Bachelor thesis

Active versus passive portfolio management

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Outline

1. Introduction

Mutual funds can be seen as one of the most successful financial innovations in the last decades. They have created opportunities for investors to diversify their portfolios, as investors are given the opportunity to buy securities of mutual funds. Mutual fund managers manage a portfolio of assets. Investors can hold a diversified portfolio by holding shares of these mutual funds. The benefits that are gained by investing in mutual funds are low costs of diversification and professional portfolio management. According to the ICI 2012 fact book, today's investors are able to choose between 72.657 mutual funds available all over the world.

Managing the portfolio can be done in different ways. Fund managers can invest passively and actively. Passive portfolio management is often a copy of an index (for example the S&P500). In this way diversification of the portfolio is created. Because the index is a weighted composition of stocks, by buying and holding the underlying stocks with the same weights as the index, managers create mutual funds that exactly follow the index. In active portfolio management on the other hand, the focus is on outperforming the index by identifying over and undervalued assets. Active management will attempt to beat the benchmark performance. This while passive management attempts to match the benchmark performance. Active management believes in market inefficiencies, which make it possible to find mispriced securities. Passive management believes in the existence of efficient markets and that it is nearly impossible to " beat the market". The active management has the freedom in selecting securities, while passive management selection of securities is based on the index that is followed. Frequent trading and higher costs for managers and analysts makes active management less cost effective than passive management.

Elton, Gruber and Blake (1996) state that it is possible to outperform the S&P 500 with a portfolio consisting of high alpha values. However some researchers, like Sharpe (1991) state that an actively managed dollar will on average underperform the index, net of costs. Research done by Bogle (2002) shows that the index performs better than active managed portfolios in most cases.

Bogle's research shows that passive portfolio management has a big advantage above active managed portfolio management, mainly due to the absence of all kinds of

costs (managements costs, sales costs, taxes, etc.). Also Malkiel (1995), Carhart (1997) and Daniel, Grinblatt, Titman and Wemers (1997) claim that most mutual funds are not able to outperform the index. Until today the debate around portfolio management continues.

From an investor's perspective it might be interesting to invest in actively managed funds. One of the main reasons for investing in actively managed funds, is the idea that actively managed portfolios get higher returns than their passively managed counterparts. The higher returns are declared by the knowledge of fund managers and the accessibility for fund managers to professional software and not commonly known information. The mutual funds managers have marketing tools to share their wisdom with investors. The existence of higher expense rates for actively managed funds is not unknown to investors, however they are willing to pay these higher costs because of the believe that actively managed funds give higher returns compared to passively managed funds. Investors who buy passively managed funds don't believe in beating the index. They prefer the low costs that passively managed funds offer. According to the Investment Company Fact Book (2012) 23.8 trillion dollar is invested in mutual funds worldwide of which 49 percent (11.6 trillion dollar) is invested in the U.S. mutual fund market. In 2011 there were 8684 funds in the US alone employing 159.000 employees. At the end of 2011, 383 index funds managed 1.1 trillion dollar is the U.S. alone. However the remaining 10.5 trillion dollar is actively managed, which costs millions of dollars for investors. Sharpe (1991) finds evidence that by supporting funds that actively manage portfolios, millions of dollars are wasted by managers. In a time of economic crisis, like we are experiencing now in the Netherlands, it might be useful to lower costs and go for passively managed funds. To find out if this is the case, the Dutch fund market will be studied.

To beat the index mutual funds managers should be able to identify under and overvalued securities. In the debate about which method (active versus passive) is preferable, the question is often if active fund managers are worth the extra (high) costs and if investors should because of this avoid any actively managed funds. If active portfolio management really were able to perform better than passive portfolio management, the assumption of the existence of efficient markets would be wrong.

The goal of this study is investigate whether active portfolio management is achieving a better performance in the Dutch market than the performance achieved by passive portfolio management and find out if portfolio managers are able to add value by actively managing their clients portfolios.

As the debate continues it will be interesting to investigate the active portfolio management in the Netherlands. Hereby models can be used to measure risk-adjusted returns. To measure these returns, models of Sharpe (1966) and Jensen (1968) will be used.

