believe is true. Since our theories on which we build the foundation of our thesis on are well recognized and still today central models within the financial world, we can say that the data which is collected and used in our thesis are indeed transparent. The raw data collected from Dagens Industri are created by professional stock analysts working at professional financial institutes and are therefore viewed upon as transparent by us. This however does not mean that they are correct meaning that different analysts will come up with different opinions. Since we are not comfortable to answer all the questions positively on the question: if the entire thesis is valid and reliable. We can draw the conclusion that our thesis is valid and reliable, given our specific assumptions and delimitations.

3 Theoretical Framework

3.1 Efficient Market Hypothesis (EMH)

The efficient market hypothesis has been one of the most important theories in finance for about 40 years. The primary goal of the capital market is to allocate capital. The ideal market is a market, which gives accurate signals for resource allocation. In other words, the market should be efficient. According to Fama (1970), an efficient market is a market where the price of the securities fully reflects all available information.

In an efficient market, the price of the security should be an unbiased estimate of the true value of the security. The true value and the market value do not have to be the same all the time, but the deviations should be unbiased. If the deviations are random, there will be an equal chance that the stock is under- or overvalued. No groups of investors should be able to find under- and overvalued stocks consistently.

Three market conditions have to be fulfilled in order to be consistent with EMH (Fama, 1970). The three things are; no transaction costs, identical and costless information, and homogenous expectations from all investors.

The price of a security should be adjusted immediately and correctly when new information about the value of a security hits the market (Fama, 1970). That means that those receiving the information later cannot make a profit by using that information. The meaning of correctly adjusted is that the prices on average should not underreact or overreact to the new information. Because the prices are immediately and correctly adjusted, an average investor cannot consistently beat the market by using already existing information, except through luck. They can only expect to receive a normal rate of return.

Another important thing is that the price of the security should not move without any new information. This is because the price should be equal to its value. This means that the prices should not change when there are changes in supply and demand.

The conclusion of the EMH is that it is better to just hold the market portfolio rather than buy a mutual fund or constructing a portfolio with stocks because it is impossible to beat the market consistently.

3.1.1 Different types of efficiency

According to Fama (1970), there are three different forms of the EMH; weak form, semi-strong form and strong form.

3.1.1.1 Weak form

The weak form of EMH implies that past price patterns should be reflected in the current stock price. That means that historical returns cannot be used to predict future returns (Fama, 1970). The implication of weak form of market efficiency is that technical analysis cannot be used to earn abnormal returns. However, some forms of fundamental analysis can still be helpful to provide abnormal returns. Weak form of efficiency is represented mathematically as:

$$P_t = P_{t-1} + \text{Expected return} + \text{Random error}$$

The interpretation of the equation is that the price today is equal to the last observed price plus the expected return and a random variable. The expected return of a security is a function of its risk. In addition to that, the random part in the equation will change when new information is released. The information could be positive or negative but should always have an expected value of zero. The important thing is that the random component is not correlated with the changes in the past, i.e. it is impossible to predict by looking at past prices. If the stock price follows the equation, you say that it follows a random walk (Fama, 1965).

3.1.1.2 Semi-strong form

The semi-strong form of EMH implies that all public information available should be reflected in the current stock price (Fama, 1970). Therefore, public information cannot be used to earn abnormal returns. The reason for that is that the prices will change immediately when the information is released. Examples of public information are annual reports, articles and press releases as well as historical returns. In this form of efficiency, fundamental analysis is seen as useless. However, abnormal returns can still be earned by using inside information.

3.1.1.3 Strong form

The strong form of EMH implies that all information, both public and private should be reflected in the current stock price (Fama, 1970). This means that it is impossible to earn

abnormal return, even though you have access to inside information. However, this form of EMH is not realistic in reality.

3.1.2 Foundations of Market Efficiency

3.1.2.1 Rationality

The first condition is that all investors have to act rational. Rationality in this case means that all investors should change their expectations of the future stock price in a rational way when new information is released. If the investors are rational they will value securities at their true value. This means that they will bid up the price when good news is released and bid down the price when bad news is released. In that way, the security will always be correctly priced (Shleifer, 2000).

3.1.2.2 Independent Deviations from Rationality

As all understand, it is impossible that all investors actually act rational in the real world. However, the market would still be efficient if the deviations from rationality are independent. If there were a large number of investors in the market, their trading strategies would be uncorrelated. Some investors would overvalue the security and some would undervalue it. In the end, the prices will be close to its fundamental price (Shleifer, 2000).

3.1.2.3 Arbitrage

Arbitrage is when an investor makes a profit by simultaneously purchase an undervalued and sells an overvalued stock in the same business. There exists a mispricing in the market. Arbitrage opportunities will only exist in an inefficient market. The effect of the arbitrage opportunity is that the overvalued security will go back down to its fundamental value and the undervalued security will also goes up to its fundamental value (Shleifer, 2000).

3.2 Markowitz Portfolio Theory

In 1952 Harry Markowitz in *The journal of finance* published his approach to what today has become the foundation to modern portfolio selection. The article focuses on the stage in which the investor has relevant beliefs about future performances and wanting to invest in a portfolio.

There are two underlying assumptions to be made in this theory. The first assumption is that the investor's main goal is, or should be, to maximize its expected returns. The second is that the investor act rational, meaning that if an investor is to choose between two portfolios with the same rate of return, the investor will chose the one with the lowest standard deviation, due to that the investor is expected to be risk-averse (Markowitz, 1952). If the expected rate of return is equal in both investments there is no conceivable reason for an investor to choose the investment with higher risk in front of an investment with lower risk. This can also be seen the other way around. If the investor can choose between two portfolios with the same standard deviation, the investor will choose the one with the highest expected rate of return.

The future cannot be predicted i.e. one cannot know with certainty the outcome of the market development. Therefore only expected or anticipated returns can be discounted.

The investor as a risk-averse person wanting to minimize risk as much as possible can do so by adding several different investments to the portfolio. In that way the portfolio becomes more diversified. By increasing diversification i.e. combining several investments that differ in terms of standard deviation and rate of return one can lower the portfolio risk by attaining diversification effect. One condition is that the different investments are not 100 per cent correlated. The higher correlation between them, the lower diversification effect is obtained. This to be compared towards when there is negative correlation between investments and high diversification effect arises.

What the investor strives for (or should) is to obtain a portfolio on the "efficient frontier" (figure 3:1). On this line is where the combination of distributed assets from the most efficient portfolios, given a certain amount of risk. By combining several assets or investments the investor could acquire a high number of different portfolios, but the ones that constitute a perfect balance between standard deviation and rate of return lies on the effective front line. Worth mentioning is that different curves can be created depending on the investor's risk-, and return-preferences.

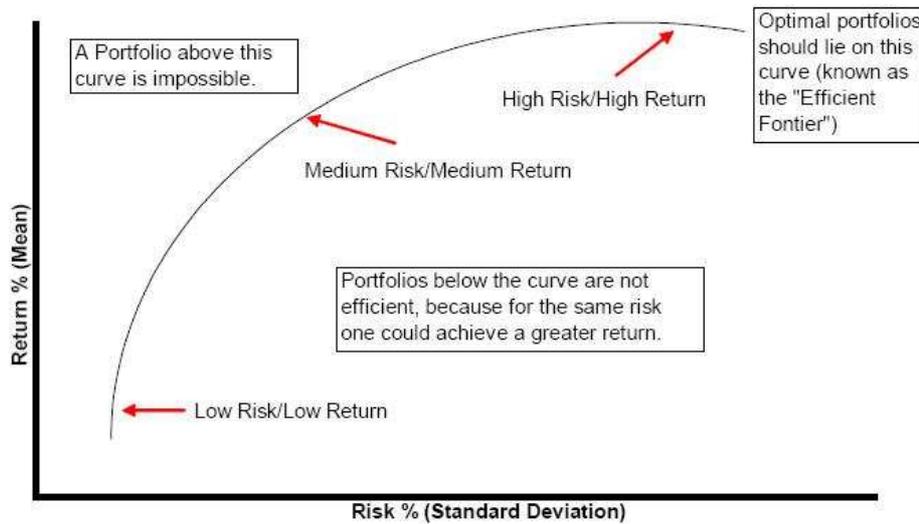


Figure 3:1. Efficient frontier

3.3 Risk

In order to correctly address the meaning of risk we have to point out that there are two different kinds of risk. According to Damodaran (2002), within finance risk analysis is to be viewed upon in three steps. Risk can be presented in terms of distribution between expected return and actual return. If an investor invests money for a given period, he or she expects to earn a certain amount of revenue during that period. What the investor earns in the end might vary a lot from the expected earning-expectations and this is what the source of risk comes from i.e. the difference between the actual and expected return is a source of risk. Also risk has to be distinguished between risk that is specific to one or a few investments, called firm-specific risk and risk that can be connected to a cross section of investments, called market risk. In a market where the marginal investor is well-diversified only market risk will be rewarded meaning that if you as an investor have eliminated the firm-specific risk by achieving the optimal portfolio, your risk is dependent only upon the market risk.

Firm specific risk or in other words standard deviation is according to Evans & Archer (1968) indeed correlated with to which extent the portfolio is diversified. They further argue that this fundamental relationship affects the reduction of variation (risk), which in turn is associated with the portfolio return. Their paper examines the rate at which the variation of returns for randomly selected portfolios is reduced as a function of the number of securities included in the portfolio. Consider a portfolio with an expected return of 14 per

cent and a standard deviation of 0,1231 containing of 20 securities, and another portfolio with an expected return of 14 per cent a standard deviation of 0,1238 containing 15 securities. However, if looking at this from the perspective of Evans and Archer the further diversification of five securities contributing with a 0,0007 lower standard deviation might not be justified. This then implies that further diversification starts to rapidly decrease at some point, a function they refer to as an asymptotic function. They conclude that portfolio sizes beyond ten securities might be considered as redundant and further diversification is a question of marginal benefit.

3.4 CAPM

The Capital Asset Pricing (CAPM) model is based on articles written by Sharpe (1964), Lintner (1965), Treynor (1955) and Mossin (1966). In these articles they discuss different parts of Markowitz's portfolio theory, which led to the foundation of the CAPM model. CAPM has today become one of the most central models among the financial models. It is used for calculating expected rate of return on financial assets with risk, in market equilibrium. Investors as rational people demand higher returns with increasing risk. Otherwise they would invest all their money in treasury bonds. The difference between the return on the market and the interest rate is termed the "market risk premium".

