

Can you beat the market

Performance of European equity funds

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Degree Thesis
Degree Programme in International Business
2011

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EXAMENSARBETE	
Arcada	
Utbildningsprogram:	International Business
Identifikationsnummer:	
Författare:	Kristian Ojanperä
Arbetets namn:	Can you beat the market Performance of European equity funds
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<p>Sammandrag:</p> <p>Syftet med denna studie är att utvärdera hur väl fonder har presterat i jämförelse med marknadsportföljen. Enligt effektiva marknadshypotesen är det inte möjligt att överprestera marknaden på lång sikt. Den effektiva marknadshypotesen stöder investeringar i indexfonder med lägre kostnader. Resultaten av studien kan hjälpa investerare att välja mellan aktivt förvaltade fonder eller passiva indexfonder.</p> <p>Forskningen utfördes genom att utvärdera prestationen av i Finland registrerade Europa-aktiefonder, i jämförelse med STOXX Europa 600-indexet. Utvärderingen gjordes för tre olika tidsperioder 2001-2010, 2006-2010, 2008-2010 samt på årsbasis. Riskjusterad avkastning utvärderades med hjälp av Sharpe – kvoten.</p> <p>Resultatet visade att i alla tre tidsperioder underpresterade de flesta aktivt förvaltade fonder gentemot indexet. Under alla perioder underpresterade ungefär två tredjedelar av fonderna. På en riskjusterad basis var det ännu fler underpresterande fonder. På årsbasis underpresterade största delen av fonderna åtta år av tio. Men det fanns ett antal fonder som kunde överprester indexet i alla tre tidsperioder. Även på årsbasis var det varje år fonder som kunde prestera bättre än index.</p> <p>En absolut sanning om aktiv eller passiv investeringsstrategis överlägsenhet var inte fastställd. Det handlar om investerarens profil, om man vill ha liknande avkastning som marknadsportföljen, och inte tror starkt att en fondförvaltare kan överprestera marknaden i framtiden, bör man investera passivt i ett index. För en investerare som söker avkastning som överstiger marknaden är utmaningen att hitta de bästa fonder och fondförvaltare.</p>	
Nyckelord:	Fond, fondförvaltning, ETF, aktiv förvaltning, passiv förvaltning, Sharpekvoten, index
Sidantal:	40
Språk:	Engelska
Datum för godkännande:	2011

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Degree Programme:	International Business
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Author:	Kristian Ojanperä
Title:	Can you beat the market Performance of European equity funds
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<p>Abstract:</p> <p>The objective of this study is to evaluate how well mutual funds have performed in comparison to the market portfolio, the index. According to the efficient market hypothesis, it should not be possible to outperform the market in the long run. The Efficient market hypothesis support investing in lower cost index funds. The results of the study could help guide individual investors on choosing between actively managed mutual funds, or passive index funds.</p> <p>The research was conducted by evaluating the performance of Finnish registered European equity funds in comparison to the STOXX Europe 600 index. The evaluation was done for three different time periods 2001-2010, 2006-2010, 2008-2010 as well as on a yearly basis. Risk-adjusted return was evaluated using the Sharpe ratio.</p> <p>The results showed that in all three time periods most actively managed funds underperformed the index. For all periods roughly two thirds of the funds underperformed. On a risk adjusted basis there were even more underperforming funds. On a yearly basis, eight years out of ten most funds underperformed. However there were a number of funds that was able to outperform the index in all time periods. Also on a yearly basis there were each year funds that was able to significantly outperform the index.</p> <p>An absolute truth about active or passive investment strategy superiority was not established. It comes down to the investor profile, if one does want similar returns to the market portfolio, and does not feel strongly that a fund manager is able to outperform the market in the future, one should invest passively according to the index. For an investor seeking returns in excess of the market, the challenge is to find the best performing funds and fund managers.</p>	
Keywords:	Mutual fund, fund management, ETF, active investing, passive investing, Sharpe ratio, index
Number of pages:	40
Language:	English
Date of acceptance:	2011

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1 INTRODUCTION

1.1 Background

The Efficient market hypothesis(EMH), developed by Professor Eugene Fama in 1960s, claims that stock market efficiency causes share prices to always include and reflect all relevant information, and therefore the share price represents its true value. Therefore on a risk adjusted basis, it should not be possible to outperform the overall market in the long run through stock selection or market timing. (Fama, 1969)

By the end of year 2010, fund management companies in Finland managed 61.5 billion euro in mutual funds. The popularity and total capital of mutual funds in Finland has grown steadily during 1992-2007, from 0.1 – 66 billion euro. After a significant drop during the financial crisis in 2007, the assets under management continued to grow during 2008-2010, from 41.3 – 61.5 billion euro.

(Federation of Finnish Financial Services, 2011)

Most actively managed mutual funds aims to earn return that excess the return of their benchmark, which represents the general market return. The alternative for active managed funds is passive managed funds in form of index funds or ETFs (exchange traded fund). An ETF replicates an index and tries to track it as close as possible. (Nikkinen et al. 2002, p20)

The biggest weakness of active portfolio management is considered to be its cost-effectiveness. Market outlook and analysis composing generates more costs compared to passive portfolio management. In addition, allocation decisions made based on the analyses require trades to be made which again generates more costs. Actively managed funds need to perform very well to be able to continuously cover these expenses in addition to outperforming the index. If these conditions are satisfied, an actively managed strategy can be reasoned, despite the higher costs. (Elton et al 2003, 680-681.)

1.2 Research question

The purpose of the research is to compare the performance of actively managed mutual funds to the return of the market index, to help decide if a retail investor should prefer investing in actively managed funds or passive index funds. This research is designed to evaluate if the portfolio managers of actively managed mutual funds has been able to continuously outperform the index during the last 10 years (2001-2010).

The research will be conducted by comparing the performance and risk-adjusted performance of mutual funds investing in the European stock market to the market index. The market index used for this study is the STOXX Europe 600 Net Return Index, which will represent the general market return.

The research is narrowed to research performance of equity mutual funds and ETF's registered in Finland which invests in European stocks. The research will not include mutual funds that invests in a single European country, or mutual funds that are sector or style specific.

1.3 Aim of the study

The research will evaluate how well different actively managed mutual funds perform in relation to the market index. Results will show how many from the sample, if any of the mutual funds have been able to continuously create better returns than the index. As the risk adjusted performance also is examined, the results will show how the level of risk taken by the fund managers has affected the return of the mutual fund portfolio. The research will also review how the management fees of the funds impact the performance.

The research is designed to give some information on how the efficient market hypothesis correlate with the European stock market in regards of investing by using mutual funds or ETF's, which are the main instruments that allow retail investors access to in-

vest in the market. The results of the research can be useful for individual Finnish investors when selecting a specific instrument.

2 INVESTMENT FUNDS

The first mutual funds in Finland were founded in 1987, but they started gaining more significant popularity in 1990's after the recession. By the end of the year 2010 there was 35 registered fund management companies, which together manage 61,5 billion EUR in mutual funds. 3,8 MEUR was invested in European equity funds. A total of 490 mutual funds are registered in Finland. An estimate of 800.000 Finnish households own mutual fund shares, with a total of 2,7 million shareholders. The mutual fund industry in Finland is relatively small and concentrated compared to international standards. The 5 largest fund management companies hold 75% of the total fund capital. The three largest banks in Finland, Nordea, OP and Sampo hold as much as 65% of the total capital. (Federation of Finnish Financial Services, 2011)

Table 1. 5 Largest fund management companies in Finland (31.12.2010)

5 largest fund management companies in Finland

31.12.2010	Assets under management MEUR	Market share	Shareholders
Nordea Rahastoyhtiö Suomi Oy	16 003,56	26,0 %	1 001 043
OP-Rahastoyhtiö Oy	14 417,13	23,4 %	554 845
Sampo Rahastoyhtiö Oy	9 060,73	14,7 %	358 204
SEB Gyllenberg Rahastoyhtiö Oy	3 568,07	5,8 %	76 159
Evli-Rahastoyhtiö Oy	3 064,10	5,0 %	17 497

Investment funds are managed by fund management companies, which are required a license by the Finnish Financial Supervisory Authority to practice business. The focus in this thesis will be on equity funds. An equity funds mainly invests in equities, or stocks. Funds may also use derivatives for cash management or portfolio protection purposes. Equity funds can be divided into different styles, depending on their geo-

graphical focus, company sector or size (small-,mid- or large-cap).There are also other classes of mutual funds, such as bond-, money market- and hedge funds, but only equity funds will be covered and are relevant for this thesis. (Puttonen & Repo 2007, 52-65.)