All the necessary data that is for this study will be collected from the DataStream database. The study will compare the monthly returns of 6 mutual funds with provided benchmarks. In this way the performance for active managed portfolios will be measured against passive managed portfolios. The time frame that will be used is from 1-4-1995 till 1-1-2012. The study shows mainly slightly positive alpha values, however more future research will be needed to come to real conclusions.

2. Active portfolio management versus passive portfolio management

The biggest advantage of investing in mutual funds is the ability to diversify a portfolio with a limited amount of money. Once this decision is made, an investor should make a choice between an actively managed portfolio and a passively managed portfolio

Active and passive portfolio management offer two ways in which a portfolio can be managed. Both want to achieve a maximal return on investment given the market circumstances. According to Daniel, Grinblatt, Titman and Wemers (1996) actively managed funds invest over one trillion dollar for their clients, with total costs of billions per year. Despite the fact that active portfolio management has a longer history, the last decades the index funds have gained popularity, mostly because they offer a low cost alternative to actively managed portfolios. According to the Ici 2012 factbook, costs of actively managed funds are on average 93 basis points, while the costs of passively managed funds are only 14 basis points on average. Because of the high costs, managers of actively managed portfolios have to achieve a return that is high enough to cover both the costs and the return earned by the index. If they are not able to do this, the investors will be stuck with a bad deal

Many academics like Malkiel (1995), Carhart (1997), Gruber (1996), Wermers (1997) argue that investors should invest in passively managed funds like index funds mainly because the costs are much lower. Malkiel (1995) shows that the market of securities is highly effective in adapting new information. Active fund managers believe that the market isn't efficient. They state that there are possibilities of extraordinary returns on investment and they believe that they have special knowledge by which they can defeat the index.

An investor can choose between passive and active funds, just in line with his personal view on the market efficiency. Before discussing the two management methods, the hypothesis of efficient markets will be introduced first.

2.1 The efficient markets hypothesis

An important factor in the debate around active and passive portfolio is the efficient markets hypothesis. Can private information add value to the portfolio managers' performance?

During the sixties Paul A. Samuelson en Eugene F. Fama developed the efficient markets hypothesis (EMH). According to Fama (1965), the efficient market states that new information will by reflected in prices immediately. In an efficient market where all players act rationally and all information is freely available there will be no mispricing. Unfortunately humans don't always act rationally. Mispricing can occur, but because of the existence of many players on the market this situation will occur just for a very short time.

Fama also developed the random walk theory. This theory claims that stock prices are unpredictable and follow a random pattern. Prices go from t to t+1 without being influenced by historical data. Fund managers are, according to this theory, not able to predict the stock prices. That's the reason why according to the efficient markets hypothesis it won't be possible for fund managers to find information, which could help to find over-or undervalued assets. By this theory active fund managers are useless and investors should invest in passively managed index funds. These passively managed funds follow an index and have the advantage of offering low transaction costs. Active managers claim on the other hand that they have more information about the market, which makes it possible for them to achieve extraordinary gains.

2.2 Active portfolio management in theory and practice

The majority of investors and fund managers are active. According to the Investment Company Institute, at the end of 2011, 23.8 trillion dollar in invested in mutual funds worldwide. According to their 2012 investment Company Fact Book, 7637 funds are on the US market alone. 383 funds are index funds that invested a total of 1.1 trillion dollar.

The active portfolio manager wants to beat the market portfolio. One of the reasons of managers being active is the belief that high historical returns may lead to high future returns. Also if all funds would be passive funds they would be all the same and to compete they should reduce costs. Active portfolio managers continuously watch the market and are able to respond quickly when market changes occur. The fund manager is able to pick the stocks of his choice. He could buy growth stocks or more stable stocks, stocks of small companies or stocks of big companies. Professional fund managers are hired to reach the financial goals of their clients.

The objective is selecting a portfolio, which is able to beat the benchmark while having minimal tracking error variance (TEV). A portfolio's tracking error is the difference between the return on the portfolio and the return on the benchmark Alexander and Baptista (2009).