In a competitive market, the expected risk premium varies in direct proportion to beta. The expected risk premium on an investment with a beta of 0,5 is, therefore, half the expected risk premium on the market; the expected risk premium on an investment with a beta of 2,0 is twice the expected risk premium on the market (Brealy et al, 2007).

$$E(R_i) = r_f + \beta_{im}(E(r_m) - r_f)$$

Where,

$E(R_i)$ = Securities expected rate of return

r_f = Riskfree rate

β_{im} = The individual stock correlation with the market

$$\beta_{im} = \frac{Cov(r_i, r_m)}{Var(r_m)}$$

$E(r_m) = \text{Expected market portfolio rate of return}$

$(E(r_m) - r_f) = \text{Market risk premium}$

There are a number of assumptions that has to be made in order to both understand and use the CAPM. Investors are striving for high expected returns and want to obtain a portfolio with low standard deviation. All investors are planning equally far ahead i.e. their time-span of investments is equally long. No one is planning ahead of that time-span. Further the CAPM assumes that there are no transaction costs and all assets are infinitely divisible. There exists 100 per cent market efficiency, meaning that everyone on the market has access to the same information hence, they cannot find any under- or overvalued assets (Damodaran, 2002).

Implicitly, by making these assumptions investors will keep on investing and diversifying, due to that it will not cost them anything additional. In the end this will lead to not only all the investors owning a piece of every traded asset on the market, but also they will all be carrying the same weights on risky assets. If the benefits from diversifying decreases risk, and the investor can keep on diversifying without any additional cost, of course the investor will keep on diversifying until he or she owns a part of every possible asset in the economy (Damodaran, 2002).

3.5 Jensen's Alpha

Alpha is a measure when evaluating a portfolio or an investment's possible abnormal returns. Michael Jensen developed the measurement when he investigated mutual funds and its risk-adjusted rate of return. The measurement has as many other models within the finance area its roots in the CAPM model. Despite the measurements age it is today frequently used when valuating actively managed funds or mutual funds.

Previously we have in this report explained the basics of CAPM and that it is used for calculating the expected return given the investments covariance with the market measured as beta. Assuming that the assumptions made in CAPM are indeed valid should a security that is based on the market index give the same rate of return as index when the different factors are put together in CAPM. If the security for example a mutual fund under-, or over-performs, the difference between the expected and actual return is called alpha i.e. the

excess return of a security's return over the security's theoretical (CAPM) expected return is named alpha.

$$\alpha = R_i - [r_f + \beta_{im}(E(r_m) - r_f)]$$

Where,

$\alpha = \text{Jensen's Alpha}$

$R_i = \text{Security return}$

$r_f = \text{Risk free rate}$

$\beta_{im} = \text{Portfolio Beta}$

$(E(r_m) - r_f) = \text{Market risk premium}$

This means that if the value of alpha is above zero, it implies that the over-performance of the mutual fund is not based on the market index. Also the other way around; a value below alpha implies that the under-performance of the fund is not connected to market risk (Jensen, 1968). When having established this one can conclude that the value of alpha can be seen as the performance of the securities manager, in other words how well the manager has managed to add value for the investors. In an article in di.se Niklas Lundberg, CEO and founder of the unbiased analytical fund-firm Indecap, defines alpha as: "by how much the mutual fund has over-performed index, given the amount of risk that has been taken". Alpha can also be seen as how skillful the fund manager is to add securities that generate a positive rate of return to the portfolio or the possession in the mutual fund (Otamendi et al., 2008).

3.6 Sharpe Ratio

The Sharpe ratio or reward-to-variability ratio is developed by the Nobel Prize winner in economics William F. Sharpe. Sharpe introduced the measure for the first time in the article "*Mutual fund performance*" in year 1966. The Sharpe ratio is one of the most common used tools to evaluate the performance of portfolios and mutual fund managers.

As mentioned above, the Sharpe ratio was originally developed to be able to compare the performance of mutual fund managers. To just look at the return does not say much about

the actual performance. As an example, eight per cent return could be good if the risk is low but pretty bad if the risk is high. A performance measure taking the risk into consideration was needed and development of the Sharpe ratio solved this problem. The Sharpe ratio is a risk adjusted ratio that takes both return and risk into consideration when measuring performance (Sharpe, 1966). That makes sense, because a riskier asset should have a higher expected return than an asset with lower risk. The purpose with the ratio is to tell whether wealth has been created due to a good investment decision or just an increased risk of the portfolio (Sharpe, 1966). The investment is only good if the additional return increase more than the additional risk. The greater the Sharpe ratio is the better is the performance of the portfolio when taking risk into consideration. The Sharpe ratio formula is:

$$= \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where:

\bar{r}_p = Expected portfolio return

r_f = Risk free rate

σ_p = Portfolio standard deviation

The nominator includes the expected portfolio return minus the risk free rate. That is equal to the market risk premium, the premium received for bearing the risk. The denominator is the standard deviation of the annual rate of return.

The main objective for an investor or fund manager is to find a portfolio that gives the highest possible return for a given level of risk. The slope of the Capital Allocation Line is equal to the reward-to-variability ratio. The portfolio with the steepest slope is seen as the best investment alternative (Sharpe, 1966). That is the so called efficient portfolio. There will be a number of efficient portfolios available, but the fund manager has to find the one best suiting his level of risk. To be able to construct a portfolio with a high Sharpe ratio, the fund manager has to construct a well diversified portfolio. A well diversified portfolio will have a lower standard deviation and therefore a higher Sharpe ratio if the return is the same.

The underlying reasons of differences in performances of mutual funds may be two (Sharpe, 1966). The first is that the market is not completely efficient, so there will be opportunities to find undervalued stocks. The ability of the fund managers to find undervalued stocks is then essential. The other is the expense ratio. If all mutual fund managers

find an efficient portfolio and the market is efficient, the differences in performance should only be caused by differences in expenses. The fund spending the least will show the best result. The difference between a mutual fund and an index fund is that no money has to spend on security analysis in an index fund since it is a passive investment strategy.

When using the Sharpe ratio to analyze the performance, two different approaches of measuring return can be used (Sharpe, 1966). The first is to use the return before expenses and the other is to simply take the return when all expenses are paid. The return should then be compared to index. Using the first method tells if the fund is able to beat index if the fund manager has the resources to look for undervalued stocks. The second method tells if the benefits of finding undervalued stocks exceed the costs. If it does, the fund should earn a higher return than index after all expenses are paid.

To summarize, a higher reward to variability ratio indicates that the fund manager has been more successful in generating a return in relation to the risk. When comparing different portfolios, the one with the highest reward to variability ratio is the most successful.

3.7 Behavioral finance

As mentioned above, the efficient market hypothesis has been seen as the most important theory within the financial area since the seventies. However, a total different view compared to the EMH and the other theories discussed above are the concept of behavioral finance (Shleifer, 2000). Behavioral finance is the study of psychological effects in financial decisions and financial markets (Shefrin, 2001). The new theories started to appear in the middle of the eighties, and have since then become more and more accepted in the financial world. The earlier theories all state that the price of the securities equals its fundamental value because all investors are rational. The criticism from the behavioral finance was that not all investors act rational and therefore the theories are not plausible in the reality. According to Shefrin (2001), psychologists have produced evidence that people do not behave rational all the time. The concept of behavioral finance implies that people just act rational to a certain degree, thus they are also affected by other things such as psychology. When investors are not fully rational, they will react to irrelevant information and make the wrong investment decisions. The meaning of irrational behavior is that the market therefore is inefficient to some extent and abnormal returns can be realized.

The EMH states that there could exist irrational investors but their deviations from the true value will be random and therefore cancel out each other. According to Shleifer (2000) psychologist found evidence that investors do not deviate from rationality randomly. The study showed that investors usually deviate in the same way. This means that many of the investors will buy the same stocks at the same time and sell the same stocks at the same time i.e. they will listen to rumors and imitating other investors instead of making their own analysis. The situation when a group of people thinks, decides and acts in the same way is called herding.

The phenomena of behavioral finance and herding are not just true for private investors. Professional investors such as fund managers and stock analysts are also affected by the psychological affects. Fund managers tend to follow each other and the comparable index in order to avoid underperformance. If everyone chose almost the same stocks, deviations from index will be small and the possibility to earn abnormal returns will almost disappear. The managers frequently buy stocks that have performed well in the last period and sell stocks that have performed bad to look better in the eyes of the investors, even though this might not be the best for the fund in the long run (Shleifer, 2000).

3.8 Previous research about stock recommendations

The research within the subject of stock recommendations is contradictory. Some researchers find evidence that stock recommendations actually add value and can be used to earn abnormal return while other finds that stock recommendations do not provide any value at all for the investor. We chose to present research and theories representing both views and then find out which theory that holds according to our study.

3.8.1 Cowles

Cowles academic article *Can stock market forecasters forecast?* from 1933 was one of the first covering the subject within stock recommendations and stock analysts performance. In the research, Cowles studied the performance of professional stock analyst agencies and their ability to select stocks that generates an abnormal return. In total, twenty insurance companies' and sixteen financial service companies' ability to provide valid stock recommendations was analyzed.

The purpose with the study was to see if stock analysts were able to produce forecasts and recommendations that could be used to earn positive abnormal returns. If investors are able to predict the future and earn abnormal returns, that will be a contradiction to the Efficient Market Hypothesis. The companies included in the study were well known within their different industries. The recommendations have been found through weekly publications in media (Cowles, 1933).

The two industries to analyze were financial service and fire insurance companies. The study of sixteen financial services during the period from January 1, 1928, to July 1, 1932 resulted in 7500 recommendations of individual common stocks for investment. Only six of the sixteen stocks performed better than the average (Cowles, 1933). The average return for all the sixteen companies was -1,43 per cent. The study of twenty fire insurance companies during the period from 1928 to 1931 resulted in that only six out of twenty stocks were able to perform better than the average stock. The return for all the stocks was -4,72 per cent, which was 1,20 per cent worse than the average. Picking stocks randomly could have reached a similar or better result.