The assets of a mutual fund are owned by the shareholders of the fund, not by the fund management company. Therefore the investors' investment is safe, in case se the fund management company would go bankrupt. The minimum asset requirement of a mutual fund is 2 million euro, and it needs to have at least 50 shareholders. (Roine & Savikko 2009, 30-31.)

One of the most notable advantages with investment funds is diversification. The laws regarding Finnish investment funds state that not more than 10% of the total value of the fund can be invested in a single instrument or company. This enables the fund portfolio to be well diversified and reduces the company specific risk. (Puttonen & Repo 2007, 35.)

2.1 Active fund managing

Investment funds can be categorized into two groups according to their investment activity, actively managed funds and passively managed funds. An actively managed equity funds seeks to find attractively priced stocks with the help of company and market analysis. These type of funds aims to outperform their benchmark through active research and trading. (Möttölä M. 2008, 107.)

An actively managed fund is to be preferred if one believes the market is not effective, and that there can be found over- or underpriced stocks in the market. The fund managers continuously follow the markets and the portfolio, and makes changes according to their view on the market and stocks. Investors buy shares in an actively managed fund in hope that the fund manager's expertise enables the fund to outperform the market. Active funds tend to have higher risk than passive funds, which mean that higher returns are also expected. Active funds also involve higher fees due to the required research, analysis and more frequent trading. (Gruber J.M. 1996, 783-810)

Two main types of analysis used in active fund managing are technical and fundamental analysis. Technical analysis involves trying to discover patterns and trends in equity's historical price development. Supporters of technical analysis believes historical price and trading volume of an equity can be used to estimate future price fluctuations, and by analyzing these you are able to create excess returns. To identify trends, graphs and statistical techniques are used. (Martikainen & Martikainen 2002, 134.)

The idea behind technical analysis is that stock markets have the tendency to develop according to reoccurring patterns, created by market psychology. Technical analysis has received a lot of criticism and the use of it divides investors' opinions. The main reason for this is that the usefulness has not been scientifically proved. (Kallunki, Martikainen, Niemelä 2007, 213.)

Fundamental analysis is trying to evaluate a stocks true value based on economic and financial data regarding the company. Such information as dividends, cash flows, company management and other key figures publicly available or reported by the company. By evaluating what a stocks true value is one can evaluate if the market has over- or underpriced the stock, and take appropriate actions to either buy or sell the stock. (Kallunki, martikainen, Niemelä, 2007. 148-160)

2.2 Passive fund managing

The investment policy of passive portfolio management is the opposite of active managing, as the portfolio allocation is rarely changed. This results in a low portfolio turnover rate. Index investing is the most common strategy for funds practicing passive portfolio management. As the name states, in index investing the portfolio manager constitutes the portfolio according to an index. The idea of passive investing or index investing is based on the efficient market hypothesis, the belief that one cannot outperform the market through active portfolio management. (Erola 2009, 65-67.)

There are two main types of instruments available for index investing, index funds and Exchange Traded Funds (ETF).

Index funds are, like other mutual funds, managed by a fund management company. An investor subscribes and redeems (buys and sells) fund shares from the fund management company. The fund manager of an index fund purchases stocks according to an index. (Puttonen & Repo 2007, 67)

Exchange Traded Funds (ETF) is from an investor's point of view somewhere between mutual funds and stocks. ETF shares are bought and sold through a broker over a stock exchange, in the same way as stocks are. Where mutual fund shares can only be subscribed or redeemed at the end of the day from the fund management company, ETF shared can be bought or sold throughout the day, as long as the exchange is open. The counterparty for an ETF trade is another investor. (Ferri 2009, 23-39.)

The main advantage over mutual funds considered with ETF's is the cost effectiveness. As there is no analyzing markets or companies, resources are not needed to spend on this. Also as the transactions the fund makes tends to be fewer than in an active fund, transaction costs are lower. The lower costs result in that the management fee charged by an ETF is much lower than that of an active fund. (Elton et al. 2003, 680-681.)

The aim of an ETF is to track an index's risk and return as close as possible. However the closer the ETF tries to match the market portfolio, the more transactions are required as the index usually consists of a large number of stocks. The more transactions, the more transaction fees which lead to a growing tracking error, the difference between the performance of the fund in relation to the index. It should be noted that even though an ETF closely tracks an index, due to the management fees, in practice an ETF always at least slightly underperforms the index. (Elton et al. 2003, 677-688.)

Samuel Lee from Morningstar discusses in the article *The Hidden Costs of Indexing* about a phenomena called index turnover cost. This is something index investors suffer from. When there are changes to an index, a stock is added or removed from the index, index tracking funds are obliged to buy or sell the stock as they must have the same holdings as the index. When changes to an index are announced traders and hedge funds rush to take benefit from the event. As an example, if a stock is added to the index this means that all the funds tracking the index will have to buy it, which will raise the price of the stock. Between the announcement of the index change and the inclusion date, traders buy the stock as they know the price will rise, as all the index funds needs to buy it. When the index funds starts buying the stock and the price rises, the traders who bought the stock can now sell it at the higher level at a profit. Index funds are forced to buy the stock at a premium, which is the mentioned hidden cost. Professor Antti Petäjistö from New York University estimated that from 1990 to 2005 the annual index cost for the small-cap index, Russell 2000, was at least 0.38%-0.77% and for the S&P 500 at least 0.21%-0.28%. (Morningstar, 2010)

2.3 Efficient markets

The debate between active and passive fund management has strong connection to the efficient market hypothesis (EMH), and if information possessed by a fund manager can create added value.

The EMH claims that the prices of stocks reflect all available information. In an effective market all actors act rationally according to the available information and because of this there are no mispriced stocks. Temporary mispricing may occur if all actors do not act rationally, but this is corrected instantly by the market. Stotz (2005) claims that the main reason for markets being efficient is the availability of information on companies listed on a stock exchange.

Another matter supporting the efficient markets is the ‘self-destructing mechanism’ of excessive returns. If there are temporary opportunities for excessive returns in the market due to irrational behavior, they are soon nullified as investors try to gain from the opportunity. As an example if a stock is underpriced investors rush to buy it, until the price of the stock reach the level that the efficient market values it at. Most anomalies in stock prices are usually nullified once they are discovered. As soon as some research discovery of any anomalies is published, investors will try to benefit from it, which in turn removes the possibility to gain excess returns when trying to benefit from an anomaly. An example for this is the size-anomaly, which implied that small-cap stocks outperform large-cap stocks. When this was published in academic articles, investors started to buy more small-cap stocks to benefit from the anomaly. This resulted in that prices of small-cap stocks increased to such levels that they could not increase so much anymore that they would keep outperforming large-cap stocks. And so the opportunity for excessive returns and the size-anomaly vanished. (Ball et al. 2002)

2.4 Fees

Fund management companies strive to run a profitable business, and mutual funds are their products. The turnover is generated from different fees charged from the investors

investing in the funds. These fees are subscription, redemption and management fees. Subscription and redemption fees are charged when an investor buys or sells fund shares, these fees are usually a certain percentage of the sum moving in or out from the fund. The fee percentages vary between fund management companies and funds. (Puttonen & Repo 2007, 57). For most funds studied in this thesis subscription and redemption fees is 1% each, and generally between 0% - 2%.