Two strategies managers use to achieve above market returns are, technical and fundamental analysis. Technical analysis is widely used by fund managers, although academics like Fama (1965) argue that due to the efficient market technical trading is not able to achieve extra ordinary gains. Technical analysis tries to find patterns by looking at historical data. Technical analysts believe they can predict future price

movements by looking to previous price movements in the past. The managers who apply this strategy believe that extra ordinary gains can only be achieved by studying historical prices. However scholars like Fama (1965) and Sharp (1966) believe in the existence of efficient markets and argue that because of efficient markets extraordinary gains won't be possible. On the other hand Treynor and Ferguson (1985) claim that historical prices when combined with other valuable information can be helpful in achieving unusual profits. However the opportunities are caused by the non-price component.

Besides technical analysis many portfolio managers focus on fundamental analysis. Fundamental analysis focuses on analysis of past and current financial information like operations, cash flow, dividend policies of a company. Arbarbanell and Bushee (1997) examine whether fundamental analysis can achieve abnormal returns. In their study they construct a portfolio that earns an abnormal return of 13.2%. In this study they find evidence that fundamental analysis is able to provide information on future returns. According to Arbardanell and Bushee (1997) prices fail to adjust immediately when public information comes available.

According to Elton and Gruber (1997), the choice of the portfolio manager to choose for an active portfolio management is mainly based on his or her perception on the degree of market efficiency. An active management strategy is preferable if the market offers over-or undervalued assets. In all other cases it will be better to go for a passive management strategy. When investors buy shares of actively managed funds they hope that the fund managers have extra knowledge to be able to offer them a higher return than the market portfolio.

According to Elton and Gruber (1997) actively managed portfolios offer higher expected returns than passively managed portfolios. However they also charge higher management fees. Elton and Gruber find an annual expense ratio of 144 basis points for active funds and only 7 basis points for index funds. These higher fees are mainly because of active analysis and investment flexibility offered by the fund. When investors choose for an actively managed fund instead of an index fund, they can expect a risk adjusted return on investment (alpha). Alpha can be seen as a performance measure (risk adjusted return).

Elton and Gruber (1997) state that the strategy to buy actively managed funds depends on the return offered, alpha value, tax rate on dividend and gains and the time horizon of the investor. Actively managed funds try to create shareholder value in two ways. Firstly by trying to select a portfolio with above average returns on investment relative to it risk. Secondly by means of market timing where managers try to predict the future direction of the market. According to Barras, Scaillet and Wermers (2005) after deduction of expenses only 0,6% of the funds is able to beat the benchmarks, like S&P500. However actively managed funds are despite all those studies still more popular than passively managed funds. The trust in extra ordinary returns gives the investors a hope that their fund manager is the one that is able to beat the index. Besides this it also plays a roll that active managed funds are widely available. Some countries offer no or just a few passively managed funds, while the majority and the biggest choices are on the active managed spectrum.

2.3 passive portfolio management in theory and practice

Index funds are considered to be passively managed funds. The manager of a passively managed fund tries to mimic the market. The fund manager buys the underlying assets of which the index consists. He will also use the same weights of which the index is constructed. Investors will receive the same return as the index minus the fund fees. Index funds are not trying to outperform the index, the risk and return will follow the index.

Elton, Gruber and Busse (2004) state that future returns of index funds are rather accurately predictable, which isn't the case with future returns of actively managed funds. Investors in index funds do not believe the existence of fund managers who are able to achieve extraordinary gains. They believe in the existence of the efficient market and that all information is already reflected in the price.

Gruber (1996) asks the question why investors buy actively managed mutual funds. Firstly Mutual funds offer on average a negative risk adjusted return. Secondly index funds give on average a better deal to investors. At last the investor will pay less for index funds then for every dollar, which is under (active) management. Future performance seems to be partly predicable from past performance. Some investors recognize this and investors who insert new cash flow benefit from this, as the risk adjusted returns on their investments over the ten years of Gruber's study are positive. After this conclusion Gruber asks also another question:" why do we see any money remain in funds that predict and perform poorly ". To answer this question he divides the investors into groups. The first group is described above and is called the sophisticated group. The second group Gruber calls the disadvantaged group. This group he divides into three subgroups. The first group consists of people who put money

into funds because of other influences like advice from brokers or marketing tools. Gruber calls this group unsophisticated investors. The second group he calls institutionally disadvantaged investors. This group consists of pension accounts which are restricted to a plan they are part of. A third and last group are named tax-disadvantaged investors. People belonging to this group cannot remove money from these funds as capital gain taxes apply.

