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Diploma thesis

ANALYSIS OF RETURNS ON INVESTMENTS OF
ACTIVE AND PASSIVE MANAGEMENT IN
DEVELOPED AND DEVELOPING CAPITAL
MARKETS

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SUMMARY

This paper analyses the performance of active and passive management in two developed markets (England and Germany) and three developing European markets (Slovenia, Croatia and Serbia). The focus is on comparison between returns achieved by equity funds and market indexes. Results are in line to commonly accepted theories, where passive management on average outperforms active management. The conclusion is that market indexes in developed markets achieve higher returns compared to equity fund managers in the observed period, whereas equity funds managers in developing markets outperform the local market indexes. But it has to be emphasized that the results for developing markets are very close to the results of developed markets when limitations are taken into consideration.

Key words: active management, passive management, equity fund, market index, portfolio, developed market, developing market, market efficiency.

POVZETEK

V nalogi analiziramo donose aktivnega in pasivnega managementa na dveh razvitih trgih (Anglija in Nemčija) in treh razvijajočih se evropskih trgih (Slovenija, Hrvaška in Srbija). Glavnina analize je osredotočena na primerjavo med donosi delniških skladov ter tržnih indeksov. Rezultati so v skladu s splošno priznanimi teorijami, kjer pasivni management v povprečju dosega višje donose kot aktivni management. V sklepu ugotavljamo, da so tržni indeksi v preučevanem obdobju na razvitih trgih dosegli višje donose v primerjavi z upravljavci delniških skladov, na drugi strani pa so upravljavci delniških skladov na razvijajočih se trgih dosegli višje donose kot domači tržni indeksi. Vendar moramo poudariti, da so ob upoštevanju vseh omejitev rezultati razvijajočih se trgov zelo blizu tistim na razvitih trgih.

Ključne besede: aktivni management, pasivni management, delniški sklad, tržni indeks, porfolijo, razviti trg, razvijajoči se trg, učinkovitost trgov.

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CONTENT

1	Introduction	1
1.1	Definition of the problem and theoretical backgrounds	1
1.2	Purpose and goals of the diploma thesis	2
1.3	Methods foreseen for achieving goals.....	2
1.4	Assumptions and limitations of the diploma thesis.....	3
2	Active and passive management	5
2.1	Active management	5
2.2	Passive management	7
2.3	Investment strategies and Efficient Market Hypothesis.....	9
2.4	Active versus passive management – Which brings greater returns?.....	10
3	Investment companies	14
3.1	Types of investment companies	15
3.2	Equity funds	15
4	Evaluation of portfolio performance	17
4.1	Adjusting returns for risk	19
4.2	Effective annual rate.....	20
5	Performance, results and comparison of returns	21
5.1	Developed markets	21
5.1.1	Example: England	22
5.1.2	Example: Germany.....	23
5.2	Developing markets.....	25
5.2.1	Example: Slovenia.....	26
5.2.2	Example: Croatia	27
5.2.3	Example: Serbia.....	27
5.3	Limitations and variables with derivation of the results	28
6	Market efficiency	31
6.1	The theory behind market efficiency	31
6.2	Results of the analysis and a link to market efficiency	34
7	Conclusion	36
	Literature	37
	Sources	39
	Apendices	41

ILLUSTRATIONS

Figure 1: Investment performance is a zero-sum game.	10
Figure 2: Distribution of returns after expenses.	11
Figure 3: Portfolio risk as a function of the number of stocks in the portfolio.	18
Table 1: England's index versus equity funds 5-year performance.	22
Table 2: Germany's index versus equity funds 5-year performance.	24
Table 3: Slovenia's index versus equity funds 3-year performance.	26
Table 4: Croatia's index versus equity funds 3-year performance.	27
Table 5: Serbia's index versus equity funds 3-year performance.	28

ABBREVIATIONS

BELEX 15	Belgrade stock exchange market index
CAPM	Capital Asset Pricing Model
CROBEX	Zagreb stock exchange market index
DAX 30	Frankfurt stock exchange market index
EAR	Effective Annual Rate
EMH	Efficient Market Hypothesis
FTSE 100	London stock exchange market index
NAV	Net Asset Value
REIT	Real Estate Investment Trusts
SBI TOP	Ljubljana stock exchange market index
S & P 500	Standard & Poor's 500 – New York stock exchange market index
TR	Total Return
i.e.	in essence
p.a.	per annum
etc.	et cetera

1 INTRODUCTION

1.1 Definition of the problem and theoretical backgrounds

There has been a long and wide discussion in the investment world, whether, in the long run, an investor is better off investing in index funds that are run passively, or in actively managed funds where professional money managers change the composition of the portfolio according to market conditions and trends. This is an interesting topic because it tackles two things that investors ask themselves before they churn out their money for investments: where to invest, and how to invest. Investors like to have choices and these choices are integral part of portfolio diversification. In order to eliminate unsystematic risk and achieve high beta in rising markets and low beta in declining markets, the composition of portfolio and assets holdings has to be changed accordingly. One of the first decisions (besides an asset type composition), based upon economic conditions and market trends, is what percentage of the portfolio should be invested in developed and/or developing markets. This represents an important diversification implication that affects the risk-return performance evaluation of an investor.

It has long been observed by researchers that passively managed portfolios (index funds) on average outperform funds managed by investment professionals. There are more than enough historical examples that prove this point. Even despite that, majority of investors prefer to invest in actively managed funds. This might seem ironic, but behavioural economists suggest that this might be due to investors' lust for above average returns, which can be achieved by some professional money managers. But winning managers are fewer than losing managers, and there is no proof that it is possible to spot managers or funds that will outperform the market in the future. Therefore, in the long run, investors are better off investing in index funds.