Management fees are not as clearly visible for the investor as the subscription and redemption fees. The management fee is charged every day the fund is open, usually every business day, and the charged management fee is deducted from the daily value of the fund shares. So the daily fund price, or Net Asset Value (NAV), published by the fund management company is net of management fees. The maximum management fee, which is reported on an annual basis, is stated in the fund rules. The management fee may also be lower than the stated maximum, so it may vary from year to year. Management fees may vary a lot between fund management companies and funds. (Puttonen & Repo 2007, 57). For the actively managed funds involved in this study annual management fee varies between 0,6% - 3,68% per annum.

Also ETFs charge management fees. Due to the passive investment strategy the management fees tend to be significantly lesser than the ones of mutual funds. The management ETFs vary from around 0,07% for ETFs tracking larger common indices such as S&P 500, to around 0,75% for more rare and special indices such as emerging markets. (Morningstar 2011.)

ETFs do not charge subscription or redemption fees, as the trades are not made with the fund management company. However as the trades are made over a stock exchange, transaction fees are charged by the broker who has made the ETF trade, buy or sell transaction. Transaction fees range from around 0,06% – 0,2% per transaction. (Nordnet 2011.)

Another cost related to trading ETF's or other instruments over a stock exchange is the bid ask spread. The bid ask spread is the difference between the market price to buy an ETF and the market price to sell an ETF. The larger and more liquid the ETF is, the

smaller the bid ask spread usually is. A 30-day average bid ask spread for Vanguard ETF's range from 0,01% - 0,34% (Vanguard, 2011.)

2.5 Index

In finance indices are used to represent the general development of a market or a specific stock exchange. These indices are calculated daily for stocks, bonds and different commodities which are traded in different markets. Each country's stock exchange has its own index which represents that stock exchanges development. Such indices like the OMX Helsinki are familiar from financial news. In addition to stock exchange specific indices, there are companies that provide a wide range of international indices for different markets and sectors. Companies providing such indices are Dow Jones, Morgan Stanley Capital International (MSCI), Standard & Poors and STOXX.

For this thesis the benchmark index to which the performance of the funds is compared to is STOXX 600 Europe Net Return index. With a fixed number of 600 components(stocks), the STOXX Europe 600 Index represents large, mid and small capitalization companies across 18 countries of the European region: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. The STOXX Europe 600 Net return index has been calculated daily since 31.12.1991. The index composition is reviewed four times per year. (STOXX, 2011)

There are usually two types of calculating the return of an index, price and net return. A price index accounts only for the changes in price for the stocks in the index. A net return index takes also into account the dividends of the stocks. (Opi Osakkeet 2007, 31.)

A net return index always performs better than a price index as it does add the profits from dividends. The net return index of the STOXX Europe 600 index was chose to use for this thesis, as it better represents the return of the market.

2.6 Development of invested net assets

The net invested assets in mutual funds registered in Finland and also the total number of mutual funds registered in the whole of Europe has during the past decade increased almost every year. With the exception of one year 2008, when mutual funds lost a significant amount of assets. This was due to declining value in invested assets as well as significant outflows from mutual funds during the financial crisis.

In the year 2000 the net assets invested in ETFs listed in Europe was relatively small at 0,8 billion EUR. However, the popularity of ETFs has continued to grow, and the net assets invested have increased each year for the last 10 years.

The yearly changes in net assets for both Finnish and the total European registered mutual funds as well as European listed ETFs can be found in table 2 below.

Table 2. Development of Net Assets

Year	Europe Listed ETFs Billion EUR	Change from previous year	Finnish reg. Mutual Funds Billion EUR	Change from previous year	European reg. Mutual funds Billion EUR	Change from previous year
2000	0,8		13,5			
2001	6,4	740 %	14,5	7 %		
2002	11,3	78 %	15,7	8 %		
2003	17,7	56 %	22,1	41 %	3 704,6	
2004	27,3	55 %	31,1	41 %	5 341,9	44 %
2005	44,2	62 %	44,7	44 %	6 565,8	23 %
2006	71,7	62 %	60,9	36 %	7 573,9	15 %
2007	93,4	30 %	66,0	8 %	7 925,4	5 %
2008	97,2	4 %	41,3	-37 %	6 141,7	-23 %
2009	162,8	67 %	54,3	31 %	7 039,2	15 %
2010	191,3	18 %	61,5	13 %	7 728,0	10 %

At the end of year 2010 the net assets in European ETFs was relatively small compared to European mutual funds, at 191 billion EUR compared to 7 728 billion EUR. The rela-

tive development of invested assets in ETFs has however been significantly higher during the last 7 years, 2003 - 2010. This would imply that index investing has gained popularity. The relative development of net assets is presented in the graph below, Figure 1.

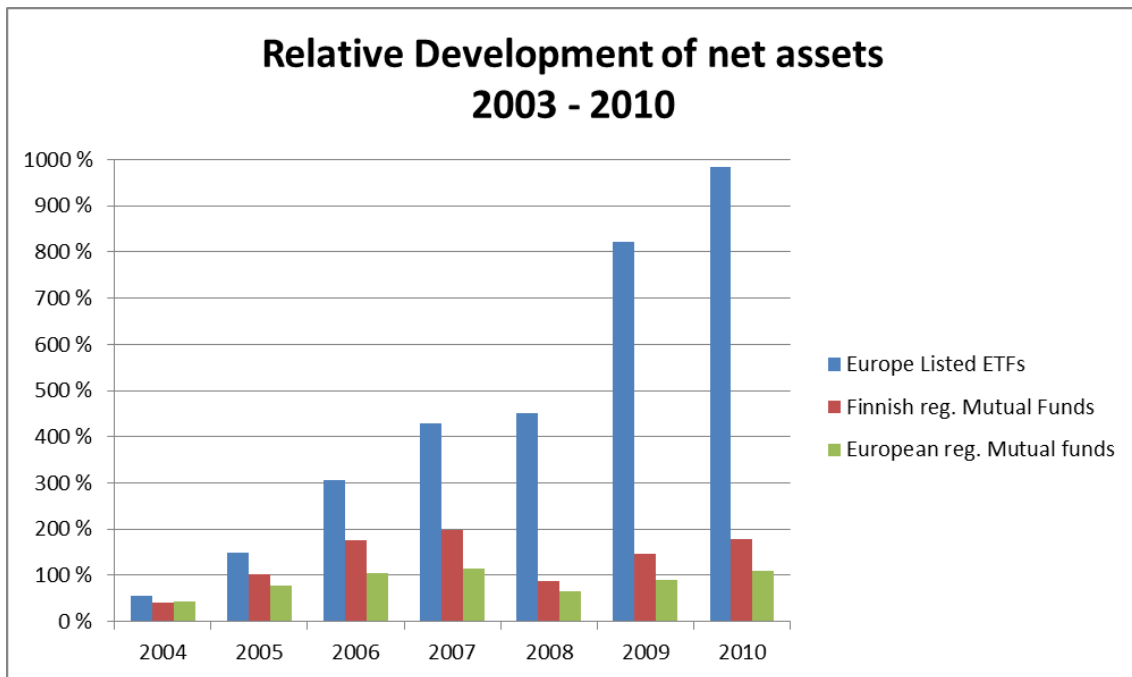


Figure 1. Relative development of net assets 2003 - 2010

3 RISK AND RETURN

3.1 Return of an investment

The performance, or return, of an investment is the change in its value, and all underlying assets, during a specific period of time. The performance is usually expressed as a percentage. The performance figures reported by fund management companies are nominal returns. Nominal returns are returns from which inflation, the decrease of the value of money, is not deducted. Returns where inflation is deducted from the return are called real rate of return. When publishing the performance of a fund the management fees have been deducted from the figure. (Puttonen & Repo 2007, 81-83.)

3.2 Risk and Sharpe ratio

In the financial markets risk and return go hand in hand. Risk is uncertainty of future returns. The higher the risk, the higher the required return is for investors. One of the key figures used to describe risk is volatility. Volatility describes the fluctuation in the value of an investment. The higher the volatility, the higher the risk is said to be. This is based on the principal that for an investor, high fluctuation in the assets value creates uncertainty, i.e. risk. Volatility is calculated as the standard deviation of the price of an asset during a period of time, and the volatility is stated as a percentage. (Puttonen & Repo 2007, 84-88.)