Cowles (1933) draw the conclusion that stock analysts were not able to produce stock recommendations that yield a positive abnormal return. As mentioned above, the average return was 1,20 and 1,43 per cent lower than the average common stock return. Even the recommendations that provided abnormal returns failed to show evidence of good skills of the analyst rather than just luck. The conclusion according to Cowles (1933) is that stock recommendations do not add value to the investor and is not reliable as an investment strategy.

3.8.2 Stickel and Womack

An opposite view to Cowles findings was presented in the article "*The anatomy of the performance of buy and sell recommendations*" (1995) by Stickel. The main finding from Stickel was that stock analysts are able to influence stock prices. Stickel (1995) also found that analyst recommendations do add value in the short run. Buy recommendations earns an abnormal return of 1,16 per cent if you just look at a period of eleven days. Sell recommendations shows an average return of -1,28 per cent during the same time span. Womack (1996) also provide evidence that stock recommendations add value. Buy recommendations have a positive return of 2,4 per cent while sell recommendations have a negative return of 9,1 per cent.

3.9 Previous research about fund performance

Investors are obviously interested in evaluating the performance of different funds before an investment decision is taken. Performance evaluation of mutual funds has been used since the 1960s. Jensen, Sharpe and Treynor developed the first evaluation methods. During the last years, a lot of new research has been made and new evaluation methods have been developed.

3.9.1 Dahlquist et al.

Dahlquist et al. (2000) studied the fund performance in the Swedish market. They used Jensen's alpha to measure the performance. The average alpha for Swedish mutual funds during the period 1993 to 1997 was barely positive or very close to zero. This means that the fund manager only added a low degree of value for the investors. The results also showed that more actively managed mutual funds outperformed passively managed mutual funds even though it was by small margin. Higher trading activities create value, which means that fund managers who trade more are better at finding mispriced stocks than managers who trade less.

3.9.2 Engström

To find out the value of active portfolio management 112 Swedish mutual funds was analyzed by Engström (2004). The time span was between 1996 and 2000 and the funds analyzed were Swedish funds or Small Cap funds. Engström (2004) evaluated the performance of funds by forming replicated portfolios and strategic and tactical decisions were separated. Evidence that supports the value of active fund management was found when evaluating the performances according to the new measure on a sample of Swedish mutual funds. Both the average Sweden fund and the Small Cap fund were able to beat the comparable index. Small Cap funds and Swedish mutual funds performed 3,2 per cent respectively 1,7 per cent better than index in average. Analyzing these figures, you can see that they are very high because both fees and commissions are deducted from the returns. The value of the Swedish funds was created through strategic decisions. The conclusion was that active portfolio management does add value and more trading activity creates value in the fund.

3.9.3 Index fund performance

As we have touched upon, the discussions whether fund managers add value is an ever so important topic. Thus one does not have to just rely on the manager if they want to invest their money in a fund. There are also as previously mentioned index funds. These funds are more automatic and are managed by a computer that makes sure that the performance of the index fund follows a pre-determined index. Such an index can be the OMXS30, S&P 500 or even an index consisting of natural resources such as oil or gas (Govan, 2009). As the fund is not actively managed the administration fee is lower than it is in an average actively managed mutual fund. The administration fee is thus not the only reason why one should consider an index fund. The interesting feature is when looking at the performance of such funds in relation to the actively managed funds. According to Govan (2009) the index fund will outperform the actively managed funds. In the time frame ranging from 1997-2007 84 per cent of the actively managed funds underperformed the index. Further Govan (2009) arguments show that the percentage of the funds that beat the S&P index two years in a row was only 41,6 per cent during that 1992-2007. Even more interesting is that only 9,7 per cent of the actively managed funds are able beat index during a three year streak.

These facts are interesting from our perspective due to the fact that, as we have discussed if managers add value. This can be seen as an indication that index funds are better than mutual funds. Later we will see how the index fund in our benchmark studies has performed during the years chosen.

4 Method

4.1 Method and approaches

The inspiration to this paper is retrieved from various theories and previous papers. One of the papers that have given us inspiration is the paper: *Can investors profit from the prophets?* (Barber et al. 2001). They discuss the implications of using stock analysts recommendations as an investment strategy. They test whether there is a possibility to obtain abnormal returns by using solely the information retrieved from analysts. Their findings indicate that in the extremely short-run, a day or less the theory, that one can earn abnormal returns on trading solely on recommendations holds true. Thus they could not find any abnormal return in the long run. This to be compared to Stickel (1995) who argues that analyst recommendations earn an abnormal return of 1,196 per cent if you look at a period of eleven days.

The idea we are about to test is whether information from many different analysts are more reliable than the information from one single analyst. The paper by Barber et al. (2001) does take the effect of accumulated knowledge into consideration, but what we are about to undertake, will have the ideas of accumulated information as one of its centre columns. Further, the paper will as mentioned in the problem discussion have its starting point in the willingness to introduce private investors to both classic investment strategies, such as mutual funds, index funds and government bonds. Thus we will also introduce our own idea and model, which we hope, can be seen as a compliment for the private investor. Our intention is to find an investment strategy that is easy to follow and demands a smaller amount of knowledge regarding the financial market, compared to what otherwise, by the general public, is viewed upon as a bit more complicated.

The starting point to our findings is the idea that previously stated, the more information we have, the more reliable the information is, compared to single information attained by the individual analyst. Our belief is that in the world of mutual funds and mutual fund managers, managers themselves rely on their own calculations and valuations. However, with the amount of stock recommendations that are frequently released today, we believe that the accumulated knowledge and information created by several analysts are more accurate than one single individuals point of view.

Why we believe this is an important issue to discuss is whether the fund manager's is successful in adding value for the investors. Today an ordinary Swedish mutual fund has an

administration fee of approximately 1,3-1,5 per cent on the capital invested. A Swedish mutual fund is defined as an actively managed fund, which indicates that the managers are active with trading within the fund. As a counterpart we have the index fund which are passively managed and thus have a lower administration fee of approximately 0,5 per cent. Thus, this kind of mutual funds are not actively managed, i.e. they does not have active trading of their assets. Instead an index fund follows a predetermined index on the stock exchange (The Free Dictionary, 2009e).

The implication that makes this interesting is the rate of return, which these different funds generate. One could believe that an actively managed fund would give a higher return than the passively managed fund but historically this is not the case. The index fund as mentioned previously perform better then than the mutual fund year after year.

With this as a springboard we brainstormed ideas that developed into and understanding how the “average Joe” with limited financial knowledge can create return on invested capital greater than the funds.

With ideas presented above and with the influence from Barbour et al. (2001) we will try to create an investment strategy, which can add more value with respect to risk than the ordinary investment alternatives mentioned.

4.2 Data collection

The initial action we took was to determine the content in the mutual funds of our choice. We choose Swedish mutual funds with the main weight in stocks traded on the Swedish Large Cap stock list. We used the Swedish mutual fund due to the fact that this specific security has been a favorite among small private investors over time (Lindmark, 2002). Almost every mutual fund company have a security that can be compared with the Swedish mutual fund thus we choose to use the largest banks in Sweden, Nordea, SEB, SHB and Swedbank. The fact that all of the four large banks in Sweden have a mutual fund named “Sverigefond” and also that the possessions of stocks within the banks Swedish mutual fund almost are identical made the decision even easier. Also the implication why we choose to use the Large Cap Sweden mutual fund as a foundation is the fact that these specific funds historically have been increasingly popular among small scale investors. Also the so called index fund has gained in popularity and will be used as a benchmark, on

which we will compare performance. Finally we will use the government bond as a risk free performance comparison.

The ideas of which of the different investment alternative to choose, will not only be based on the performance of the security per se, but it will also be scrutinized by using the theories of risk measurement in order to find out the best return to a specific risk level. The data which will be retrieved from di.se, on this homepage, historical recommendations is posted and thus we will use them in order to perform our test. The information of historical stock prices has been collected from omxnordic.com. The information of which stock a specific mutual or index fund contains has been retrieved from the homepage morningstar.com which is a gateway for mutual fund information.

The idea is that an investor shall be able to relax during large parts of the year, and only be concerned with her finance four times a year. The portfolio we have assembled will as mentioned be rebalanced quarterly. The idea is to base actions on the accumulated information received three months up until the date of reinvesting. The possible action that investors are able to make is to buy, sell, and short-sell. Short selling is the possibility for an investor to sell a security, which she does not own. The implications of short selling is that the brokerage firm lends the security to the investor, the money are being made when the investor after a drop in the share price purchase the security and thus receive the spread as profit (Elton et al., 2007).

4.3 Data processing

The information received from the mutual funds and especially the weights of their possession has been used in order to create our own portfolio. As previously mentioned the portfolio will look much as a Swedish mutual fund when it comes to content, i.e. which stocks that the portfolio of choice contains. The weights, as of the companies in the large banks' Swedish mutual funds do not deviate much between the different banks. The largest weighted holdings are almost exactly the same across the banks as can be seen in table 4:2. This fact made it easy for us to choose which stocks to include in our portfolio.

4.4 The construction of the portfolio

Our portfolio will be based on the average of the ten largest holdings in each of the respective banks mutual funds, called Swedish mutual fund. Thus, all stocks in the mutual funds will not be of interest to us when putting together our portfolio. The decision was to use ten stocks in our portfolio, since further diversification is not always preferable, though the benefits from diversifying get smaller and smaller (Evans & Archer, 1968). The time period we will analyze is six years with 2003 as the start and 2008 as the end year. The recommendations we look at are always retrieved from the quarter before, e.g. the investment in January 2003 will be based on the recommendations during the fourth quarter 2002. As mentioned previously, the portfolio will be rebalanced every three month. The construction of our own portfolio will to some extent be based on a ranking system.

Buy recommendation **3 points**

Neutral **2 points**

Sell recommendation **1 point**

All recommendations each quarter for one stock will be summarized and every buy recommendation will receive three points, neutral two points and sell recommendations one point. The average for each period and stock will then be calculated. Depending on the average, different points will be retrieved from the ranking system below:

Ranking system

Average	1	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2	2,1	2,2	2,3	2,4	2,5	2,6	2,7	2,8	2,9	3
Points	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10

Table 4:1. Ranking system

As can be seen from table 4:1, the stock with the highest or lowest average will receive the highest point which indicates that this specific stock will have a large weight in the portfolio i.e. if the average stock-recommendations are unanimous the average will become three and be given ten points.