In the conclusion of this paper, the results are described from the point of view of an efficient market hypothesis. Market efficiency is very important for keeping capital markets in line with integrity and trust. Developed markets are more efficient than developing markets, meaning market prices reflect all available information and this information also gets reflected into the price very quickly. More efficient markets tend to be bigger, more liquid and have an efficient regulatory overview. Parallels are then drawn to the results from the point of view that active managers may take advantage of investing in less efficient markets as information is not absorbed as fast, arbitrage opportunities exist and predictable patterns appear. The analysis at the end of the paper reveals if these assumptions uphold for researched markets.

Before the analysis, the paper focuses on the theory behind the results. At the beginning, we explain the differences between active and passive management, which style brings greater

returns and why is that the case. This is followed by the description of different types of investment companies, with the main focus on equity funds as they are the part of active management and are also the subject of the analysis. The following focus will be brought to the practice of evaluating the portfolio performance. For the purpose of the analysis, only returns are considered, but as return and risk go hand in hand, there is a short description of how risk-return performance is evaluated. After that, the analysis of the results for each market takes the centre stage. In conclusion, market efficiency is linked to the results.

1.2 Purpose and goals of the diploma thesis

The purpose of this paper is to analyze and compare the performance of active and passive management in two developed (England and Germany) and three developing markets (Slovenia, Croatia and Serbia) in Europe. Our goal is to find out whether active management on average achieved superior returns compared to local market indexes in the analyzed period, and if there were relative differences between active and passive management in developed and developing markets.

The main reason for analyzing this subject comes out of my personal interest in financial markets, and particularly in portfolio management. The research findings that suggest that passive management on average achieves greater returns than active management are interesting and go against the common logic. This would therefore mean that most of experienced, knowledgeable professional investors are unable to beat the market returns. With a great help of theory and empirical data, this paper will demonstrate the factors which contribute to these conclusions.

The goals of the paper are:

- To define which are the main factors contributing to different returns between active and passive management,
- To find what are the differences in the returns of active and passive management on the observed capital markets,
- To answer why there are differences in returns of active and passive management in developed and developing capital markets, and what is the nature of these differences.

1.3 Methods foreseen for achieving goals

The composition of this paper is divided into theoretical and empirical parts. The theoretical part is based on academic work of researchers as well as of academics that shaped these theories further and those that came to the opposite conclusions. This sets foundations for the analysis. Theoretical part breaks down some aspects of different theories and connects them into a wholesome truth. Understanding the theory is important for using relevant empirical data and drawing meaningful conclusions. This is presented in the second chapter, where we

discuss the theory behind active and passive management. In the third chapter we present investment companies, and in the fourth chapter arguments behind the theory of evaluation of portfolio performance are put forward. In conclusion, the theoretical part about market efficiency is linked to the empirical data.

Based on the theoretical part, we will draw conclusions and try to find patterns in returns for active and passive management. We will then attempt to confirm or refute the theory through our own research. In the empirical part of the paper (chapter five), we use different scientific methods. With the use of descriptive method, we presented the data and the description of the analysed subject. We also used the method of comparison, in order to find the differences in returns between active and passive management and in the researched markets. In the final chapter we use synthesis to sum up the results and conclusions.

1.4 Assumptions and limitations of the diploma thesis

The analysis of capital markets is concentrated only on the specific markets (Slovenia, Croatia, Serbia, England, and Germany); therefore the findings will apply only for researched markets and equity funds that are relevant for this diploma thesis. In addition, we will concentrate only on the returns of equity markets. This means that bond, currency, commodity and derivative markets are not part of this research.

Other limitations are mainly connected to sampling errors and obtaining accurate returns. In developed markets, a small sampling error might be attributed to the selection process of equity funds, which were in abundance and sample size had to be reduced to a tolerable number for the research. The used method was random stock picking. For developing markets, the information was scarcer and we faced limitations connected mainly to obtaining accurate returns. A small market size contributes to the small number of equity funds that fit the criteria for the analysis. The sample size of equity funds for Slovenia, Croatia and Serbia ranges only from 8-10, which causes sample size error and standard deviation to be much greater. Another limitation was short observation period – five years for developed markets and three years for developing markets. Small nature of developing markets and scarcity of equity funds that invest predominantly in local markets made the observation period shorter, as equity funds that fit the analysis criteria are mostly “younger” than five years and some readjustment had to be made. Due to the small nature of developing markets only small portion of equity funds is invested in local companies. As the returns have to be compared to the index benchmark, recalculation had to be made to the only present returns for local equities. This was done by assigning weights to each of the investments, whether it was bonds, equity or foreign investments. Other asset classes and foreign investments were then taken out of the final return equation, so only pure local equity return was assigned to analysed equity funds. That is how we obtained comparability to index funds.

Market index returns also proved to have a comparability issue. DAX 30 is a total return index, which incorporates reinvested dividends into the returns of the index. In our view, this is a more correct way of measuring returns, and we obtained the same total return index numbers for FTSE 100. On the other hand, indexes in developing market are market capitalization indexes that do not take into account dividend reinvestments and therefore cannot be directly compared to DAX 30 and FTSE 100 TR. In this paper, we are using assumptions that are based on total returns of indexes in developing markets, and thereafter drawing comparisons and conclusions.