As independent studies show results that it is nearly impossible for portfolio managers to find under-or overvalued securities in the market, the market for passively managed funds is increasing in recent years. According to the 2011 investment company fact book in 1996 index funds had a part 5.2% in the total mutual fund business. In 2010 this is already 14.5%.

3. Risk-adjusted performance measures

Early studies by Treynor (1965), Sharpe (1966) and Jensen (1968) stood at the cradle of the risk adjusted performance measures that are still used today. Treynor (1965) developed a ratio that was based on the idea of the CAPM. The ratio measures excess returns compared to what could be earned with an investment in a risk free asset per unit of market risk. The Treynor ratio (also known as reward-to-volatility ratio) can be seen as a risk-adjusted measure of return, which is based on systematic risk. Treynor (1965) introduces a so-called " characteristic line" , which shows the relation between a fund's return and the return of a benchmark. The slope of the line is called Beta and shows the volatility of a fund relative to the volatility of a benchmark. The higher the Treynor ratio the better the performance of the portfolio is. Sharpe (1966) developed the reward-to-variability ratio. This ratio was later renamed into Sharpe ratio. The Sharpe ratio also measures the risk-adjusted performance. The Sharpe ratio shows how well the return of an investment compensates for the risk investors take. The higher the Sharpe ratio the better it compensates for risk. Jensen (1968) developed Jensen's alpha (also known as Jensen's performance index). Jensen's alpha is a risk-adjusted performance measure that measures the average return of a portfolio compared to the market return of a portfolio (based on the capm), given the market return and the portfolio's beta. If Jensen's alpha is positive, it means a portfolio manager is able to beat the market. Alpha of a mutual fund is found by the return of the fund compared with the return of the benchmark index. Alpha can be seen as the value that the fund manager adds or subtracts to the fund. An alpha of 1 means the fund has outperformed the benchmark index by 1%.

Daniel, Grinblatt, Titman and Wermers (1997) invent a new way to measure mutual fund performance. They introduce character-based benchmarks in their study. In their study, fund returns are decomposed into three parts. Each part describes different aspects of fund performance. The first part is called “average style (AS)” and gives the return of a fund based on certain characteristics. The second part is called “characteristic selectivity (CS)” and examines the ability of a manager to select stocks that outperform similar stocks with similar characteristics. The third and last part is called “characteristic timing (CT)” and studies the possibilities for managers to time the different investment styles. Daniel, Grinblatt, Titman and Wermers (1997) used a database, which consists of 2500 equity funds. The data was gathered over a period of 20 years (1975-1994). Daniel, Grinblatt, Titman and Wermers (1997) found that funds show some stock selection ability, however they don’t show characteristic timing ability. The total of characteristic selectivity and characteristic seems significant, however in the same amount as the difference between fees of passive and active funds.

Cremers and Petajisto (2007) introduced a new measure to predict performance. This measure is called active share. Active share calculates the difference between the share of an active portfolio and the portfolio benchmark index. Active Share is always between 0-100% and can be seen as the fraction of the portfolio which is different from the index.

Treynor (1965) uses non-diversifiable risk instead of total risk. In order to evaluate the mutual funds performances, there will be a closer look to the model:

$$T_i = (R_i - R_f) / \beta_i$$

In the Treynor model, T_i stands for Treynor's performance measure for portfolio$_i$. R_i is the return on a portfolio. R_f is the risk free rate of return. Beta (β) is the systematic risk for portfolio$_i$. The Treynor ratio doesn't quantify its outcome, however it can be useful for ranking portfolios but only if they are part of a bigger portfolio, which is fully diversified. Otherwise portfolios with different total risk but similar systematic risks will be ranked equally. Treynor's model is not a perfect solution for fund managers as it has a couple of drawbacks. When the Beta is close to zero the Treynor ratio will be sky high. When Beta is negative and the risk free rate of return is higher than the expected return than the ratio will be positive. Because Treynor focuses only on systematic risk, the danger exists that portfolios have equal systematic risk, but because of bad diversification have high unsystematic risk.