To help compare investment instruments, the risk adjusted return can be calculated. One of the key figures to measure risk adjusted return, and the one used in this research, is the Sharpe ratio. It calculates the portfolio's excess return in relation to the portfolio volatility, to determine reward per unit of risk. The higher the Sharpe ratio, the better the portfolio has performed in relation to its risk. A negative Sharpe ratio indicates that a

portfolio has performed worse than the risk-free return. 3 months Euribor rate is usually used as the risk-free return when calculating the Sharpe ratio. The Sharpe ratio is calculated with the formula below. (Kallunki, Martikainen, Niemelä 2007, 279)

$$\text{Sharpe Ratio} = \frac{\text{Portfolio return} - \text{Risk-free return}}{\text{Portfolio volatility}}$$

There are also other aspects to risk involved when investing. In the modern portfolio theory total risk is divided into two classes. The division is based on the nature of the risk, if the risk is a general risk concerning all assets, such as market- or interest rate risk, or a risk concerning a specific asset, such as a company specific risk. In mutual- and index funds the company risk is almost fully ruled out as these portfolios are well diversified. However the market risk, also called systematic risk, is still relevant as this risk cannot be diversified away. (Nikkinen et al 2008,30-31)

4 PREVIOUS RESEARCH

The investment firm First Quadrant made a study about how well actively managed funds in the US performed against the benchmark, S&P 500 index, compared to the index fund Vanguard 500, which replicates the S&P 500 index. The results (table 3) showed that most funds lost to the index in all time periods (10, 15 and 20 years). The result also indicated that the funds that managed to beat the index did so by lower margin than the margin of those who lost to the index. (First Quadrant, 2000.)

Table 3. Firstquadrant: How Many Funds Beat the Vanguard 500 Index?

Time period	Ahead of Vanguard 500		Behind of Vanguard 500	
	Number of Funds	Margin Above Vanguard 500	Number of Funds	Margin Above Vanguard 500
20 years 1979-1998	36 (22%)	1,35 %	126 (78%)	-2,64 %
15 years 1984-1998	11 (5%)	1,10 %	192 (95%)	-3,76 %
10years 1989-1998	50 (14%)	1,90 %	305 (86%)	-3,87 %

Barras, Scaillet and Wermers (2005) studied 2076 actively managed US mutual funds during the time period of 1975-2006. According to the results only 9,6% of the fund managers was able to choose stocks that outperformed the index. They discovered that the general long term underperformance of the funds was mostly due to a number of funds that continuously underperformed. Most of the funds outperformed or returned at least the same as the index.

A risk adjusted performance study of the 20 largest equity funds in the US during the time period 1995-2004 was made by Arugaslan, Edwards and Samant (2007). The results of the research indicated that 17 of the 20 funds studied, according to the risk adjusted measurement used, outperformed the S&P 500 index. Only 3 funds, of which one was the Vanguard 500, underperformed the index.

Bers (1998) conducted a study of 101 international funds during the time period of 1990-1996 to evaluate the stability of returns. The risk adjusted measurements indicate that most of the funds that had performed well in the past did so also later. More than half of the funds outperformed the MSCI World index.

141 German funds were studied with focus on the fund's investment styles. The study was made during the time period of 1990-2005, by using models developed by Jensen and Carhart. The results showed that on risk adjusted basis actively managed funds underperform the market by 1,3%-1,9% per annum. The only investment style that was able to outperform was styles that invested in small-cap stocks. Positive market timing did not contribute to better performance. (Stotz, 2006)

Finnish fund performance during 1991-1995 was studied by Liljeblon & Löflund (1995). The time period was divided in three sub-periods and results indicated that very rarely were the funds able to perform better than the market and that higher fund fees correlated strongly with poorer performance. Only one fixed income fund out of all the studied funds was able to outperform its benchmark.

5 PERFORMANCE OF EUROPEAN FUNDS

The criteria for the funds selected for this research are the following:

- The fund must be registered in Finland and reported by Investment Research Finland (Suomen Sijoitustutkimus)
- The fund must be registered and active as per 31.12.2010
- The fund must be classified as an European equity fund by Investment Research Finland
- The Morningstar category of the fund must be one of the European equity fund categories
- Funds investing only in a single European country are excluded (such as funds investing only in Germany or Italy etc.)
- Funds investing only in small- or small- and mid-cap stocks are excluded
- Performance or price history must be available from Investment Research Finland or Bloomberg
- The fund must have history of at least 1 year, launch date must be 1.1.2010 or earlier

The Exchange traded funds (ETF) selected for this research are the following:

- Amundi ETF MSCI Europe
- iShares MSCI Europe
- db x-trackers - MSCI Europe TRN Index ETF
- iShares Stoxx 600 DE
- Vanguard European ETF
- ETFlab MSCI Europe
- Lyxor ETF MSCI Europe
- SPDR MSCI Europe ETF

These criteria resulted in a total of 64 actively managed funds which were evaluated. 25 funds with a 10 year history, 44 funds with a 5 year history and 59 funds with a 3 year history.

Subscription and redemption fees for mutual funds and transaction fees for ETFs were excluded from the calculations. Only the fund's performance, including management fee, was relevant in the calculation.

Investment research Finland (Suomen Sijoitustutkimus) is an objective provider of investment performance measurement services. It reports monthly performance and other key figures for mutual funds registered in Finland. These figures are not collectively publicly available elsewhere. (Rahastoraportti, June 2008)

5.1 10 years 2001 - 2010

Table 4. 10 years 2001-2010. Summary

10 years 2001-2010	
Active funds	
Funds	25
Outperforming funds	8
%	32 %
Mean outperformance p.a.	-0,84 %
Risk adjusted outperf (sharpe)	7
%	28 %

Close to two thirds (32%) of the actively managed funds underperformed the Stoxx 600 Europe index. 8 funds was able to outperform the index on the 10-year period. Average yearly underperformance of all actively managed funds was -0,84%. On a risk adjusted basis, the outperformance was lower with 7 out of 25 fund outperformed the index. Only one fund had a positive Sharpe ratio, which means all other funds and also the index gave poorer returns than the risk-free return, which in this calculation was the 3-months Euribor interest rate.

The two index funds gave similar returns, both underperforming the index on a yearly average by -0,4%. None of the ETFs were active for the 10-year period

The difference between the best and the worst performing funds is significant. If at the beginning of year 2001 one would have invested 1000 EUR in one of the funds, the value at the end of 2010 would be for Nordea 1 – European Value Fund: 1483,20 EUR (+483,20), compared to Handelsbanken Eurooppa Aggressiivinen A: 603,04 EUR (-396,96). The index return would have been 994,83EUR.