2 ACTIVE AND PASSIVE MANAGEMENT

Investment managers use different approaches in portfolio construction. It comes down to personal investment style, understanding of markets, investment dynamic, or just seizing the opportunity. In a broad scheme of things, there is a choice for investment professionals between active and passive management. Those who try to beat the market by identifying over- and undervalued stocks are called active managers. By contrast, passive fund managers seek to match the performance of a specific index, thus not trying to outperform the market. Practice of the former investment style is called active management, and practice of the later is called passive management.

Many studies have been conducted over passive and active management as to who wins “the battle” of returns on average. Jensen (1968) started off academic studies in this field and most of them conclude that passive management wins. As suggested by Otten and Bams (2002): “The net performance of mutual funds (after expenses) is inferior to that of a comparable passive market proxy.” However, later on some studies emerged that contradicted the initial findings. Grinblatt and Titman (1989, 1992), and Ippolito (1989) observed that active funds did possess enough private information to derive above-average returns; moreover, Hendricks, Patel and Zeckhauser (1993), Goetzmann and Ibbotson (1994), and Brown and Goetzmann (1995) find that active funds over short periods show persistency in performance. Carhart (1997) however argues that this evidence does not support superior portfolio management, instead it is only a case of simple momentum strategies.

These contradictory findings were countered by Malkiel (1995) and Gruber (1996) whose theory is still accepted today. They observed and reported similar findings as Jensen (1968) – in favour of passive management – and claimed that survivorship bias is to blame for results of these “false” older studies. When the effect of survivorship bias is taken out of the equation, the argument goes that on average active managed funds achieve lower returns than the market proxy, by the amount of expenses they charge the investor. Considering most recent accepted studies – if there is a choice between investing in an actively managed fund and an index fund, it is preferred to invest in the latter. Index funds on average provide higher returns and there are also fewer costs associated with investing in them. Some actively managed funds will of course outperform the index benchmark, but in general the theory discussed above holds.

2.1 Active management

When it comes to active management, it is all about outperforming the market. This is why active portfolio managers are hired, and their compensation is often linked to performing better than the comparable benchmark index. They try to achieve this through better stock picking and market timing – essentially, investing in securities that are likely to show above

average returns. The broad based stock index (or market proxy) is used to evaluate active fund performance in relation to passive funds.

Even though passive management on average outperforms active management, there is still a large number of active managers and investors who prefer investing in actively managed funds. From investors' point of view, one reason for this may be linked to the investment psychology. Some investors prefer to have a chance of above market average returns through actively managed funds, which is exactly what index funds cannot offer them. On the other hand, they must take into consideration the potential downsides of investing in active funds, which are higher costs because of high management fees and worse than index funds performance on average. Even though some active funds may record superior returns, majority will underperform market returns. But many investors and professional portfolio managers still believe they have the ability to identify securities and sectors that will bring above average returns. Professional investors believe that they possess the knowledge and understanding of the markets that will enable them to spot market trends and make superior predictions of where the markets are heading. In essence, they are convinced they can produce forecast that are better than the market consensus as suggested by Redhead (2008, 331–332). Besides that, they are also convinced that they can successfully time markets and achieve superior risk-adjusted performance through diversification by eliminating unsystematic risk.

There is quite a disparity between benefits and disadvantages of active portfolio management in relation to passive fund management. The main benefit would be – which is probably the main reason why active management is well alive – the potential to achieve higher returns. This can be done by active portfolio managers through adaptation and picking of investments according to changes and conditions in the market place. Whether there is a bull or bear market, high or low market volatility, or effects on market prices through seasonality, active managers are expected to act accordingly and this is where they seek their advantage. Flexibility to choose investments regarding market conditions can give active fund managers the advantage to outperform the market.

The disadvantages of actively managed funds can be far greater than the benefits. Potentially high costs, unpredictable returns and tax liabilities all eat into investor's returns. High costs are associated with higher assets and securities holdings turnover, thus expenses, management and transaction fees are higher than in a passively managed fund. Unpredictable returns are the feature of actively managed funds that can underperform the market averages at any given period. Frequent buying and selling of securities increases tax liability. Securities held by the fund sold for a profit create capital gain for the investor which is taxable to unit holders.

2.2 Passive management

Passive portfolio management does not try to outperform the market as active portfolio management does. Instead it tries to match the investment performance of the market. This is done through investing in nearly all the shares in the stock market, or in all the shares in the same subcategory – for example SBI TOP or FTSE 100. This investment method is referred to as “*indexing*”. As the name indexing suggests, the purpose is to try to match the performance of market index. This is done through constructing a portfolio that mimics targeted market index and contains the exact same shares in the same proportions as the index. This way the investment performance will match the performance of the market index and will not fall short nor will it beat market returns. The only thing that keeps return on investment slightly lower compared to the return of the market is a small fee that is associated with investing in a passive fund. The question we ask next is following: why did passive managed funds emerge in the first place if this strategy cannot outperform the market? Ironically, passive management delivers where active management tries to beat it - in investment performance. Passive managed funds on average outperform active managed funds. This issue is related to market efficiency and will be discussed later on.

Passive portfolio management has a proven track record in competitive performance against other styles and types of investments. Besides superior average returns, passive portfolio management offers other benefits to investors. One of them are lower costs, which is linked to simplicity of investments as analysis of the market is not necessary, thus lower management and transaction fees are expected compared to active managed funds. Other benefit is a broad diversification as market portfolio consists of a wide range of different types of securities. Therefore, unsystematic risk can be eliminated. Other important benefit would be tax-efficiency. Passive management buys and holds securities for extended periods – this is called “*buy and hold strategy*”. As capital gains are not as frequently realised as with active portfolio management, these modest capital gains result in lower tax liability.