The weights of the portfolio will be based on the points received from the ranking system. Each individual stocks point divided by the sum of all the stocks points. This is because when all analysts have homogenous recommendations it is more likely that the recommendations are right and the weight in the portfolio should therefore be larger than it should have been when there are dubieties between the analysts.

The construction of the portfolio will below be shown in an example.

Assume we have a portfolio consisting of ten stocks resembling the stocks held by the mutual funds. The stocks we have to our disposal are the following;

- Nordea
- Ericsson
- Hennes & Mauritz
- TeliaSonera
- Volvo
- SEB
- Sandvik
- AstraZeneca
- Atlas Copco
- SHB

Table 4:2. Average Swedish mutual fund possessions

Every stock has to have at least three recommendations every quarter. So if one stock during one period does not have enough recommendations to be used in our portfolio, we will not have any holdings in the stock during that specific period.

A step by step approach to how we build our portfolio.

1) Retrieve stock recommendations from Di.se. Let's say that we have a total of 100 recommendations in one specific period. Assume that stock X have 25 of those recommendations, 5 of those are sell, 15 are buy and 5 are hold.

2) The next step is to find the weights of each stock. To find the weights we have to calculate an average. We multiply the number of sell by one, hold by two and buy by three. In the Stock X case we would end up with the following numbers: Sell $(5 \times 1) = 5$, Hold $(5 \times 2) = 10$ and Buy $(15 \times 3) = 45$. We now take the sum of the above calculations and divide

by 25, which was the total recommendation made on Stock X. This will result in an average of 2,4.

3) The number obtained above is now scrutinized by the ranking system. 2,4 corresponds to the point four in the ranking.

4) After having performed these calculations on all the stocks within our portfolio, we can start calculating the individual weights each stock should represent in this specific period.

	Ranking	Position	Weight
<i>Nordea</i>	4	Long	11,76%
<i>Ericsson</i>	1	Short	2,94%
<i>H&M</i>	2	Long	5,88%
<i>TeliaSonera</i>	7	Long	20,59%
<i>Volvo</i>	6	Short	17,65%
<i>SEB</i>	6	Long	17,65%
<i>Sandvik</i>	1	Long	2,94%
<i>AstraZeneca</i>	3	Long	8,82%
<i>Atlas Copco</i>	2	Short	5,88%
<i>SHB</i>	2	Long	5,88%
Total	34		100%

Table 4:3. Weighting example

In table 4:3 we can observe how the ranking system corresponds to the weight. Taking Nordea as an example, the weight of 11,76 per cent is retrieved from the following calculation; $4/34=11,76$ per cent.

5) The choice to go short or long on the specific stock is decided of the average number. Average numbers below two will result in a short position, exactly two will result in a no position, and an average above two will result in a long position.

To get an overview of the weights in our portfolio every quarter, see appendix.

Assumptions

- The initially amount invested is 100 000 SEK.
- Rebalance the portfolio every three months based on the stock recommendations three months prior to the reweighting.
- Buy the stock when the value is above two.
- Short sell the stock when the value is below two.
- Get out of the position when the value is exactly two or when there is insufficient with recommendations.
- There must be at least three recommendations every quarter, otherwise - get out of the position.
- Dividends will be included if we hold the stock on the in-dividend date.
- Transaction costs and taxes will be taken into consideration.
- Transaction costs will be based on the prices from the stock brokers Aktiedirekt and Avanza. Long positions will be executed on Aktiedirekt and short positions on Avanza.
- Taxes will be paid immediately when the profit occur.
- Prices calculated are the closing prices the day before.
- All the money available in each period will be invested.
- Short selling will be treated in the same way as buying the stock, i.e. the portfolio will never be more than 100 per cent.
- Interest rate on the amount short sold and the interest rate received will cancel out each other.
- Number of shares is a theoretical value, therefore parts of shares are allowed.

4.4.1 Treatment of transaction costs

Transaction costs are in this case associated with the cost of buying and selling stocks. In the administration fee paid to the index and mutual funds, the trading costs are covered as well. The fee in an mutual fund is approximately 1,3-1,5 per cent. During the construction of our portfolio the issue of transaction cost was treated in the following way; we searched the web in order to find the stock broker with the lowest transaction cost. To find the

cheapest one was essential in order for us to get as accurate result as possible. The choice of stock broker was Aktiedirekt, which is owned by the large brokerage Nordnet. The transaction cost there is 9 SEK or 0,15 per cent of the value traded, thus for one sell and one buy the cost is at least 18 SEK. However, Aktiedirekt does not provide the service of short selling. Therefore, we had to find another stock broker that provides this service. The cheapest one providing short selling is Avanza. Their price is 199 SEK in administration fee plus 99 SEK per transaction. Therefore each transaction will cost us $199+99+99= 397$ SEK.

Further, the transaction cost for a short position is to some extent more difficult because both an administration fee and a loan are involved. When taking a short position, one borrows a specific security and the value borrowed must be paid interest on. Thus, we have made the assumption that the interest rate paid is equal to zero. This is because our portfolio will always be 100 per cent regardless of long or short positions. When taking a short position, the transaction will take place in the end of the period. That implies that there is money that is not invested during almost the entire quarter. This money could then be invested to the risk free rate for three months. The interest rate for taking a short position and the interest rate when investing are almost the same. Therefore we chose to let them cancel out each other and not calculate with any interest costs at all.

4.4.2 Treatment of taxes

When we buy and sell stocks every quarter we make the assumption that we also pay taxes every quarter. Therefore we have a specific tax account where we cumulate the taxes for every quarter. If the underlying quarter results in a positive return, the tax will be withdrawn from the profit during the period in order for us to not reinvest money back into the portfolio which actually belongs to the tax authority. Though if we another quarter during the same year experience a negative result we are allowed to offset that loss with the tax paid earlier during the year. In the end of the year, we check that the tax paid for the whole year is correct.

The funds do not have the same problem due to the fact that one only has to pay tax when realizing the capital. However, to have comparable figures, we chose to realize the profit/loss in the end of every year. In that way we pay tax for the funds once every year and

get the after tax return annually. The after tax return could then be compared to the after tax return from our own portfolio.

Though this is how we in this specific context have dealt with the tax problem, there are still other ways how to deal with the tax issue. How to treat tax is much an individual decision based on the financial status of the object. One can use deductibility or trade within endowment insurance. Endowment insurance is an instrument for tax planning, one pay a small fee and then after five years when it expires the assets within the insurance are tax free.

5 Investments performance

5.1 Return

The empirical findings will display the result, i.e. the return of our portfolio and the other securities we have chosen to compare during the six-year time period. Also the result achieved from the usage and appliance of the Sharpe Ratio and Jensen's Alpha. Primarily, we will show the performance of our portfolio and how it has developed annually during the time from the beginning of 2003 to the end of year 2008. Secondly we will compare the performance of our portfolio, the mutual funds, the index fund, and the risk free rate during these years. Figure 5:1 and table 5:1 will display the return from the different investment alternatives we have chosen to compare. The return is calculated after tax and the tax shield used is 30 per cent. Due to the fact that mutual funds reinvest their returns to 100 per cent while we in our portfolio have to pay taxes once a year because we are realizing securities four times a year. In order for the result to be as relevant as possible, the mutual funds and index funds are also in our example realized once a year. This is done in order to have the same tax effect on the return as our portfolio.

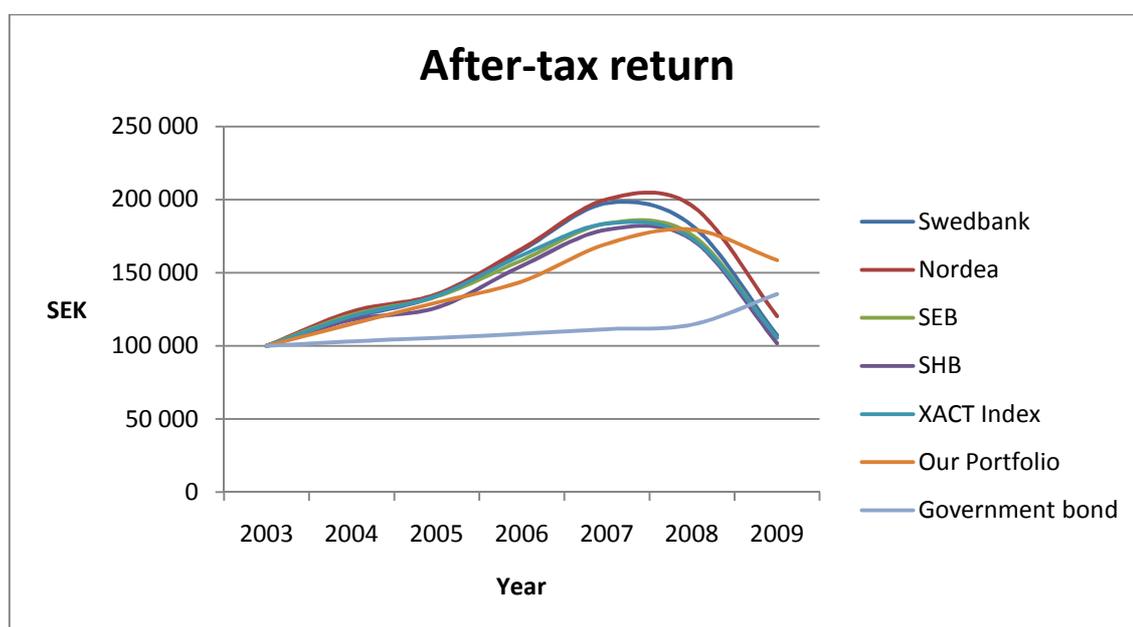


Figure 5:1. After tax return 2003-2008

Figure 5:1, show the return on investment in the different securities of choice during the six year from 2003-2008. The graph indicates a pattern of constant growth up until the year 2007. The yellow line our portfolio, shows a somewhat more moderate return during the

first five years. The deviation from the others occurs primarily between the years 2005 until 2008. Thus, during the years of negative return 2007 and 2008 our portfolio does not follow the rest of the investment alternative, this results in that our portfolio after the end of 2008 have a substantially better overall return than any of the other investment alternatives in the sample.