Table 5. 10 years 2001-2010. Funds

Fund name	Description	10 year cumulative return	10 year outperformance p.a.	10 year Sharpe
Nordea 1 - European Value Fund	Fund	48,3%	4,9%	1,12
Carnegie Eurooppa Osake	Fund	13,4%	1,4%	-1,11
Aktia Eurooppa B	Fund	8,4%	0,9%	-1,26
Danske Invest Europe	Fund	5,7%	0,6%	-1,32
Arvo Euro Value K	Fund	4,7%	0,5%	-1,44
Nordea Eurooppa Plus K	Fund	0,7%	0,1%	-1,63
FIM Unioni	Fund	0,3%	0,1%	-1,39
GAM Star European Equity EUR Acc	Fund	0,1%	0,1%	-1,80
STXE 600 € NRt	Index	-0,5%		-1,64
Danske Invest Eurooppa Osake K	Fund	-2,4%	-0,2%	-1,67
Invesco Pan European Structured Equity A	Fund	-3,0%	-0,3%	-1,91
SEB Gyllenberg European Index B	Index fund	-4,1%	-0,4%	-1,85
Pictet-Europe Index-P EUR	Index fund	-4,9%	-0,4%	-1,85
SEB Ethical Europe Fund	Fund	-8,1%	-0,8%	-2,04
ODIN Europa	Fund	-9,4%	-0,9%	-1,95
SEB Europe Chance√Risk Fund	Fund	-10,7%	-1,0%	-2,13
JPM Europe Select Equity A (acc) - EUR	Fund	-11,6%	-1,1%	-2,22
SEB Gyllenberg European Equity Value B	Fund	-17,1%	-1,7%	-2,55
Nordea Pro Eurooppa K	Fund	-17,1%	-1,7%	-2,54
Nordea Eurooppa K	Fund	-18,8%	-1,8%	-2,57
SEB Europe Fund C	Fund	-19,0%	-1,8%	-2,51
Evli Europe B	Fund	-19,5%	-1,9%	-2,46
Nordea 1 - European Equity	Fund	-20,1%	-2,0%	-2,62
Pictet-European Equity Selection-P EUR	Fund	-20,7%	-2,0%	-2,56
Alfred Berg Europe B	Fund	-22,6%	-2,2%	-2,72
Dexia Sustainable Europe C	Fund	-26,4%	-2,6%	-2,89
AB Eurozone Strategic Value Portfolio	Fund	-38,4%	-3,8%	-3,26
Handelsbanken Eurooppa Aggressiivinen A	Fund	-39,7%	-3,9%	-3,43

5.2 5 years 2006 - 2010

Table 6. 5 years 2006-2010. Summary

5 years 2006-2010	
Active funds	
Funds	44
Outperforming funds	17
%	39 %
Mean outperformance p.a.	-0,87 %
Risk adjusted outperf (sharpe)	17
%	39 %

39% or 17 out of a total of 44 actively managed funds outperformed the index during the 5 year period 2006 – 2010. This is a similar proportion of outperforming funds compared to the 10-year period. Average yearly underperformance for all the actively managed funds was -0,87%, which is almost the same as for the 10 year period.

Same funds that outperformed the index in absolute terms also outperformed the index on a risk-adjusted basis.

The index funds all underperformed the index. Yearly average underperformances was between -0,3% - -1,5%.

Two out of three ETFs slightly outperformed the index, all of them having similar returns as the index.

If one would have invested 1000 EUR in the beginning of the period in the best and worst performing funds the value at the end of the period would have been the following. Danske Invest Europe 1323,94 EUR (+323,94) compared to OP-Eurooppa Arvo A 726,07 EUR (-273,93). The index return was almost flat at 1027,45 EUR.

Table 7. 5 years 2006-2010. Funds

Fund name	Description	5 year cumulative return	5 year outperformance p.a.	5 year Sharpe
Danske Invest Europe	Fund	32,4%	5,9%	1,32
Invesco Pan European Structured Equity A	Fund	27,0%	4,8%	1,35
Tapiola Eurooppa	Fund	26,0%	4,6%	1,27
Aventum Eurooppa Osake K	Fund	18,5%	3,1%	0,80
OP-Eurooppa Osake A	Fund	15,4%	2,5%	0,54
Nordea Eurooppa Plus K	Fund	14,0%	2,2%	0,53
Nordea 1 - European Equity	Fund	10,8%	1,6%	0,37
Ålandsbanken Europe Value B	Fund	10,3%	1,5%	0,35
Alfred Berg Europe B	Fund	9,4%	1,3%	0,32
Nordea 1 - European Value Fund	Fund	9,3%	1,3%	0,36
JPM Europe Strategic Growth A acc EUR	Fund	5,8%	0,6%	0,15
Franklin Mutual European Fund A Acc EUR	Fund	5,8%	0,6%	0,18
Danske Invest Eurooppa Osake K	Fund	5,7%	0,6%	0,13
JPM Europe Strategic Dividend A dist EUR	Fund	5,3%	0,5%	0,13
T. Rowe Price SICAV - European Structured Research Equity	Fund	5,1%	0,5%	0,11
ISHARES STOXX 600 DE	ETF	4,2%	0,3%	0,05
POP Eurooppa	Fund	3,9%	0,2%	0,05
Aktia Eurooppa B	Fund	3,7%	0,2%	0,04
VANGUARD MSCI EUROPEAN ETF	ETF	2,9%	0,0%	0,00
STXE 600 € NRT	Index	2,7%		-0,01
GAM Star European Equity EUR Acc	Fund	1,5%	-0,3%	-0,07
Pictet-European Index-P EUR	Index Fund	1,3%	-0,3%	-0,08
SEB Gyllenberg European Index B	Index Fund	0,3%	-0,5%	-0,12
Danske Invest Europe Enhanced Index K	Index Fund	0,2%	-0,5%	-0,12
SPDR MSCI EUROPE ETF	ETF	0,2%	-0,5%	-0,13
ICECAPITAL European Stock Index B	Index Fund	-0,2%	-0,6%	-0,14
JPM Europe Select Equity A (acc) - EUR	Fund	-1,8%	-0,9%	-0,23
Carnegie Eurooppa Osake	Fund	-2,2%	-1,0%	-0,27
Nordea Pro Eurooppa K	Fund	-2,8%	-1,1%	-0,28
Handelsbanken Eurooppa Indeks A	Index Fund	-3,8%	-1,3%	-0,32
ODIN Europa	Fund	-4,0%	-1,4%	-0,29
FIM Unioni	Fund	-4,5%	-1,5%	-0,29
Evli Europe Quant Index B	Index Fund	-4,6%	-1,5%	-0,35
Arvo Euro Value K	Fund	-4,9%	-1,5%	-0,41
Handelsbanken Eurooppa Aggressiivinen A	Fund	-5,0%	-1,6%	-0,36
Dexia Quant - Equities Europe I	Fund	-5,6%	-1,7%	-0,40
Nordea Eurooppa K	Fund	-6,7%	-1,9%	-0,45
Pictet-European Sust Eq-P EUR	Fund	-7,1%	-2,0%	-0,48
Evli Europe B	Fund	-8,2%	-2,2%	-0,52
SEB Europe Fund C	Fund	-8,6%	-2,3%	-0,54
Pictet-European Equity Selection-P EUR	Fund	-9,5%	-2,5%	-0,56
JPM Europe Dynamic Mega Cap A acc EUR	Fund	-9,5%	-2,5%	-0,62
AB Eurozone Strategic Value Portfolio	Fund	-9,9%	-2,5%	-0,55
SEB Ethical Europe Fund	Fund	-11,9%	-2,9%	-0,69
JPM Euroland Equity A (acc) - EUR	Fund	-12,8%	-3,1%	-0,72
JPM Europe Equity A (acc) - EUR	Fund	-12,9%	-3,1%	-0,77
Dexia Sustainable Europe C	Fund	-13,5%	-3,2%	-0,74
SEB Europe Chance\Risk Fund	Fund	-14,1%	-3,4%	-0,77
Säästöpankki Eurooppa B	Fund	-17,1%	-4,0%	-0,98
AB European Value Portfolio	Fund	-17,8%	-4,1%	-0,80
SEB Gyllenberg European Equity Value B	Fund	-19,8%	-4,5%	-0,97
JPM Europe Strategic Value A (acc) - EUR	Fund	-20,3%	-4,6%	-1,01
Danske Invest European Opportunities	Fund	-22,1%	-5,0%	-1,15
OP-Eurooppa Arvo A	Fund	-27,4%	-6,0%	-1,31

5.3 3 years 2008 – 2010

Table 8.3 years 2008-2010. Summary

3 years 2008-2010	
Active funds	
Funds	59
Outperforming funds	21
%	36 %
Mean outperformance p.a.	-0,89 %
Risk adjusted outperf (sharpe)	15
%	25 %

Again a similar proportion, to the two previous periods reviewed, of the actively managed funds outperformed the index. 36 %, as 21 out of 59 funds managed to beat the index during the 3-year period of 2008 – 2010. On a risk adjusted basis, the outperformance was poorer, a quarter of the funds managed to outperform the index.

Two funds had positive returns for the 3 year period, as the index was down at almost -17%. Only one fund had a positive Sharpe ratio.

All index funds underperformed the index. Two index funds significantly underperformed.