Besides obvious advantages there are also disadvantages of passive portfolio management. One is that it expects to provide market returns only. The other disadvantages are rigid portfolio requirements which are responsible for following the market index during downswings. While benefiting fully from market upswings with this strategy, market timing is very difficult. We can see that this strategy mainly works for all investors in the long run, but not all investors invest for the long run and have different levels of risk averseness. Disadvantages point out the reasons why many investors and active managers believe they can outperform the market.

Passive management is not as rigid as it looks like at the first impression. We are familiar with many different types and methods of passive management. They are discussed in the continuation of this chapter.

A passive strategy does not really need to exactly fit the composition of the market index. It is true that indexing brings the best possible diversification, but other passive strategies exist as well. Only two requirements are necessary for an investment strategy to be passive: no attempt to pick shares, and no timing of when to buy and sell shares. Besides index tracking there are two other passive management types. One is buy-and-hold strategy where the portfolio manager buys a wide range of securities, a portfolio, and holds them for the duration of investment horizon. While portfolio is held, no attempt is made to change its composition. A second type of passive portfolio management involves changes in the portfolio. This might sound a lot like active management, but in reality portfolio manager does not take views that are different to the market consensus. Redhead (2008, 332) explains that this entails adjusting the composition of the portfolio in response to variations in risk free interest rate, the consensus view on the risk and return characteristics of the market portfolio, and the degree of risk aversion exhibited by the investors on whose behalf the fund is managed.

Redhead (2008, 337–339) names four main methods of index tracking:

- Full replication: This may be achieved by holding all the stocks in the index in the proportions in which they occur in the index. More broadly based indices are difficult to replicate in this way, however, a replication of narrow index may not provide a well diversified portfolio. Indices do not have management and brokerage costs whereas index funds do incur such costs. Such costs make it unlikely that perfect replication of returns will be achieved. When attempting to fully replicate a broad index, the problems increase. In particular a broad index may include stocks that are small and illiquid.
- Stratified sampling: This is an approach to the construction of a fund that tracks a broad index. Instead of holding all the stocks in an index, stratified sampling holds only a sample of the stocks. A sampling technique should try to ensure that the portfolio held reflects the index being tracked. It may be that the portfolio held invests in sectors proportionately to the sector distribution of the index. This may be further refined in order to have a similar distribution between large, medium, and small companies. Generally the tracking error from stratified sampling can be expected to be a little greater than from full replication. However, holding a sample, rather than all of the shares in the index is likely to reduce brokerage costs. There is a trade off; more precise tracking may entail increased costs.
- Optimisation: Optimisation is a sample method based on the view that stock returns are determined by a set of attributes such as size, price-earnings ratio, volatility, liquidity, etc. (Rudd 1980). Optimisation attempts to ensure that the shares in the portfolio reflect the attributes of the shares covered by the stock index. Shares for the portfolio are chosen in an attempt to mirror the attributes of the shares in the index. One problem with optimisation is that it relies on historical risk-return relationship continuing into the future, which may not happen. Also as the attributes, of the market and of individual stocks, change portfolio rebalancing will be needed. This raises transaction costs and allows tracking error.

- Synthetic funds: Synthetic index funds involve the use of stock index futures. A stock index futures contract is a notional agreement to buy a portfolio of shares (the portfolio reflected by the stock index) on a future date at a price (index level) agreed in present. Stock index futures reflect the actual (spot) stock index and tend to show parallel price movements.

2.3 Investment strategies and Efficient Market Hypothesis

Malkiel (2003) argues passive management (indexing) works mainly because markets are surprisingly efficient. “Indexing is a sensible strategy because our security markets appear to be remarkably efficient in digesting and adjusting to new information,” finds Malkiel (2003). As new information that is going to affect prices of securities arises in the markets, it takes only moments for that information to get “digested” by investors, which immediately shows in the market prices. If that is the case, we are talking about efficient markets. But we know that some markets digest information faster than others, depending on liquidity and number of market participants. If markets react slowly to new information and if arbitrage opportunities exist, we are talking about inefficient markets. As a matter of fact, numbers of predictable patterns and market anomalies have been found to exist, like under reaction to news events, which could potentially be exploited by professional investors to derive superior returns. However none of these findings stand in the way of Malkiel’s belief that the efficient market hypothesis works. In general, even if the markets are only weak form efficient, the transaction costs to exploit market inefficiencies are too great to derive above average returns as anomalies tend to be very small Malkiel (2003) concludes.

There are numerous studies that support Malkiel and the efficient market hypothesis. Fama (1998) has stressed that while anomalies such as under reaction to news events appear, they seem to appear as frequently as over reaction to events. Therefore, in the long run, under- and over reactions even out and do not create a persistent anomaly. Schwert (2003) has emphasised that many of the predictable patterns seem to disappear soon after they are discovered.

We cannot deny that irrational behaviour does not exist in the market place and that systematic errors are made by some investors. This field has been greatly discussed about in recent years by behavioural financial economists and psychologists who try to make sense out of investors’ decisions and investments, which often deviate from market consensus. Great examples of this are “*investment bubbles*” that appear in the markets, which are formed because of errors in asset valuation. This suggests some major disturbances in market efficiency and even suggests market inefficiency. But there is another important factor that speaks for efficient markets, which is the lack of clear arbitrage opportunities. This means that there is almost no trading strategy that will enable portfolio managers to make returns with no risk and to derive returns that will outperform passive style of investing. Many attempts have

been made to find predictable patterns in returns of securities. This profit making quest ended with very little success as the conclusion was that the returns on securities are very close to being serially uncorrelated. This speaks in support of efficient market hypothesis.