After-tax return 2003-2008							
Year	Swedbank	Nordea	SEB	SHB	XACT Index	Our portfolio	Government bond
2003	19,05%	23,44%	21,16%	17,80%	20,18%	15,04%	3,25%
2004	12,75%	9,73%	10,31%	7,11%	11,66%	12,65%	3,09%
2005	23,06%	22,82%	18,52%	22,57%	20,55%	11,16%	2,36%
2006	19,53%	20,38%	15,94%	16,01%	13,44%	17,87%	2,59%
2007	-7,70%	-2,20%	-4,34%	-3,81%	-5,51%	5,75%	2,92%
2008	-41,16%	-38,57%	-40,00%	-41,05%	-38,98%	-11,69%	2,73%
2003-2008	7,23%	20,32%	5,41%	1,73%	5,81%	58,57%	18,18%

Table 5:1. After-tax return 2003-2008

In table 5:1 the after-tax return year wise can be observed. One can here also see the implication the financial turmoil had on the market in the beginning of year 2007. And in 2008 the financial meltdown was a fact, which very much are reflected, in the return statistics. As mentioned earlier in empirical findings, Nordea is the bank who's Swedish mutual fund has had the best development of the four large banks. Also an interesting observation is that just investing in government bonds over this specific period of time would have resulted in a better return than both Swedbank's, SEB's, and SHB's mutual funds. As previously stated our portfolio has a significantly better return than any of the other investment alternatives.

5.2 Sharpe ratio

The Sharpe ratio is as mentioned, an indication of the performance of the fund or portfolio with respect to risk. The risk measure used in this context is the standard deviation, which is the firm-specific risk that investors would like to minimize by diversifying their portfolio. The standard deviation can be observed in table 5:3. The investment with the highest positive Sharpe ratio or the lowest negative ratio has been most successful in generating return with respect to risk, which can be observed in table 5:2. Year 2003 the investment with the highest Sharpe ratio is our portfolio and the one with the lowest is SHB's mutual fund.

Sharpe Ratio						
Year	Swedbank	Nordea	SEB	SHB	XACT Index	Our Portfolio
2003	1,2800	1,7155	1,6055	1,0622	1,3900	2,5426
2004	1,8928	1,3549	1,6931	0,7900	1,8384	2,6214
2005	10,5242	12,4629	8,0554	5,9783	7,0939	4,2066
2006	1,7666	2,0436	1,1125	1,5308	0,9749	2,8509
2007	-1,2596	-0,8398	-1,2327	-0,9394	-1,2341	0,3208
2008	-9,6072	-10,016	-11,0019	-11,8909	-24,5015	-3,4109

Table 5:2. Sharpe ratio 2003-2008

In table 5:2 one can see that our portfolio had the highest ratio out of all the securities during 2003. Our portfolio had a ratio of 2,54 and the second best was Nordea followed by SEB. The worst performance according to the Sharp ratio was SHB. The development of the Sharp ratio during 2004 was somewhat different from that of the prior year. The three with highest ratio during 2004 are our portfolio, Swedbank, and XACT Index. During 2005 Nordea had the highest ratio. This is also the year where our portfolio in relation to the other investment alternatives is the worst alternative. The same pattern can be seen in 2006 as in 2005 with Nordea and Swedbank in the top of the funds. Consequently, the most interesting notation, which can be made during this period, is that our portfolio which has seen a positive development of the Sharp ratio, from the last position in 2005 to the top position during 2006. During 2007 the financial world, as mentioned previously, observed mayhem throughout the world. This can be viewed from the ratios above. Previous years we have had positive ratios, but now all the investment alternatives except our portfolio have negative returns and thus result in negative Sharpe ratios during 2007. The same negative development as in 2007 is observed in the year of 2008. In the negative trend during 2007 was marginal, during this year it has been significant.

Standard deviation						
Year	Swedbank	Nordea	SEB	SHB	XACT Index	Our Portfolio
2003	11,26%	10,96%	10,29%	12,39%	11,18%	4,09%
2004	4,40%	3,92%	3,48%	3,40%	3,94%	3,14%
2005	1,87%	1,56%	1,88%	3,21%	2,42%	1,85%
2006	8,96%	8,16%	11,00%	8,04%	9,99%	4,97%
2007	9,42%	7,58%	6,90%	8,49%	7,84%	4,94%
2008	4,69%	4,24%	3,99%	3,78%	1,75%	4,57%
2003-2008	9,79%	9,17%	9,24%	9,46%	9,00%	5,11%

Table 5:3. Standard deviation 2003-2008

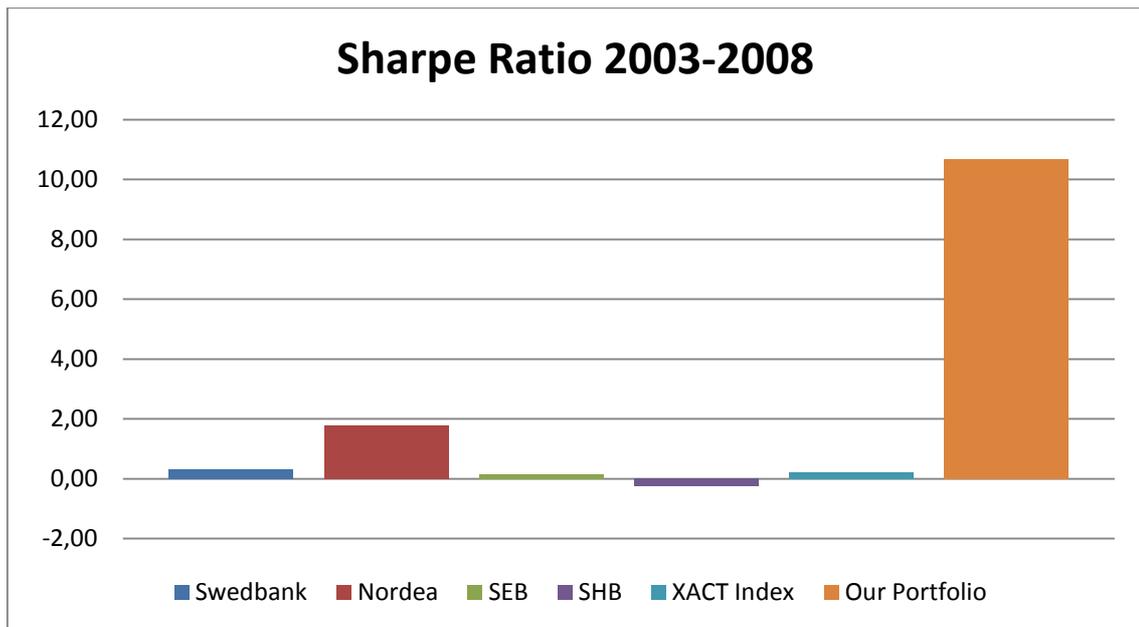


Figure 5:2. Sharpe ratio 2003- 2008

When we composed an average performance graph based on the Sharp ratio between the years 2003-2008, one can clearly see in figure 5:2 that the performance of our portfolio compared to the other investment alternatives has, in context of the Sharpe ratio, become even more evident.

5.3 Jensen's Alpha

Alpha is a measure when evaluating a portfolio or an investment's possible abnormal returns. A value above zero indicates that abnormal returns has been created i.e. the actual return is higher than the expected return (CAPM). Abnormal return has then been created by good investment choices made by the fund manager or just a good year in the market but high alpha's over time then might be proof of good management. As can be seen in table 5:4, in 2003 the fund with the highest alpha-value is the Nordea mutual fund and the fund with the lowest alpha is our portfolio.

The expected risk premium varies in direct proportion to beta. As table 5:5 indicate the highest beta was found in SEB with a beta of 0,9828, respectively the lowest beta was attained by our portfolio with a beta of 0,7685. These numbers indicate that SEB vary against the market with a multiple of 0,9828, and our portfolio with a multiple of 0,7685.

Jensen's Alpha						
Year	Swedbank	Nordea	SEB	SHB	XACT Index	Our Portfolio
2003	0,0884	0,1222	0,0922	0,0659	0,0807	0,0485
2004	0,0496	0,0116	0,0125	-0,0149	0,0249	0,0470
2005	0,1358	0,1189	0,0677	0,1178	0,0864	0,0201
2006	0,0924	0,0849	0,0322	0,0432	0,0058	0,0592
2007	-0,1643	-0,1163	-0,1439	-0,1310	-0,1559	-0,0157
2008	-0,4627	-0,4393	-0,4560	-0,4637	-0,4460	-0,1676

Table 5:4. Jensen's alpha 2003-2008

The starting year 2003, one can see in table 5:4 that the highest return over the expected return was performed by Nordea. In 2004 Swedbank had the highest alpha value. Overall the alpha values were lower in 2004 compared to 2003. However, five out of six investments had a positive alpha which means that value has been created taking risk into consideration. During 2005 the alpha's started to increase again. Our portfolio showed the worst result while Swedbank once again was the best. Noteworthy is that all alternatives have positive alpha's. In 2006 Swedbank and Nordea had the highest actual return compared to the expected return. The index fund showed the worst result in this period while our portfolio was in the middle. 2007 was a bad year and all alternatives had negative alphas. Even though all showed negative values, our portfolio had the least negative. The trend in 2008 is the same as in 2007 with negative alpha values. Once again, our portfolio performed best when the overall performance of the stock market was bad.