ETF returns were similar to index returns. Half of the ETFs slightly outperformed, and the other half slightly underperformed the index.

If one would have invested 1000 EUR in the beginning of the period in the best and worst performing funds the value at the end of the period would have been the following. Handelsbanken Eurooppa Selective A 1261,17 EUR (+261,17) compared to Danske Invest European Opportunities 558,28 EUR (-441,72). The index return was 830,92 EUR.

Table 9. 3 years 2008-2010. Funds

Fund name	Description	3 year cumulative return	3 year outperformance p.a.	3 year Sharpe
Handelsbanken Eurooppa Selective A	Fund	26,1%	14,3%	1,01
Tapiola Eurooppa	Fund	0,2%	5,7%	-0,10
Invesco Pan European Structured Equity A	Fund	-1,9%	5,0%	-0,21
Danske Invest Europe	Fund	-2,4%	4,8%	-0,17
FF - European Dynamic Growth Fund Y-EUR-ACC	Fund	-3,5%	4,5%	-0,26
Aventum Eurooppa Osake K	Fund	-5,0%	4,0%	-0,30
Nordea 1 - European Value Fund	Fund	-5,3%	3,9%	-0,37
Nordea Eurooppa Plus K	Fund	-9,0%	2,6%	-0,44
Ålandsbanken Europe Value B	Fund	-9,0%	2,6%	-0,46
Alfred Berg Europe B	Fund	-9,5%	2,5%	-0,48
JPM Europe Strategic Dividend A dist EUR	Fund	-10,5%	2,1%	-0,57
Nordea 1 - European Equity	Fund	-12,0%	1,6%	-0,57
OP-Eurooppa Osake A	Fund	-12,2%	1,6%	-0,64
Sparinvest European Value EUR R	Fund	-13,7%	1,1%	-0,81
Nordea 1 - European Alpha	Fund	-14,1%	0,9%	-0,61
T. Rowe Price SICAV - European Structured Research Equity	Fund	-15,6%	0,4%	-0,72
ISHARES STOXX 600 DE	ETF	-15,7%	0,4%	-0,48
VANGUARD MSCI EUROPEAN ETF	ETF	-15,9%	0,3%	-0,55
Arvo Euro Value K	Fund	-16,0%	0,3%	-0,79
JPM Europe Strategic Growth A acc EUR	Fund	-16,0%	0,3%	-0,83
Franklin Mutual European Fund A Acc EUR	Fund	-16,0%	0,3%	-0,94
JPM Europe Focus A (acc) - EUR	Fund	-16,1%	0,3%	-0,73
T. Rowe Price SICAV - European Equity I	Fund	-16,5%	0,1%	-0,74
DB X-TRACKERS MSCI EUROPE TR	ETF	-16,6%	0,1%	-0,71
STXE 600 € NRt	Index	-16,9%		-0,72
JPM Europe Select Equity A (acc) - EUR	Fund	-17,2%	-0,1%	-0,76
Pictet-Europe Index-P EUR	Index Fund	-17,2%	-0,1%	-0,73
Dexia Equities L Europe High Dividend I	Fund	-17,2%	-0,1%	-0,73
ISHARES MSCI EUROPE	ETF	-17,3%	-0,1%	-0,74
SPDR MSCI EUROPE ETF	ETF	-17,7%	-0,3%	-0,74
Danske Invest Europe Enhanced Index K	Index Fund	-17,8%	-0,3%	-0,75
LYXOR ETF MSCI EUROPE	ETF	-17,9%	-0,3%	-0,72
SEB Gyllenberg European Index B	Index Fund	-17,9%	-0,3%	-0,77
ICECAPITAL European Stock Index B	Index Fund	-17,9%	-0,3%	-0,76
ODIN Europa	Fund	-18,2%	-0,4%	-0,74
Carnegie Eurooppa Osake	Fund	-18,5%	-0,5%	-0,92
Nordea Pro Eurooppa K	Fund	-18,5%	-0,5%	-0,82
GAM Star European Equity EUR Acc	Fund	-18,7%	-0,6%	-0,84
Danske Invest Eurooppa Osake K	Fund	-18,8%	-0,6%	-0,83
POP Eurooppa	Fund	-19,0%	-0,7%	-0,89
FF - European Fund Y-EUR-ACC	Fund	-19,0%	-0,7%	-0,86
Aktia Eurooppa B	Fund	-19,2%	-0,7%	-0,91
Dexia Quant - Equities Europe I	Fund	-19,2%	-0,7%	-0,82
FF - European Larger Companies Fund Y-EUR-ACC	Fund	-19,3%	-0,8%	-0,88
Pictet-European Sust Eq-P EUR	Fund	-20,0%	-1,0%	-0,86
Handelsbanken Eurooppa Indeks A	Index Fund	-20,8%	-1,3%	-0,89
Evli Europe Quant Index B	Index Fund	-20,9%	-1,3%	-0,88
Nordea FoF-Choice Pan-European Equities	Fund	-21,1%	-1,4%	-1,42
Handelsbanken Eurooppa Aggressiivinen A	Fund	-23,2%	-2,1%	-0,95
JPM Europe Equity A (acc) - EUR	Fund	-24,2%	-2,4%	-1,07
Evli Europe B	Fund	-24,2%	-2,4%	-1,02
Dexia Sustainable Europe C	Fund	-24,3%	-2,5%	-0,98
AB Eurozone Strategic Value Portfolio	Fund	-24,5%	-2,5%	-0,98
Nordea Eurooppa K	Fund	-24,6%	-2,6%	-1,04
Pictet-European Equity Selection-P EUR	Fund	-25,1%	-2,7%	-1,04
OP-Eurooppa Teema A	Fund	-25,8%	-3,0%	-1,14
OP-Eurooppa Osinko A	Fund	-26,1%	-3,1%	-1,17
SEB Europe Fund C	Fund	-27,5%	-3,5%	-1,16
JPM Europe Dynamic Mega Cap A acc EUR	Fund	-27,9%	-3,7%	-1,22
Pictet-Euroland Index-P EUR	Index Fund	-27,9%	-3,7%	-1,06
FIM Unioni	Fund	-28,5%	-3,9%	-0,98

JPM Europe Strategic Value A (acc) - EUR	Fund	-29,1%	-4,1%	-1,08
SEB Gyllenberg European Equity Value B	Fund	-29,4%	-4,2%	-1,09
Säästöpankki Eurooppa B	Fund	-29,5%	-4,2%	-1,30
SEB Ethical Europe Fund	Fund	-29,5%	-4,2%	-1,23
AB European Value Portfolio	Fund	-29,7%	-4,3%	-1,00
FF - Euro Stoxx50™ Fund Y-EUR-ACC	Fund	-30,3%	-4,5%	-1,07
JPM Euroland Equity A (acc) - EUR	Fund	-31,0%	-4,7%	-1,24
SEB Europe Chance\Risk Fund	Fund	-32,1%	-5,1%	-1,32
OP-Eurooppa Arvo A	Fund	-35,3%	-6,1%	-1,27
AB European Strategic Value	Fund	-35,7%	-6,3%	-1,19
OP-Euro Indeksi A	Index Fund	-36,5%	-6,5%	-1,30
FF - European Aggressive Fund Y-EUR-ACC	Fund	-43,2%	-8,8%	-1,46
Danske Invest European Opportunities	Fund	-44,2%	-9,1%	-1,83
		3 year	3 year	3 year
		cumulative	outperformance	
Fund name	Description	return	p.a.	Sharpe

5.4 Yearly

Table 10. Yearly outperforming funds. Years 2001-2010. Summary

Active funds	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total / Average
Funds	25	29	31	34	35	44	48	59	64	64	433
Outperforming funds	8	14	8	13	14	24	20	19	24	33	177
%	32 %	48 %	26 %	38 %	40 %	55 %	42 %	32 %	38 %	52 %	41 %
Mean outperformance	-2,4 %	1,4 %	-3,2 %	-1,1 %	0,8 %	0,8 %	-1,6 %	-1,8 %	-1,3 %	1,2 %	-0,7 %
Margin above index	2,9 %	6,2 %	3,4 %	4,1 %	5,4 %	4,2 %	3,6 %	4,8 %	5,2 %	6,5 %	4,6 %
Margin below index	-5,0 %	-3,0 %	-5,5 %	-4,3 %	-2,2 %	-3,2 %	-5,2 %	-4,9 %	-5,2 %	-4,5 %	-4,3 %
Highest outperformance	11 %	17 %	9 %	13 %	19 %	19 %	7 %	13 %	15 %	23 %	
Lowest outperformance	-22 %	-7 %	-10 %	-12 %	-7 %	-8 %	-17 %	-21 %	-14 %	-15 %	
Range	34 %	24 %	19 %	25 %	25 %	27 %	25 %	34 %	29 %	37 %	28 %

A total of 64 actively managed funds were reviewed on a year to year basis, with a total of 433 observations. On a yearly basis 41% of the funds were able to outperform the index. Average yearly underperformance for all the funds was -0,7%. During the 10 years, there was two years that more funds outperformed than underperformed the index, 2006 and 2010. Years 2002 and 2005 the average outperformance was positive, even if in numbers most funds underperformed.