2.4 Active versus passive management – Which brings greater returns?

Now that the basics of active and passive management have been covered, the question is which strategy works best for average investor and investment manager.

It is a common fact, long noted by the experts, that on average the returns of actively managed funds cannot exceed the returns of the market index. This is because the performance of active funds is based on the portfolio of securities that are also part of the market index, i.e. portfolio managers on average hold the market index. Admati and Pfleiderer (1997) sum up:

A manager can deviate from holding securities in his market proportions only if someone else deviates in the opposite way. Across all of the active funds, these deviations cancel out and so the average performance of active funds cannot be greater than the performance of the market. Active managers are engaged in a zero sum game with the gains of the winners exactly offset by the losses of the losers.

However, this does not tell the whole story, and the picture painted by those words is even less rosy for active managed funds. Active managers incur trading costs that are much higher because of frequent purchases and sales of securities. This is why the active portfolio management is actually a negative sum game.

Malkiel (2003) argues the case for passive management from efficient market hypothesis viewpoint as well as from more recently recognised point of view that markets may be inefficient. From his position, the performance of passive management is superior even in inefficient markets because investing across the markets is a zero-sum game, which is depicted in Figure 1.

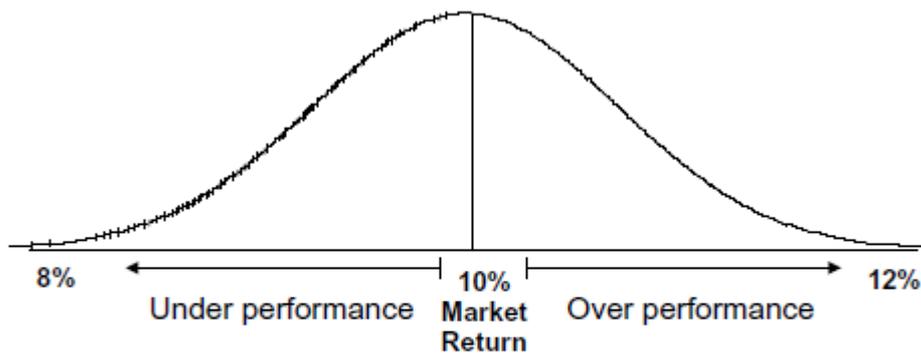


Figure 1: Investment performance is a zero-sum game

Source: Malkiel 2003.

Additionally, as Figure 2 shows, active management underperforms the average returns of the market for the amount of additional transaction costs that are needed for this investment strategy. So, even if investing on average is a zero-sum game, additional expenses and fees eat into the returns of active funds and this causes that average return on investment is below average compared to the market. The figure assumes a 10 % market return and 120 basis points of added expenses for active management. Because active funds are run by professional portfolio managers, higher management fees are included into overall expenses, which make the costs of operating an active fund much higher compared to passive funds. After costs, passive managers will outperform most active managers finds Malkiel (2003).

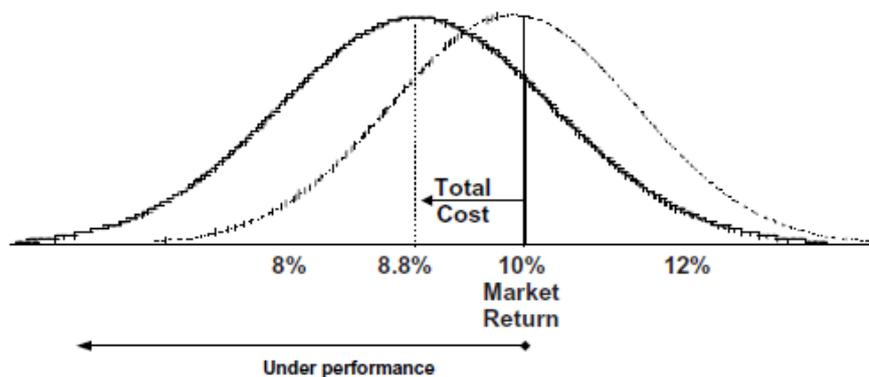


Figure 2: Distribution of returns after expenses

Source: Malkiel 2003.

So far, the theory is strongly in support of passive style of investing. There are also counter arguments that test the validity of passive management. One argument goes, as stated by Shiller (2000), if irrational investors set market prices in large enough quantity that has a visible impact on price movements of securities, then we would expect that rational professional investors, who are richly incentivised to outperform the market, should be able to

derive above average returns. By this argument, professional investors as a group will outperform because irrational “*noise traders*” will find themselves in the bottom part of the distribution of returns. Malkiel’s (2003) counter-argument to Shiller’s (2000) view comes from observing that evidences in favour of active managers look bleak. According to his research, there is no evidence that would support theory of active managements’ superior returns, i.e. there is no proof that on average professional investors are able to derive above average returns in any market or sector of the market. In his work “Passive investment strategies and efficient markets” Malkiel (2003) lays out what is in his judgement the most convincing evidence for passive management, denoting the following: “The most convincing evidence that markets must by and large be efficient and that profitable arbitrage opportunities are not readily available is that professional investors are unable to outperform the collective judgment of the market as a whole.”