Beta						
Year	Swedbank	Nordea	SEB	SHB	XACT Index	Our Portfolio
2003	0,7764	0,8878	0,9683	0,8871	0,9874	0,7739
2004	0,7687	0,8964	0,9770	0,9005	0,9960	0,7961
2005	0,7470	0,8995	0,9858	0,8843	1,0016	0,7122
2006	0,7481	0,9027	0,9834	0,8839	0,9976	0,9093
2007	0,8079	0,9049	0,9904	0,8848	0,9955	0,6111
2008	0,8225	0,9098	0,9921	0,8948	1,0012	0,8084
2003-2008	0,7784	0,9002	0,9828	0,8892	0,9966	0,7685

Table 5:5. Beta 2003-2008

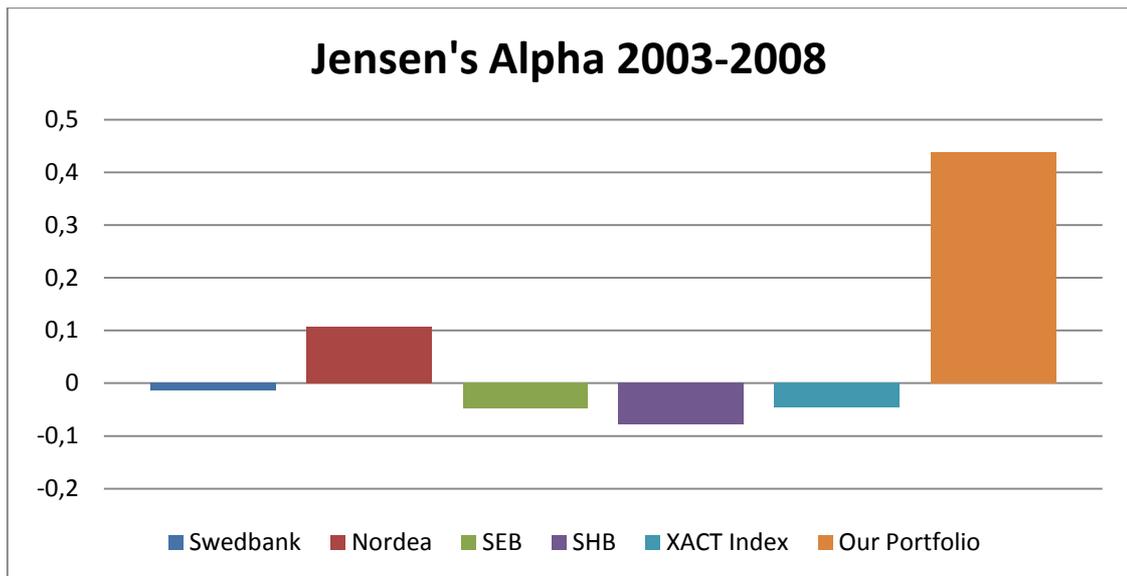


Figure 5:3. Jensen's alpha 2003-2008

When summarizing the performance over the six years, the result is quite remarkable. As can be seen in figure 5:3, the investment alternative with the best Jensen's alpha was our portfolio. The other one with positive alpha was Nordea while all the other provided negative returns.

6 Analysis of our empirical findings

The analysis will be performed with the starting point within in the theoretical framework and its appliance on the empirical findings. Initially, the theories will be scrutinized individually.

Our purpose is to find out whether a strategy based on accumulated stock recommendations are able to outperform mutual funds and/or index funds with similar holdings from 2003-2008.

We previously pointed out that technology, along with possibilities, have moved forward and developed over the past years. This has made it possible to easily create your own fund-like portfolio. It has also brought the possibilities of facilitating information more easily. With these two "opportunities" at hand our belief lies in that accumulated knowledge from several stock analysts, collected from di.se, will be more worth than one stock analyst's or fund manager's single knowledge. The idea is as mentioned in the method that more valid accuracy are being received with a larger numbers of recommendations, while few recommendations will have a larger room for errors and noise. From a statistical point of view this idea corresponds with the ideas that a large numbers on n recommendations will result in a lower standard deviation.

The entire analyses during scrutinizing will have our approach as a guiding light. Thus, we will not argue that the findings will have any usage outside of our specific test, or with other assumptions other than the once made by us. So, the analysis will be conducted on our specific data during the specific timeframe and therefore also the result will become limited to the point that it will only apply to our own data.

6.1 Sharpe Ratio – risk adjusted portfolio performance

The significant differences in Sharpe ratios in total are a result of both a higher return and a lower standard deviation in our portfolio. The standard deviation in our portfolio is less than half of the others. The after tax return in our portfolio is also significantly higher than the other investment alternatives. The lower standard deviation can be assigned to the fact that the Swedish mutual funds have more than ten securities. The ten stocks we used are just the foundation of stocks in most of the funds we have used when we benchmarked

our own portfolio. The ten largest possessions in all the Swedish mutual funds are companies that are well established and have a more stable return and a lower relative risk. Thus, the Swedish mutual funds also have small possessions of riskier stocks with which they are trying to outperform the other competitive funds on the market. Secondly we believe that our idea of that many recommendations will result in a higher accuracy when it comes to the decision which stocks to hold have played a major part in the Sharp ratio performance. As we discussed in the theoretical framework and in the method, our approach that the more information gathered about a specific stock the higher will the possibility of success become. This is our approach, though we have in the empirical finding observed that this might well be the case as far as Sharp ratio is concerned. The biggest implication during the whole period was that our portfolio's standard deviation was significant lower than the other alternative.

6.2 Jensen's alpha: Generating abnormal returns or not?

A positive Jensen's alpha indicates that abnormal returns have been attained. When looking at figure 5:3, only two of six investments display positive alphas. The two investments with positive alphas are Nordea and our portfolio. This means that the actual return is higher than the expected pre-calculated return, therefore Nordea and our portfolio both earned abnormal returns during this period. According to the EMH investors should not be able to earn abnormal returns when the market is strong efficient. However, we have found evidence that this is not the case, due to the performance of Nordea and our portfolio and this in fact is evidence of a not fully efficient Swedish market. This is in line with the arguments previously mentioned of Claesson's (1987) findings.

One possible explanation for the generated abnormal returns by our portfolio might be the fact that stock analysts have access to other information than the public and therefore are able to provide more accurate analysis of the company than a private investor without that knowledge. More accurate information provided by the stock analysts makes the public more likely to make the right investment decisions and therefore earn abnormal returns. Also the private investors sometimes do not have the skills to act on the specific information retrieved. Nordea's abnormal return might also be caused by the fact that the fund managers have access to better information. If fund managers have access to other information and the market is semi-strong, abnormal returns are possible to earn. If the market

is weak-form efficient, it is possible to earn abnormal returns by using public available information such as annual reports and press releases. Then it is not necessarily that the stock analysts and the fund managers have access to insider information to earn abnormal returns.

Another explanation is that as long as the deviations from the expected return are somewhat random, the possibility of a semi-strong efficient market is still feasible. To explain this we can say that three investments perform better than the expected return while three investments underperforms, which in turn leads to that the actual market return equals market expected return. As can be seen in figure 5:3, two of the investments outperform the market, one of them significantly. Four of the investments performed worse than the expected. Therefore it is hard to draw any conclusions about the efficiency of the market. The market does not seem to be completely efficient, but not totally inefficient either.

The interpretation of the alpha measure is that when there are positive numbers, the funds have been successful in generating value to their investors. Another explanation for that is that the fund managers have been successful in their management. If the alpha value is positive, the fund manager actually adds value to the fund and its investors. Over the entire period from 2003-2008, just two investments have been able to provide positive Jensen's alpha. The only actively managed mutual fund that was able to beat the index fund over time, when the return was adjusted for the administration fees was Nordea's mutual fund. This is in line with Govan's (2009) findings about actively managed funds. In the Nordea case, the fund managers have been able to actually add value to their investors. Some possible reason for the other negative alphas may be the high administration fees which lower the return. This means that the fund managers job and abilities are not worth the additional cost you have to pay for the management of the fund. The fund managers have failed to find undervalued stocks that generate abnormal returns. The additional cost is only justified in the Nordea case. All other funds have a too low actual return compared to the expected. Even, though the Swedbank fund does not have a positive alpha, it still performs better than the index fund.

6.3 Behavioral finance and Stock recommendations

The criticism from the behavioral finance advocates has been that stock analysts and fund managers tend to follow each other. If one says that a stock is worth to buy, the others will agree as well. This could be a problem when using our method if the “leader” of the herd is wrong. However, since our strategy seems to be quite successful, this contradicts Shefrin’s (2001) findings.

According to Cowles (1933) stock analysts is not able to provide accurate stock recommendations that yields abnormal returns and therefore are not reliable as an investment strategy. In contrast to Cowles (1933), our findings show that stock recommendations do have some value. This is more in line with Stickel’s (1995) and Womack’s (1996) research where they prove that additional value can be obtained by using a strategy based on stock recommendations. The positive outcome of our strategy indicates that the majority of the recommendations during a quarter are in the right direction. This does not mean that all recommendations are correct, but the accumulated knowledge from different stock analysts ends up in an indication of the future performance of the stock that seems to be fairly correct most of the time.

The fact that abnormal returns actually can be realized could have different explanations. One is that investors are affected by psychological factors and therefore fail to act rational. When investors do not act rational, there will occur opportunities to find undervalued stocks.

6.4 Modern portfolio theory

Markowitz theories on how to construct a diversified portfolio, has somewhat been side-stepped by us. Markowitz argues with his theory that the investor’s portfolio should, in order to decrease market risk, be as diversified as possible given that investors are risk-averse. This means that the investor portfolio should contain several different stocks that differ in terms of risk and market industry. We instead have done the opposite and reduced the numbers of stocks in our portfolio which then, according to the theory, would result in an inferior diversified portfolio i.e. higher standard deviation. However, as we have mentioned the standard deviation and the return have not been as much affected of these choices, instead quite the opposite. This due to the fact that our portfolio containing ten different

stocks still is diversified, since the stocks are different companies in different industries. Also worth mentioning is that our stocks which are noted on Large Cap are relatively stable in the long run compared to stocks listed on Small Cap. When having said this and comparing our result with the theories of Markowitz we can conclude that further diversification is not always beneficial, meaning that the benefits from diversification decreases at some point, which also is in line with the research conducted by Evans and Archer (1968).

6.5 Better performance during recession

The performance of our portfolio is significantly better than the other during the years with a negative return (2007-2008) in the stock market overall. One possible explanation is that our portfolio holds fewer and more stable stocks. A portfolio consisting of more stable stocks also has a lower beta value. The lower beta means that the value of the portfolio will decline less than the market during a downturn but also increase less than the market during an increase. As you can see in table 5:5, our portfolio has a beta value of 0,7685. In our case it seems like our portfolio has managed to avoid a big decline during the recession but still earn a decent return during the other years. Therefore the difference in the end is significant. Another possible explanation could be the fact that we are allowed to take short positions, more about that below.

6.6 Implications of short selling

The possibility to take short positions gives us the opportunity to make money when the stock market declines. That is a difference compared to the funds. It is not assessed how much of the return that could be associated with the possibility to short sell, but it is likely that it is a part of the explanation. Due to the fact that we take the small private investor's perspective as our point of view, we choose to compare our portfolio with Swedish mutual funds rather than a hedge fund. A hedge fund is allowed to take short positions while a Swedish mutual fund is not. Because a hedge fund usually has a higher standard deviation and is not that accessible for a private investor, a Swedish mutual is a better benchmark. Our portfolio provides a significantly lower standard deviation compared to the average hedge fund, thus Swedish mutual fund is more accurate as a benchmark. One argument in favor of the short selling is the fact that our portfolio performed the best when the market declines.