Sharpe (1966) creates a similar model as the model developed by Treynor, except from the fact that Sharpes model is aimed on predicting future performance:

$$SR = (R_p - R_f) / \sigma_p$$

In this model SR stands for the Sharpe ratio. R_p is the expected return on a portfolio. R_f is the risk free rate of return and σ is the standard deviation of the portfolio. In the denominator Sharp uses total risk instead of systematic risk. It can be seen as a drawback that the Sharpe ratio doesn't make a distinction between systematic and unsystematic risk. Also the sharp ratio doesn't work for negative outcomes.

Jensen (1968) introduces Jensen's alpha, which is closely related to the model of Treynor and based on the CAPM. Jensen (1968) argues that portfolio performance can be divided into two parts. The first part is predicting the future security prices and the second part is minimizing the unique risk by means of diversification. By doing this the portfolio manager is able to achieve results that are better than the market. A portfolio manager can bring down losses in a recession by reducing the portfolios Beta. On the other hand increase of Beta in a booming economy will lead the profits. Jensen's alpha is based on the assumption of the efficient market theory and on the CAPM and indicates that returns on invest or in line with the risks. Jensen's alpha uses the model:

$$\alpha_p = r_p - (r_f + (r_m - r_f) \cdot \beta)$$

In the model above α_p is Jensen's alpha on a portfolio. r_p is the return on the portfolio, r_f is the risk free rate and r_m is the market rate of return. Risk is measured by β. If fund managers will be able to successfully predict stock prices alpha will be positive. If alpha equals 0 then fund managers' performance will be the same the index. If fund managers perform worse than the index, alpha will be negative. An Alpha value of 1 means the market has been outperformed by 1 percent. One of the disadvantages of Jensen's alpha is that it only allows an absolute measurement.

4. Previous research active and passive portfolio management

There is a continuous debate going on between investing in portfolios that follow the index and investing in active portfolios in order to beat the index, even including the higher expenses of actively managed funds. The previous research is divided in the a pro active part and a pro passive park. However first the passive part will be introduced.

4.1 Previous research on passive portfolio management

One of the first studies on risk-adjusted returns was from Treynor (1965). He used a model that was based on the beta coefficient of the CAPM. The model offers, despite some shortcomings, an effective method to measure the fund's risk adjusted returns. Treynor uses 20 funds in his study and shows that in the period between 1953-1962 the majority of the funds perform worse than the index. One year later Sharpe (1966) shows that from the 34 mutual funds he studied between 1954-1964 only 11 did a better job than the index. In his study Sharpe introduced the reward-to-variability ratio, a new measure method for measuring risk –adjusted returns. Later its name changed to Sharpe-ratio.

Two years after the study of Sharpe, Jensen (1968) comes with a more extensive study. Jensen studies 115 equity funds between 1945-1964. He studies the efficient market hypothesis and wanted to see whether historical returns by funds managers could show signs of outperformance. Jensen wanted to know if fund managers could add value to their investments and if they could use their skills, information or intuition to beat to market on a regular basis. As the previously used capital asset pricing model (CAPM) wasn't able to help him in achieving his goal, he developed a new measure named Alpha. Alpha measures the extra return earned by the portfolio compared to the

returns suggested by the Capital asset Pricing model. If the returns equal the Capital asset pricing model, alpha is 0. But if they exceed the Capital asset pricing model, alpha is positive. The equation for alpha is:

$$\alpha_p = r_p - (r_f + (r_m - r_f) \cdot \beta)$$

Active Portfolio managers try to achieve high alpha values. In his study Jensen showed that funds are not able to beat the market adjusted return of the Capital asset pricing model, also not before deduction of costs.