Contrary to Malkiel’s belief, many studies on asset pricing and market efficiency have shown predictability in the stock markets, which implies that some markets tend to be inefficient. Campbell, Lo and MacKinlay (1997) conclude that returns in the markets can form predictable patterns that can be observed and exploited in some situations. Researchers DeBondt and Thaler (1995) claim, based on their study on behavioural finance, that market prices in many cases considerably depart away from their fundamental values. According to them, these escalations and deviations can be observed by skilful investors and taken advantage of by producing above-average returns. Similar remark comes from Shiller (2000), who observed a pattern of investment bubbles which were in his view caused by investors’ psychological and behavioural factors. His conclusion is that future market movements are therefore to some extent predictable. Lo and MacKinlay (1999) even conclude that the random walk hypothesis can be rejected because there is momentum in the stock market.

Even though the researchers, mentioned in the previous paragraph, speak against passive strategies and conclude that superior returns may be achieved by active management, their suggestions fall on infertile ground. Instead, general consensus in academic world is that no matter what kind of market inefficiencies exist, they do not provide the opportunity to constantly achieve superior returns. This is because predictable patterns and arbitrage opportunities are easy to observe by rational investors who quickly make trades that correct these market imbalances. In addition, quite often the cost of exploiting inefficiencies does not outweigh the returns. John Cochrane (2001) observed that in many academic works predictable patterns amount to clever magnifying glasses where some information is used and some is left out depending if it proves or rejects predictable patterns. Malkiel (2003) supports his claims by stating:

The record of professional equity investors certainly does not suggest that sufficient predictability exists in the stock market to outperform a passive portfolio with equivalent risk. Moreover, there appear to be no recognisable anomalies or irrationalities to enable professionals to take advantage of exploitable arbitrage opportunities. Investors are likely to achieve far higher returns by

employing a passive indexing strategy than they are likely to achieve from active portfolio management.

All the evidence points towards underperformance of active managers. Though in reality, there are some professional investors who have outperformed market averages repeatedly and with some consistency. One reason for these above average performances from some active managers may be that certain investment professionals obtain information that can be used to achieve above average returns, as assumed by Admati and Pfleiderer (1997). Above average performance must be upset by below average performance from another set of active managers, as on average market index is held in active portfolios. These winning performances are therefore at the expense of other investors. Though in reality, records look bleak in trying to pinpoint consistently outperforming managers. For an investor, information about managers' professionalism, "star power", or salary, does not tell anything about his funds' future performance. There seems to be no correlation between past and future performance of investment managers. If a professional investor achieved superior returns in the past, it does not mean that he will be able to continue with his winning performance in the future. There are numerous examples in the history of investment world where some investment managers outperformed their fellow counterparts by considerable margins for a certain period of time and then fell short of expectations shortly after. Not only that there is no correlation between past and future performance, there also appears to be no correlation between fees for active management and investment performance. Excess fees do not provide excess returns.

To make the case against active management even worse, it should be mentioned that it has the added downside of being less tax-efficient compared to passively managed funds. This is connected to frequent buying and selling of securities, which causes capital gains to be realized far more frequently through active management than through passive management.

To conclude this debate over whether passive or active management outperforms the other, there is no better way than to look at the bet that the greatest investor in the history of investment has placed. Of course, we are talking about Warren Buffett himself. He has bet that the S&P 500 will outperform carefully selected hedge funds by experts at the money management firm Protégé Partners LLC. The bet would run for ten years and it started on January 1st 2010 as reported by CNN Money (2011). So to answer the question set by this chapter's title "*Comparison between active and passive management - Which brings greater returns?*", let us answer with another question. Who should we bet on? On the greatest investor of all time, Warren Buffett, or on the investors that want to be like him? All the academic evidence supports passive management and Warren Buffett is rarely wrong.

3 INVESTMENT COMPANIES

As investment companies are vehicles that represent active management, the next few paragraphs will explain what investment companies are and which types of them exist. This research is centred around the performance of investment companies that are compared to index benchmarks, therefore the emphasis is put on equity funds because they resemble the most the content of index benchmark (consisted of equities).

Bodie, Kane and Marcus (2009, 88-94) define investment companies like this:

Financial intermediaries that collect funds from individual investors and invest those funds in a potentially wide range of securities or other assets. Pooling of assets is the key idea behind investment companies. Each investor has a claim to the portfolio established by the investment company in proportion to the amount invested. These companies thus provide a mechanism for small investors to 'team up' to obtain the benefits of large-scale investing.

Investment companies provide several important services for the benefits of investors. The most important ones are (Bodie, Kane and Marcus 2009, 88–94):

- Record keeping and administration: Investment companies keep track of investments, capital gains, dividends and redemptions, and issue reports that contain all the investment information.
- Diversification and divisibility: By pooling investor's money, investment companies enable investors to hold fractional shares of many different securities. Because money is gathered from a large number of investors, investment companies act as one large investor. To reduce risk, they invest in variety of securities in different locations and sectors.
- Professional management: Financial analysts and professional portfolio managers are employed to manage assets on behalf of investors trying to achieve above average investments results.
- Lower transaction costs: Because investment companies manage large pools of money they also trade assets in large quantities. This enables them to lower brokerage fees and commissions.