6.7 Summary of the analysis

According to Fama (1970), a passive investment strategy like an index fund should be the best investment because there should be impossible to earn abnormal returns when the market is fully efficient. The additional fees taken by the actively managed mutual funds will not be outweighed by a higher return. There should also be impossible to earn abnormal returns in general, by for example using stock recommendations. When analyzing the return over the whole period of six years we have found evidence against Fama's theory. According to our findings, the best investment alternative is to construct a portfolio based on recommendations. That portfolio outperforms the market significantly and that indicates an inefficient or not completely efficient market. An actively managed fund could also be a good alternative if it is managed by a good fund manager that has the skills to find undervalued stocks and therefore provide abnormal returns. However, if the fund manager does not have the ability to provide abnormal returns, an index fund is a better alternative. The main issue for the private investor is to find a mutual fund with a quite low fee and a return better than index. One can see that investing in government bonds is a good alternative, which also are the least risky investment of all.

Some of the fund managers do actually add value while some do not. This does not totally agree with Dahlquist et al (2000) and Engström (2004) research. One explanation that fund managers add value could be the fact that they actually find undervalued stocks because the market is inefficient to some extent. If the fund managers fail to add value, the cost of finding undervalued stocks is higher than the additional benefits or that they just are unable to find any undervalued stocks. When no undervalued stocks exist, the market is strong efficient.

As stated in earlier sections, passive and actively managed funds charge an administration fee. Since the fees are deducted from the return, the funds will have a lower return compared to our portfolio if the return before the fees is the same. That could be a part of the explanation of the higher returns in our portfolio.

As mentioned, our strategy based on accumulated stock recommendations has performed better than the other investment alternatives when looking at the entire period. There could be four different underlying reasons behind the success. The first one is that the ability of the stock analysts is pretty good and they therefore provide accurate recommendations. The second is that the timing of our transactions have been good and therefore been able

to outperform the other alternatives. The third one is as argued above, the fact that we in our portfolio have the opportunity to take short positions. This could be beneficial during a recession and therefore an advantage compared to the other funds. The fourth alternative is that the better performance is caused just by luck. During such a short time period the deviations could possibly be just random.

7 Conclusion

In this paper we have developed a method to effectively facilitate information. This method has its foundation in already existing well known theories and models. Our purpose when developing our method was to make it somewhat user-friendly for the private investors who possess limited knowledge within the financial area. As we discussed in the research questions there are implications on which type of security to invest in. The arguments for either one of our alternatives have been scrutinized and the analysis has shown a possible path for the private investor to take. Now we will answer the research questions in order to effectively state our conclusion and reach the main purpose of the thesis.

Our research questions:

Is the higher administrations fees in mutual funds in Sweden uncalled-for, or do professionals add value for the small-scale investors i.e. generating abnormal returns?

Jensen's alpha indicates if the fund manager has added value to the fund or not. Since only one of the four actively managed funds have a positive alpha for the entire period, the majority of the fund managers do not add value. The additional administration fees for the actively managed fund are not worth the money.

If investment based on collected and accumulated stock recommendations, during the period 2003-2008, is more worth to the small scale investors, than investing in a mutual fund?

In our research both the Sharpe ratio and Jensen's alpha shows that our portfolio performs better than all mutual funds between the years 2003-2008. When comparing between the accumulated stock recommendations method and mutual funds the small scale investor will benefit from using accumulated stock recommendations.

If investment based on collected and accumulated stock-recommendations, during the period 2003-2008, is more worth to the small scale investors, than investing in an index fund?

When comparing the accumulated stock recommendations method to the XACT Index fund during the years 2003-2008 the small scale investor will benefit from using the first mentioned alternative.

Finally as the results show, one should not neglect the investment in government bonds, especially if the time horizon is long. Evidence of this has been showed in the empirical

findings and should be scrutinized when deciding upon investment decisions. However, this alternative was not regarded as a main aspect in this thesis, since our research focused on investments with risk. Further it was not part of our purpose which was:

“To find out whether a strategy based on accumulated stock recommendations are able to outperform mutual funds and/or index funds with similar holdings from 2003-2008.”

If separately investing 100 000 SEK in our benchmarks in the beginning of year 2003, the investment will in the end of 2008 be worth:

Our portfolio	158 570 SEK
Nordea	120 320 SEK
Government bond	118 180 SEK
Swedbank	107 230 SEK
XACT Index	105 810 SEK
SEB	105 410 SEK
SHB	101 730 SEK

We then can conclude that there is under our circumstances a possibility to earn abnormal return over time by following a strategy based on accumulated stock recommendations. On one hand our method is indeed feasible in real life and is as we have concluded more profitable than investing in a Swedish mutual fund or index fund. On the other hand it is difficult to determine which of the mutual fund or index fund that are the best investment. One has to keep in mind that the ability of the fund manager is of great relevance. The fund managers have to be successful in their management and be able to beat index in order to justify the additional cost. Otherwise, an index fund is preferable.

8 Discussion

The whole idea with this paper was to find a user-friendly method with relatively low risk that provides abnormal returns. The question now is whether this has been fulfilled or not. It is hard for us to say if the method is easy to apply for a private investor without financial knowledge.

The main possible issue is the short selling part. We are aware that it could be hard to understand the mechanisms behind short selling. However, we aim to find a method that everyone will be able to use and understand. If we succeed in finding a method the problem will disappear. Thus the short selling per se is not a difficult implication. When having an Internet based trading firm they arrange the difficult part so you as an investor only have to make the decision to take long or short position. An application could also be developed by the trading house such as Avanza or Nordnet. If having an accurate application the re-weighting, and collection and calculation of the data could be done automatically.

One negative effect with our method is that the turnover of stocks and also the realization of return stop us from taking advantage of compound interest. As can be seen in the analysis and the empirical findings, we have realized the profit from the mutual funds annually as well. This is not a real time scenario since people do not sell their fund once a year and then buy it back. Thus the results are still showing significance since if we were supposed to use the pre tax returns the gap would have been equal. Further as we argued tax can be handled in so many ways which would statue for a whole thesis itself. Thus, the usage on asset insurance instruments would have given us the compounded interest effect that a mutual fund receives. Even though the tax could be handled in other ways the results single-handedly show that our approach are feasible for our specific data and assumptions.

Finally, it would be interesting to undertake further research in other markets and countries to see if the same results will occur there. Additionally we also would like to see the methods and theories developed being applied on a wider time horizon in order to obtain a more reliable result.