In the beginning of the seventies Carlson (1970) did a study on forecasting future returns of mutual funds in the period 1948-1967. In his study he used multiple indexes (S&P500, NYSE composite, DJIA). He finds that past performance didn't offer little predictive value and that performance was positively influenced by the availability of new cash resources.

Research done by Miller and Gressis (1980) shows some small positive and some small negative relations between beta and the market return. They study 28 funds in total. Also some positive and negative relations between beta and alpha have been found. However none of them seemed to be significant.

Cumby and Jack (1990) study the performance of 15 U.S.-based internationally diversified funds between 1982-1988. They concluded that the individual performance of the funds or as a whole wasn't higher than the international equity index. However they found some proof that the funds outperform the U.S. index.

Elton, Gruber, Das and Hlavka (1993) use the data from Ippolitos study (1989). They find errors in his study. Elton, Gruber, Das and Hlavka show the importance of

using the right benchmarks. Benchmarks should equal the assets of the portfolio. Elton, Gruber, Das and Hlavka find that between 1945-1984 active mutual fund managers underperform passive portfolios. Besides that they also find that funds with high turnovers and high costs, performed worse than funds with low turnover and low costs. Elton, Gruber, Das and Hlavka state that fund managers don't adjust their expenses in line with performances.

Malkiel (1995) studies mutual funds to analyze the performances between 1971-1991 compared to the benchmark (S&P 500). After analyzing the funds returns, he concludes that the mutual funds underperformed the benchmark and that it was better for investors to invest in low cost index funds instead of selecting an expensive active manager.

Gruber (1996) studies 270 funds between 1985-1994. He notices the increasing popularity of mutual funds and gives a couple of reasons for this. Firstly Customer service, which offer record tracking and easy entrance and exit. Secondly, mutual funds offer low trading costs. Thirdly, mutual funds create possibilities to diversify portfolios. Another reason, which only applies to actively managed portfolios, is the availability of professional management. Gruber states that actively managed funds underperform the market by 1.94% per year. The funds with a four-index model are underperforming by 65 basis points. Gruber finds that actively managed funds have expenses of 113 basis points, compared to index funds that only have expenses of 22 basis point. Gruber suggests that investors invest in the market portfolio.

Similar results are found by a study done by Carthart (1997). He examines 1892 funds between 1962-1993. He divides the funds in three groups (aggressive growth, long-term growth and growth-and-income). The results are that the majority of the

funds are underperforming against the market portfolio because of the funds expenses. No proof for market timing or for selection capacity could be found.

Arugasian and Ajay (2008) study the risk-adjusted returns of 50 U.S. based international funds. Analysis has been done for a period of then years (1994-2003) and for a period of 5 years (1999-2003). Both international and U.S. benchmarks were applied. The study shows the influence risk has on the attractiveness of funds. Funds that offer lower returns might be more interesting for investors because of the lower risk they offer.

4.2 Previous research on active portfolio management

McDonald (1974) shows that from the 123 equity funds in a period between 1960-1969, those who have a higher risk perform better than those with a lower risk. McDonald used indexes of Treynor (1965) and Sharpe (1966). With the Treynor index 67 funds performed better than the market. When using the Sharpe-ratio only 39 mutual funds showed a higher performance than the market index.

Ippolito (1989) collects data of 143 funds in the period between 1965-1984 and concludes that the risk adjusted returns in the mutual fund business and the net costs were identical to the returns of index funds. The results showed that portfolio turnover and fund fees were not related to fund performance and that funds with higher turnover fees and expenses also higher rates of return to offset these costs and thereby are able to outperform the market.

Grinblatt and Titman (1992) analyse 279 funds to find prove that mutual fund performance relates to past performance. The study showed a positive persistence in fund performance and concludes that pasted performances could provide useful information for investors.

Hendricks, Patel and Zeckhauser (1993), use quarterly return of 165 growth funds in a period from 1974-1988. The quarterly returns are divided in 8 parts based on the recent returns. Hendricks, Patel and Zeckhauser find that a portfolio with good recent performers also performs well in the next quarter. They conclude that short-term persistence exists and they call this “hot hands”.