For small individual investors, one of the main benefits of investing in investment companies is pooling of assets. This large pool of assets is created by numerous investments from many investors. Investment companies need to divide claims to those assets (ownership) among the investors in proportion to the number of shares purchased in investment companies. The value of each share is called net asset value, or NAV. Net asset value equals assets minus liabilities expressed on a per-share basis (Bodie, Kane and Marcus 2009, 88–94):

Net asset value = (Market value of assets – Liabilities) / Shares outstanding

3.1 Types of investment companies

There are many different types of investment companies. We are cognizant of unit investment trusts, closed-end investment companies, open-end investment companies (more commonly known as mutual funds), and other investment organisations that are not regulated and recognised in the same way as above mentioned investment companies. Other investment organisations are commingled funds, real estate investment trusts, and hedge funds.

The most common type of investment organisation in the world today is mutual fund which accounts for more than 90 % of investment company assets find Bodie, Kane and Marcus (2009, 88–94). Mutual funds are further classified into different types according to investment policies. So we recognize: index funds, balanced funds, asset allocation and flexible funds, international funds, bond funds, sector funds, money market funds, and equity funds. It is equity funds that are going to be discussed next, as they are the subject of the analysis representing active management, because their investments are aimed first and foremost in shares.

3.2 Equity funds

For the purpose of this paper, the focus of the analysis is on equity funds as they resemble the content of index benchmarks the most – their performance (return per annum) is compared to the designated index.

When analysing average yields according to the kind of funds, it has been shown that the greatest yield was found in equity funds and the lowest in the money. It may seem like equity funds are the best investments with their high returns, but investors need to be aware that yields correlate positively with risk, and should therefore decide on where to invest based on how risk averse they are. This positive risk-return relationship in equity funds has certain investment implications with possibility of a high returns, but investors need to assume much larger risk for this type of investment. On the other hand, bond funds provide lower returns, but this also comes with lower degree of risk conclude conclude Milovanović and Galetić (2006).

Equity funds invest first and foremost in shares. Certain percentage of total assets, only around 5 %, is usually invested in money market securities for liquidity purposes. Because most of the assets in equity funds are consisted of shares, they provide investment solutions for less risk averse investors that expect high yields but also assume greater degree of risk.

We are familiar many different types of equity funds. Fredman (1993, 23–54) names a few:

- Aggressive return funds: These type of funds aim at achieving maximum profit possible. They are very risky, but offer the potential of high returns.

- Private equity funds: These funds are very similar to aggressive return funds when it comes to investment policy. The difference is that private equity funds invest only in companies that trade in secondary markets, thus investments are focused more narrowly with high risk and return potential.
- Growth funds: The focus of growth funds is on capital gains, dividend yields are being neglected here. The above average returns from capital gains are expected to be provided through investing in large capitalization companies with high growth potential and with undervalued shares write Brown and Goetzmann (1997, 374).
- Income funds: Investments are made in companies that provide high dividend yields every year.
- Owners-profit funds: These types of funds investments are less risky and thus provide smaller potential returns than their other equity funds counterparts. Investments are being made primarily in companies with long lasting reputations.

4 EVALUATION OF PORTFOLIO PERFORMANCE

Evaluating portfolio performance is essential for every investor and portfolio manager to determine whether investments produced expected returns considering the risk involved. The process of analysing and selecting the securities that will be held in a portfolio is time consuming and expensive, so an investing party (individual, company, or institution) must weigh this effort against potential benefits of investments. Every investor should be interested in evaluation of their portfolios, let it be investors managing their own portfolios or investors that trust their money to professional portfolio managers. In the later case, investors should be able to determine if the investment performance justified the services' cost.

Reilly and Brown (2004, 1106–1108) name two major requirements that a professional money manager should meet in order to fulfil investors' expectations. The first one is obvious and it requires portfolio managers to have the ability to derive above-average returns for a given risk class. The second requirement is the ability to diversify the portfolio completely to eliminate all unsystematic risk relative to the portfolio's benchmark. The first requirement – to derive above-average returns for a given risk class – is something every professional investor strives for. Interestingly enough, consideration of risk in the context of return has only existed for five decades. The 1960s were the times when portfolio theory gained acceptance in academic circles. Today, it is believed that above average risk-adjusted performance can be achieved through either superior timing or superior security selection.

To derive superior risk-adjusted returns, a money manager has to post bigger gains in rising markets and smaller loses in declining markets in relation to the index benchmark. This can be achieved through holding a completely diversified portfolio of high-beta stocks through rising markets and favouring low-beta stocks and money market instruments during declining markets. Managers who achieve that have the unique ability of sensing the market trends and feeling of where the markets are heading, i.e. these managers are able to predict peaks and troughs of the markets better than an average investor and adjust composition of their portfolios in accordance with the view of market trends. This would be the case of superior market timing. When it comes to superior security selection, money managers try to consistently invest in undervalued securities for a given risk class.

The second requirement in evaluating performance of professional money managers is the ability to completely diversify the portfolio. This way the unsystematic risk is diversified away and we are left with only systematic risk, which is the risk we use in valuations of risk-adjusted performance. This is a very important feature of the portfolio construction and should be followed by every portfolio manager. Why carry an extra unsystematic risk if it can be diversified away, when there are enough risks in the markets already? The risk that is taken into consideration is a systematic or market risk that has to be always accounted for, even in the most sophisticated and highly diversified portfolios. This is also the risk for which investors are rewarded by the market.

Reilly and Brown (2004, 1106–1108) talk about the connection between diversification and risk:

Unsystematic risk is not considered when determining required returns because it can be eliminated in a diversified market portfolio. Because they can expect no reward for bearing this uncertainty, investors often want their portfolios completely diversified, which means they want the portfolio manager to eliminate most or all unsystematic risk. The level of diversification can be judged on the basis of the correlation between the portfolio returns and the returns for a market portfolio or some other benchmark index. A completely diversified portfolio is perfectly correlated with the fully diversified benchmark portfolio.