Margin above index describes the average outperformance of the funds that were able to outperform the index. Margin below index is the average underperformance of those funds that were not able to outperform the index. On a yearly average for the whole 10 year period, the margin that funds outperformed the index was greater than the margin that funds underperformed the index.

The range, the difference between the best and worst performing funds, is high at a yearly average of 28%. Every year there was funds that clearly outperformed and underperformed the index.

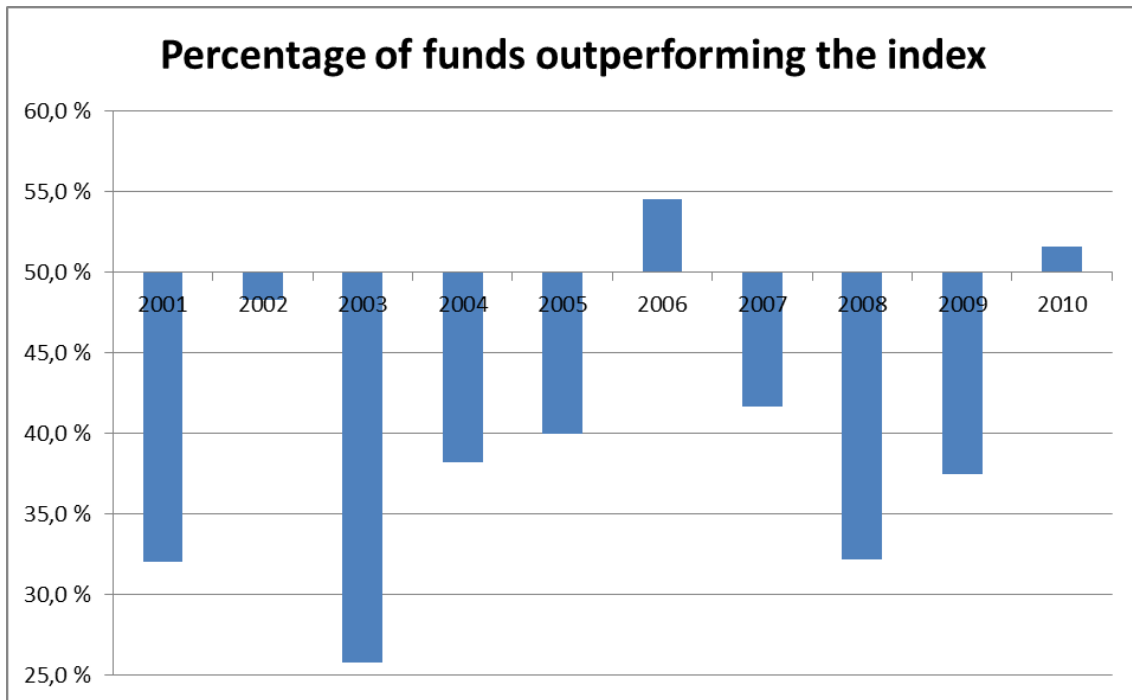


Figure 2. Percentage of funds outperforming the index 2001 - 2010

5.5 Effect of fees on performance

A linear regression analysis was made to evaluate the effect of fund fees on performance. Annual management fee was used as the independent variable, and fund performance was used as the dependent variable. The analysis was made for 10, 5 and 3 years performances. Confidence interval was determined at 95%.

The analysis results for all 3 time periods, 10, 5 and 3 years gave high P-values. P-values were 0,442, 0,390 and 0,858. All are higher than 5% which indicate that for all tested time periods, there is no statistically significant correlation between the annual fund management fees and the performance.

5.6 Effect of risk on performance

A linear regression analysis was made to evaluate the effect of risk, measured as volatility, on performance. As the independent variable yearly volatility of the mutual funds was used, and as the dependent variable was the yearly outperformance.

The confidence interval was determined at 95%. The P-value for the analysis was 0,002 which make the linear regression analysis statistically significant. The R-squared can only explain 1,9% which is very low. This indicates that only 1,9% of the yearly outperformance can be determined by the risk level, volatility. The volatility coefficient was negative, with a value of -0,094. This indicates that the higher volatility a fund had or the more risky it was, the poorer it performed. For each added unit of volatility, performance would decrease 0,094 units.

5.7 Top funds

Some of the best performing funds are presented in Table 11.

- Aktia Eurooppa B - showed consisted outperformance and was able to outperform the index 9 years out of 10 with an average of 1,3%. 2008 was the only year the fund underperformed, by -3,7%.
- Nordea 1 – European Value Fund – 4 years out of 10 the fund outperformed the index by more than 10%. There was also large yearly underperformances, which indicates high fluctuations in the difference in returns compared to the index. The average yearly outperformance was 4,3% per year for ten years.
- POP Eurooppa – fund is a feeder fund, which means it invests all its assets into another fund. The master fund, the one POP Eurooppa invests in, is Aktia Eurooppa. Investments in feeder funds usually underperform their master fund, as more fees are deducted, the master funds fees plus the feeder fund fees. (Financial Times Lexicon, 2011)

Interestingly, POP Eurooppa has performed slightly better than Aktia Eurooppa on a 5- and 3-year basis. A possible explanation could be the cash position held by POP Eurooppa.

- Handelsbanken Eurooppa Selective – fund has a short history and has been active for 3 whole years. The average yearly outperformance has been a significant 13,1%, outperforming the index all 3 years.

Table 11. Top funds

	Years active 2001-2010	Average yearly outperformance	Years outperformed	%	10 years p.a	5 years p.a.	3 years p.a.	Total expense ratio
Aktia Eurooppa B	10	1,3%	9	90 %	0,8%	0,7%	-6,4%	1,87 %
Nordea 1 - European Value Fund	10	4,3%	7	70 %	4,8%	1,9%	-1,8%	1,96 %
POP Eurooppa	5	1,1%	4	80 %		0,8%	-6,3%	2,07 %
Handelsbanken Eurooppa Selective A	3	13,1%	3	100 %			8,7%	1,90 %
STOXX Europe 600					-0,1%	0,5%	-5,6%	

6 CONCLUSION AND DISCUSSION

The Efficient market hypothesis seems to apply somewhat well to the market and time frame examined in this research, as for all three time periods, 3, 5 and 10 years, most funds underperformed the index. In risk adjusted terms even more funds underperformed the index. However the EMH cannot be accepted as such that it is not possible to outperform the index, as there are a number of funds that has been able to do so during longer and different time periods. 3 out of 25 funds that was active during the entire 10 year period was able to outperform the index in all three different time periods (3, 5 and 10 years). These three funds were Danske Invest Europe, Nordea 1 - European Value Fund and Nordea Eurooppa Plus K. Also there was some individual years that most of the funds actually was able to outperform.

The research made by First Quadrant (First Quadrant, 2000) resulted in that the margin that fund outperform the index is lower than the margin that funds underperform the index. This research gave contrary results. The funds in this research that outperformed the index did so by higher margin than the underperforming ones.