Grinblatt and Titman (1993) study the performance of 155 funds between 1975-1984. The study analyses determinants of mutual fund performance and shows that by

investing in aggressive growth funds managers can earn a significantly positive risk adjusted return.

Wermers (2000) merges two databases and uses 1788 funds during a period of 20 years (1975-1994). In his study, Wermers find that funds hold stocks that perform on average 1.3% better than the index. However this is before expenses. But net returns are underperforming by 1%. Of the total loss of 2.3%, 1.6% is because of expenses and transaction costs and 0.7% due to underperformance of non-stock assets. Wermers shows that funds are able to find stocks to cover their costs. Wermers also states that high-turnover funds beat the Vanguard index 500 (unadjusted net return basis). Wermers claims active mutual fund managements adds value to investors.

Barras, Scaillet and Wermers (2005) examine 2076 U.S. Mutual funds during from 1975 till 2006. According to this survey 9.6% of the managers were able to select securities that performed better as the index.

Most of the research about portfolio management is based on the U.S. market, as this market is considered to be a pioneer in the funds business and offers more data than any other available market. The studies on the U.S. market share overall the conclusion that it is better to invest in passively managed portfolios. However the paradox is that the main part of the investors on the U.S. market invests in active managed portfolios.

5. The Dutch market

Most studies that deal with mutual funds and managers performance have been done for the US market. Ward and Saunders (1976), Shukla and Imwegen (1995) and Blake and Timmerman (1998) have studied the market in the UK. Wittrock and Steiner (1996) studied the market in Germany and Ter Horst, Nijman and De Roon (1998) studied the Dutch mutual fund market.

Although the U.S. market is by far the biggest mutual fund market in the world, the first mutual fund is said to be Dutch. In 1774 Adriaan van Ketwich, a dutch banker, provided diversification opportunities for investors with limited cash. This makes the fund "Eendragt Maakt Magt" the first mutual fund in the world.

Nowadays index funds in the Netherlands are still relatively rare. Think capital is the only Dutch company who is offering Exchange traded Funds (EFT). Vanguard is a big supplier of index funds and offers it products in the Netherlands through local distribution channels. Meesman and Brand New Day are Dutch mutual funds that are investing in index-based portfolios. In the Netherlands the passive mutual fund market is a small market as most mutual funds are active because of the economic benefits it offers to the companies.

6. Empirical analysis

The data consists of monthly returns of a selection of 6 Dutch mutual funds. By making this selection the Dutch website of Morningstar has been a useful resource for finding relevant information on mutual funds. Criteria for selecting the data were country of origin. All funds had to be based in the Netherlands. Secondly, selected funds had to be equity funds. Thirdly all funds are having stocks in their portfolio, which are also in the Dutch AEX index. In total 13 funds were remaining after applying the selection criteria. Unfortunately DataStream doesn't offer funds returns for all funds during the period 1-1-1990 till 1-1-2011. For this reason the sample period will be shorter than originally planned. Due to incomplete data the total amount of funds had to be reduced as well to a total of 6 funds. The funds that will remain in the data are: Robeco Hollands bezit, Kempen orange fund, Kempen oranje participaties, Ing dutch fund inc, Delta Lloyd deelnemingen fonds and BNP Paribas small companies Netherlands fund. The sample period will be decreased to 1-04-1995 till 1-1-2012. The monthly prices will be used to calculate the monthly returns of the funds. For each fund 200 monthly returns have been calculated. The data for 1-month Dutch treasury bills was not available, and the American Treasury bill rates are not appropriate to use in the Dutch market. For this reason the average one month Euribor (Aibor rate was the name till January 2009) rate will be taken as the risk free rate. Euribor is the Euro interbank offered rate, the rate that banks offer to other banks. The average Euribor rate is taken and calculated as 2.97% per year. All funds included in the data are presented in table 1. Survival bias plays an important role when investigating the fund's performance. Funds with poor performances tend to exit the market earlier than funds with good performances. This problem leaves only the best funds in the data, while the funds with bad performances should also be taken into account. As a benchmark the AEX index will be used. As currency the Euro will be used. Cost and taxes will not be included in the analysis. Risk adjusted returns will be calculated by using Sharpe's ratio as well Jensen's alpha. All actively managed funds will be used to create an equally weighted index. This index will be compared to the benchmark index. The AEX index will be used as a benchmark because the mutual funds portfolio consists mainly of

stocks, which are also a weighed average in the AEX index. Ippolito (1989) says that funds fees have a positive influence on funds returns, while Wermers (2000) has found evidence for the opposite hypothesis. For this reason fund fees will not be included. Both the Sharpe ratio and Jensen's alpha are presented in table 1.