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10 Appendix

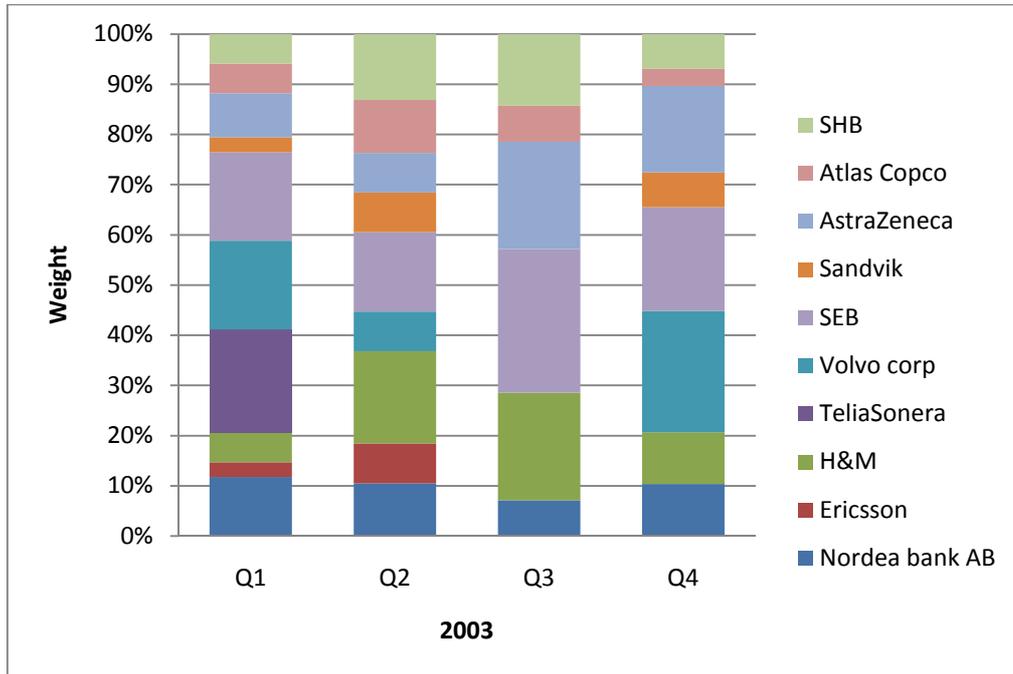


Figure 10:1. Holdings of our portfolio 2003

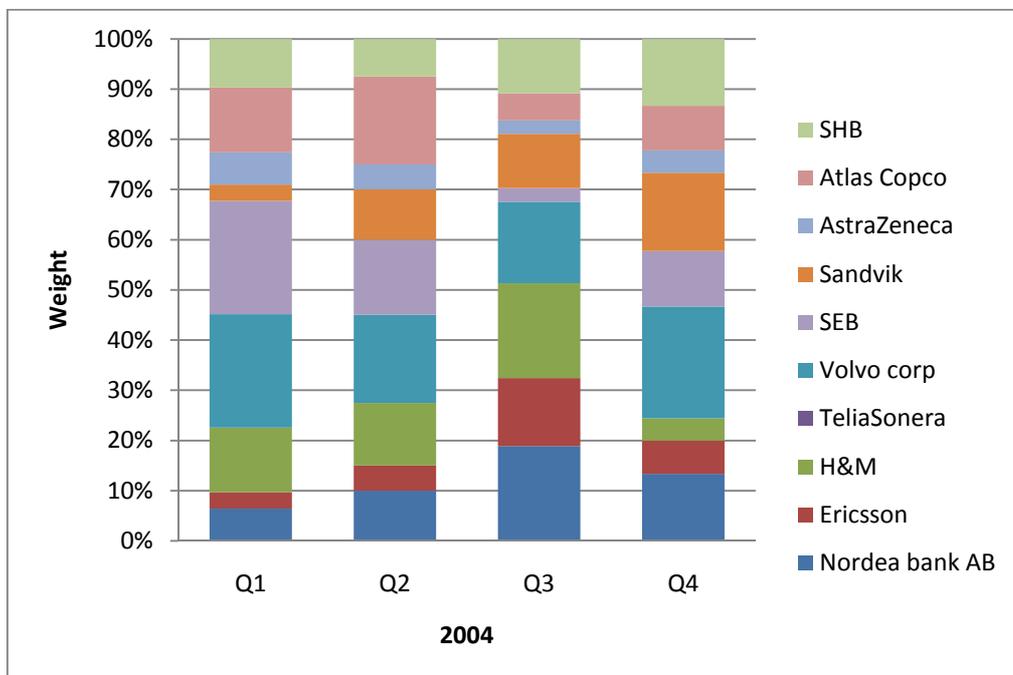


Figure 10:2. Holdings of our portfolio 2004

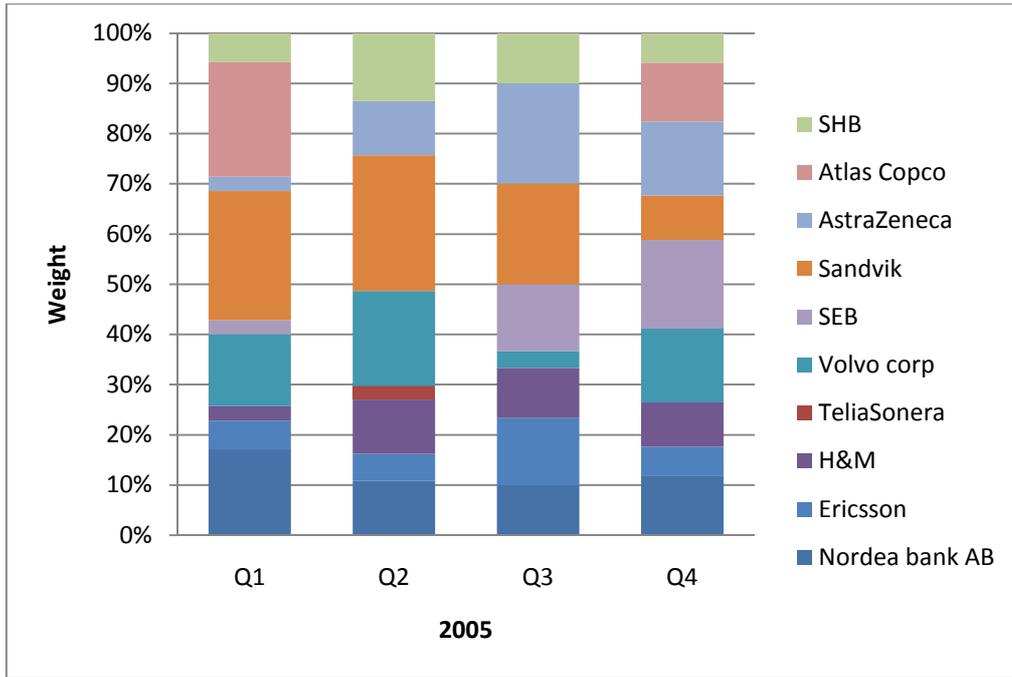


Figure 10:3. Holdings of our portfolio 2005

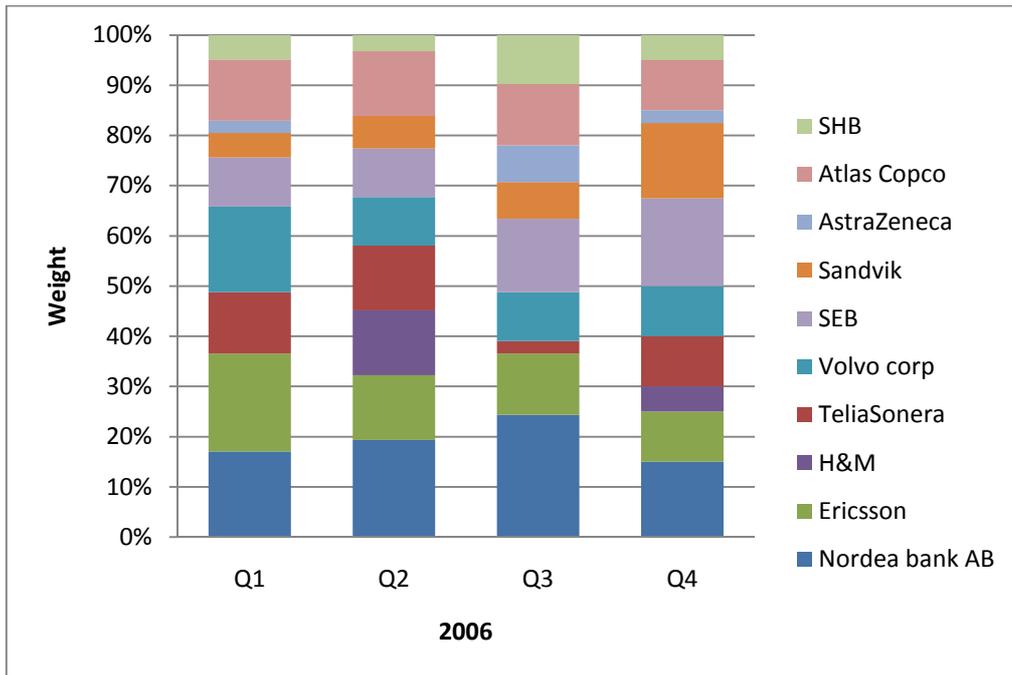


Figure 10:4. Holdings of our portfolio 2006

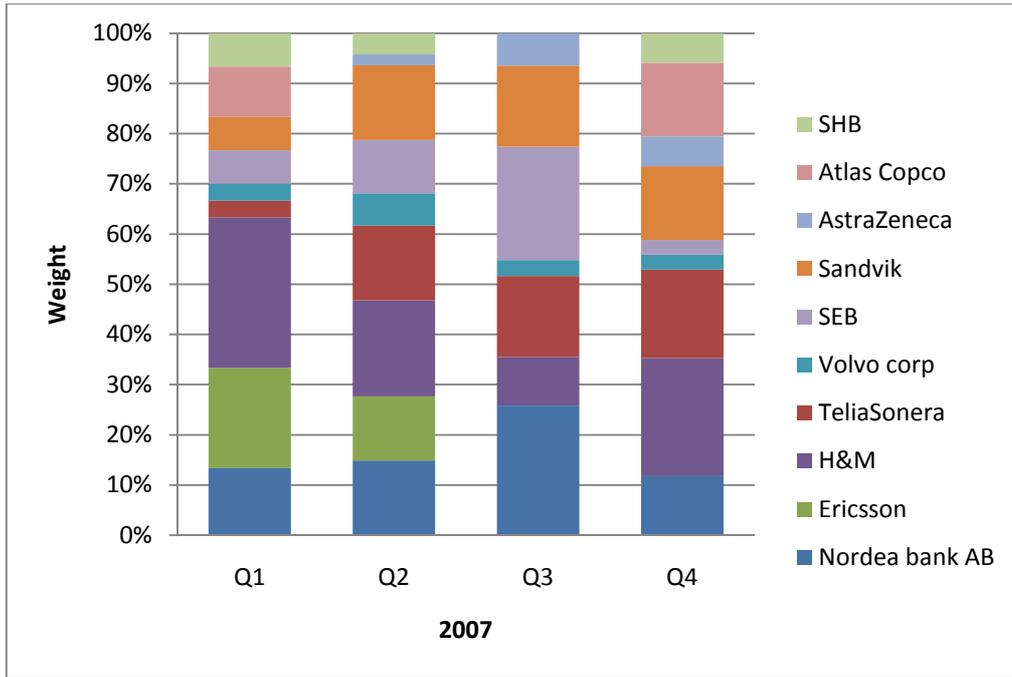


Figure 10:5. Holdings of our portfolio 2007

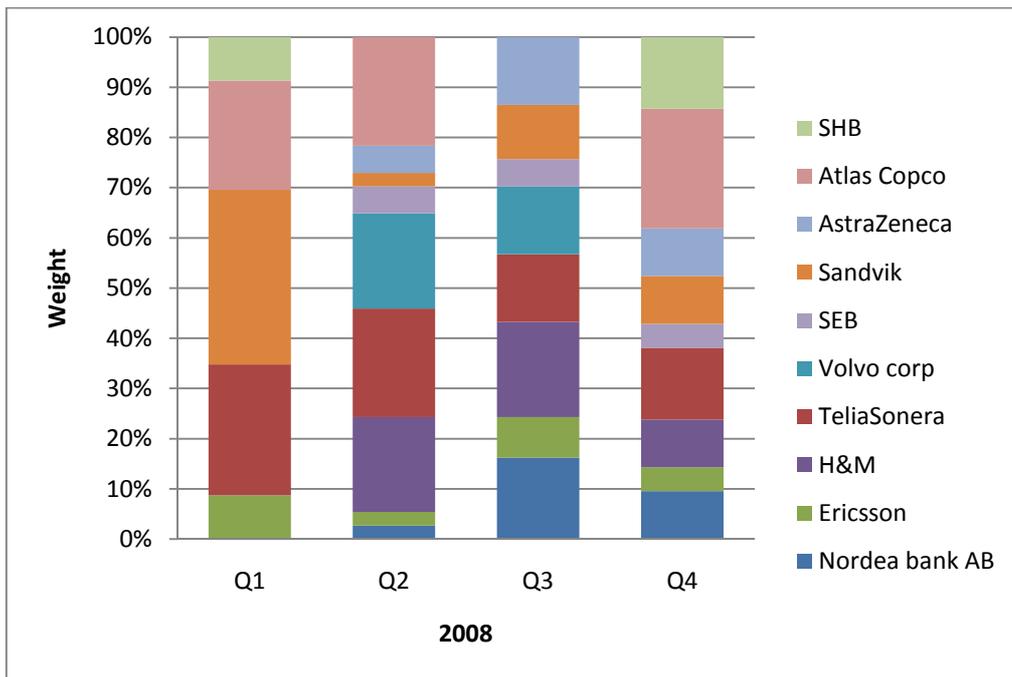


Figure 10:6. Holdings of our portfolio 2008