No relationship between annual fund management fees and performance was established. This indicates that when choosing a fund to invest in the investor should not focus on the management fee. The fees for the funds reviewed in this work varied between 0,6% and 3,68% per annum, and funds from both the lower and higher range was able to outperform the index on a yearly average basis. However as a rule of thumb one could watch out for exceptionally high fees, as of course the charged fees reduce the received return.

A common expectation in investing is that the higher the risk the higher the expected return is. This was not the case for the examined funds. The regression analysis indicated that the higher the risk was, the lower the fund returned. Even if a statistically significant correlation was found between higher volatility and lower returns, the R-

squared at 1,9% was weak. This means that the risk level does not explain much of the returns. What an investor can learn from this is that when trying to find the best performing fund a low volatility should not be one of the main factors to consider.

So should an individual investor choose to invest in an active or a passive fund? A decisive decision was not made out of the results of this work. In the opinion of the author it comes down to the investor profile and what the investor wants and expects.

If an investor wants similar returns to the market the investor should choose to invest in a passive fund. This also excludes the risk that a fund manager managing your money is unsuccessful and loses more than the market. If one does not trust the competence of individual fund managers or teams at the fund management companies' one should choose a passive fund. The results showed that investing in an ETF does not greatly out- or underperform the index. Also a factor in favor of passive funds is if one wants to keep paid fees at a minimum. If one does not want to go through the hassle of evaluating funds and how they are expected to perform, or one just is not so involved or familiar with different funds, a passive fund could be the best option. Also a passive fund is never the worst performing fund. Therefore for most people a passive fund could be most suitable.

If an investor is aware of the additional risk involved, but seeks returns greater than the average market, an actively managed fund could be favored. The additional risk here means the possibility of the fund underperforming the index. The average yearly underperformance for all funds was quite low at -0,7%. However there were big differences between best and worst performing funds as can be seen in the range in Table 10. With the average yearly range at 28% means being able to select the best performing funds is key for greater returns. As historical returns are no guarantee for future returns the difficult part is to be able to find the future outperforming funds. Simply randomly selecting an actively managed fund is most likely a poor decision for an investor, as most funds underperform the index. Choosing a fund could be compared to stock picking.

On a theoretical level, if all investors would only use passive instruments, active funds would not be needed. Analytics and their analyses would not be needed, and all funds

would in average perform similar to their index. If there was only one active fund on the market, this fund could hypothetically gain enormous profits from rarely traded stocks. Therefore it is important for the functionality of the markets that everyone does not only invest in an index. (Puttonen & Repo 2007, 113-114.)

In light of the results of this thesis and previous researches in the topic reviewed in this work, an absolute truth about active or passive investment strategy superiority cannot be established. When investing in funds unnecessary costs should be avoided, but if additional costs are totally avoided, and one only invests according to the index, significantly outperforming the market is not possible. However, higher costs do not guarantee higher returns. Historical returns also do not guarantee higher future returns. The challenge for an investor, who decides to invest in an actively managed fund, is to find the best performing funds and fund managers.

6.1 Suggestion for further research

It would be interesting to find out what affects the decision making when retail investors choose their funds. How do investors select the funds they invest in? What factors affect the decision? Do they prefer stocks, mutual funds or other instruments?

A research on how different investment strategies perform during different economical periods. How have different types of investment strategies performed during different time periods? Such as performance of small- versus large cap or growth- versus value-strategies.

Another interesting topic to research would be the difference in how actively managed funds has performed against the index in different markets, in developed markets and in emerging markets. Are there significant differences?

REFERENCES

Arugaslan, O. Edwards, E. & Samant, A. 2007, Evaluating large US-based equity mutual funds using risk-adjusted performance measures, *International Journal of Commerce and Management*, Vol. 17. No ½. pp 6-24.

Ball, R. Daniel, K. French, K. Ross, S. Shanken, J. 2002, European Financial Management Association, Roundtable Discussion: Rationality of Capital Markets. *European Financial Management* 8. pp. 229-247.

Barras, L. Scaillet, O. Wermers, R. 2005, False discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas, Swiss Finance Institute, Research Paper Series N 08-18.

Bers, M.K. 1998, Causal relations Among Stock Returns, Inflation: Persistence of International Mutual Fund Performance, *Global Finance Journal*, Vol 9 No 2 pp. 225-240.

Elton, E. Gruber, M. Brown, S & Goetzmann, W. 2003, *Modern portfolio theory and investment analysis*. 6th Edition. John Wiley & Sons, Inc. New York.

Erola, Marko. 2009, *Paras sijoitus : itsepuolustusopas sijoittajille*. Talentum. Helsinki.

Fama, Eugene F, 1969. Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, Volume 25, Issue 2, Papers and Proceedings of the Twenty-Eight Annual Meeting of the American Finance Association New York, N.Y. December, 28-30, 1969 (May, 1970), 383-417

Federation of Finnish Financial Services (Suomen Sijoitustutkimus Oy). *Rahastoraportti* January 2011.

Financial Times Lexicon. 2011. Master-feeder fund.
http://lexicon.ft.com/Term?term=master_feeder-fund Accessed, 13.4.2011.

First Quadrant, 2000. How Well Have Taxable Investors Been Served in the 1980's and 1990's?
www.firstquadrant.com/downloads/How_Well_Have_Taxable.pdf Accessed 18.2.2011

Gruber, J. M. 1996, Another Puzzle: The Growth in Actively Managed Mutual Funds, *The Journal of Finance*, Vol 51 No3.

Kallunki, Martikainen, Niemelä. 2007, *Ammattimainen sijoittaminen*. 5th edition. Talentum. Helsinki.

Liljeblom, E. Löflund, A. 1995, Evaluating Mutual Funds on a Small Market: Is Benchmark Selection crucial? *Scandinavian Journal of Management*, Vol 16, No 1 pp.67-84.

Martikainen, Teppo. Martikainen, Minna. 2002, *Rahoituksen perusteet*. WS Bookwell Oy. Juva.

Morningstar, Lee Samuel. 2010. The Hidden Costs of Indexing
<http://news.morningstar.com/articlenet/article.aspx?id=355956> Accessed, 09.04.2011

Morningstar. 2011. ETF, Exchange Traded Funds Research, ETF Investing.
<http://www.morningstar.com/Cover/ETFs.aspx> Accessed, 28.2.2011.

Möttölä M. 2008, *Rahaa rahastoilla*. HS Kirjat. Helsinki

Nikkinen, J. Rothovius, T. & Sahlström, P. 2002, *Arvopaperisijoittaminen*. WSOY. Helsinki

Nikkinen, J. Rothovius. T. & Sahlström, P. 2008, Arvopaperisijoittaminen, 3rd edition. WSOY. Helsinki

Nordnet. 2010. Nordnet hinnasto.

<https://www.nordnet.fi/mux/web/nordnet/AFcourtage.html> Accessed, 28.2.2011

Opi Osakkeet. 2007. OMX Pohjoismainen Pörssi. 3rd edition. Helsinki

Puttonen, Vesa & Repo, Eljas. 2007, Miten sijoitan rahastoihin. WSOY. Helsinki.

Savikko, S-L. Roine, M. 2009. Sijoitusrahasto-opas. Pörssisäätiö. Helsinki

Stotz, O. 2005, Active Portfolio Management, Implied expected returns, and analyst optimism, financial markets and portfolio management. Vol 19 No 3, pp. 261-275.

Stotz, O. 2006, Selection, Market timing and style timing of Equity Mutual Funds – Evidence from Germany, Zeitschrift für Betriebswirtschaft, Vol 77 No 1 pp. 51-73.

STOXX, 2011. STOXX Europe 600

http://www.stoxx.com/indices/index_information.html?symbol=SXXR

Accessed, 08.04.2011

Vanguard. 2011. Average bid/ask spread.

<https://advisors.vanguard.com/VGApp/iip/site/advisor/investments/bidaskspread>

Accessed, 03.03.2011