Table 1:fund information, calculated against the Dutch AEX index. Rf=2,97%

Funds name	Average annual return	Minimal monthly return	Maximal monthly return	Standard Deviation	Sharpe ratio	Beta	Jensen's alpha
ROBECO HOLLANDS BEZIT	0,057	-0,192	0,114	0,207	0,131	0,871	0
KEMPEN ORANGE FUND NV	0,089	-0,189	0,176	0,203	0,292	0,696	0,011
KEMPEN ORANJE PARTICIPATIES NV	0,118	-0,309	0,295	0,244	0,36	0,509	0,021
ING DUTCH FD.	0,052	-0,22	0,141	0,214	0,102	0,914	-0,002
DELTA LLOYD DEELNEMINGEN FONDS	0,071	-0,152	0,222	0,198	0,206	0,507	0,007
BNP PARIBAS SMALL COS. NETHERLANDS FUND	0,08	-0,17	0,183	0,22	0,23	0,668	0,009
Equal weighted return index	0,087	-0,183	0,168	0,212	0,272	0,861	0,009

The table shows the performance of the individual funds against the benchmark index and also the newly constructed equally weights index against the benchmark index. The table also shows the average, minimum, maximum and standard deviation of the funds and of both indexes. The performance measures of most funds are above the benchmark index. Only one fund has a negative alpha, this is Ing Dutch fund. Also the performances measures of the equally weighted index are performing above the benchmark index. This would mean that active fund managers would have the ability to identify under-or overvalued stocks. However there are

limitations on the dataset, so making these conclusions can be quiet difficult. 6 funds are not enough to avoid coincidence. Also a bigger sample period would have been better, although DataStream didn't offer it. Survivorship bias does play a roll in the data as well. The worst performing funds probably already went out of business. It also definitely plays a roll that taxes and expense ratios are not taken into account. The alpha value of the constructed equally weights index is 0,9%, which is in most cases not sufficient at all to cover the extra expenses that come with an actively managed fund. Further research will be needed to see if there are possibilities to outperform the Dutch index. Besides that it might also be interesting to divide the data in sub periods. It would be possible to choose a period during economic growth and a period during economic decline.

8. Conclusion

The purpose of this thesis was to examine mutual fund management; in both active and a passive way and to find out which of both management forms will perform the best in the Dutch market during the period 1995-2012. Two different risk-adjusted performance measures, Sharpe ratio and Jensen's alpha, are used to examine the Dutch market. Unfortunately only 6 actively managed Dutch funds could be used. The results indicate that the actively managed funds that were studied did outperform the index. This would suggest that Dutch portfolio managers are able to outperform the index. However this claim cannot be hold for a couple of reasons. In the study examines only 6 funds and 200 monthly returns of each fund this amount is to small to make claims about beating the market. Even more important the returns are might be higher for the actively managed funds, expenses and taxes are not taken into account. However when expenses are taken into account, things will look different. The average total expense ratio of all 6 funds is 1,35%. According to the website of Morningstar (morningstar.nl) is the average total expense ratio for index funds 0,39%. The difference of 96 basis points cannot be paid back by the returns achieve by actively managed portfolios. Different studies, like Carhart (1997) conclude that the high expense ratios of actively managed funds are reducing the funds performance. Besides the expense ratio, which covers marketing costs, administration fees, etc., also transaction costs should be taken into account. As an actively managed portfolio frequent trading of securities leads to extra transaction costs. For future research it might be interesting to divide the data in two subgroups, one group with a timeframe in which economic growth applies, another one during economic decline. It might be interested to see if Dutch funds perform differently in bull markets compared to bear markets.

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