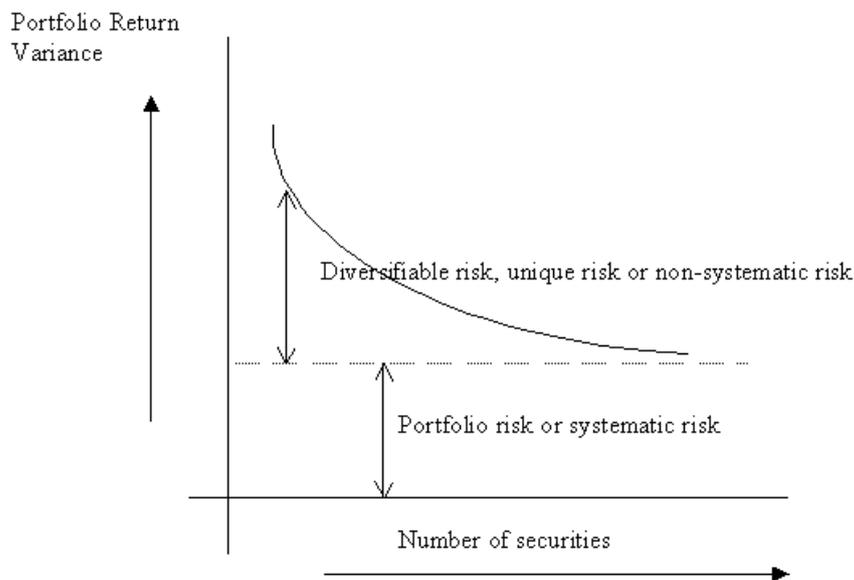


Figure 3: Portfolio risk as a function of the number of stocks in the portfolio

Source: Viswanath 2000.

Figure 3 shows the effect of portfolio diversification. It shows the average standard deviation of equally weighted portfolios constructed by selecting stocks at random as a function of the number of stocks in the portfolio. Unsystematic risk falls when we diversify the portfolio by increasing the number of securities, but the reduction of risk can only be limited to getting rid of unsystematic risk as systematic risk cannot be diversified away find Bodie, Kane and Marcus (2009, 195–196).

While adjusting performance for risk is a usual practice in portfolio construction, this paper focuses on returns only. The effective annual rate of return is used for comparability reasons and is explained at the end of this chapter. But as return and risk go hand in hand, several different approaches in measuring returns are described in the next few paragraphs.

4.1 Adjusting returns for risk

When evaluating performance, it is not very useful to compare only average returns. We must adjust returns for risk to obtain meaningful comparisons. One way to achieve this is to compare returns of portfolios with similar risk characteristics suggest Bodie, Kane and Marcus (2009, 823–827). Other solutions trying to measure risk involve using mean-variance criteria. Risk-adjusted performance evaluation methods emerged together with the capital asset pricing model, which plays a pivotal role in evaluating performance of professional investors. Jack Treynor, William Sharpe, and Michael Jensen were the pioneers of the risk-adjusted performance evaluation and immediately recognised the significance of CAPM.

Jagannathan and McGrattan (1995) explain the CAPM model:

This model was the first apparently successful attempt to show how to assess the risk of the cash flow from a potential investment project and to estimate the project's cost of capital, the expected rate of return that investors will demand if they are to invest in the project. [...] The CAPM was developed, at least in part, to explain the differences in risk premium across assets. According to the CAPM, these differences are due to differences in the riskiness of the returns on the assets. The model asserts that the correct measure of riskiness is its measure – known as beta – and that the risk premium per unit of riskiness is the same across all assets. Given the risk-free rate and the beta of an asset, the CAPM predicts the expected risk premium for that asset.

CAPM formula: $r = r_f + \beta \times (r_m - r_f)$,

where r_f is the risk free rate, r_m is the expected return on the market and β is the beta of the cash flows or security being valued.

Besides the CAPM, we know several measures that take risk-return relationship into consideration when valuing securities. The most commonly used one is the Sharpe measure, which measures the reward to volatility trade-off. Other measures are: the Treynor measure, the Jensen measure, the information ratio, the M2 measure, etc.

Each measure has some appeal, but there are problems with risk-adjusted performance measures as well. The problems arise with consistent evaluations of risk-adjusted performance. This is because risk is hard to quantify and that is why risk measures used in performance evaluation calculations differ considerably suggest Bodie, Kane and Marcus (2009, 823–827).

For the purpose of this paper and for simplifying comparability, risk-adjusted performance measures are taken out of the analysis and effective annual rate is being used instead.

4.2 Effective annual rate

We have already found out the important implications of risk and return relationship when evaluating the performance of investments. Investors consider risk as important as expected return. But risk is a lot harder to measure and quantify. Bodie, Kane and Marcus (2009, 113-119) observe:

While there are theories about the relationship between risk and expected return that would prevail in rational markets, there is no theory about the levels of risk we should find in the marketplace. We can at best estimate the level of risk likely to confront investors by analyzing historical experience. This situation is to be expected because prices of investment assets fluctuate in response to news about the fortunes of corporations, as well as to macroeconomic developments that affect interest rates. There is no theory about the frequency and importance of such events; hence we cannot determine a “natural” level of risk. Compounding this difficulty is the fact that neither expected returns nor risks are directly observable. We observe only realized rates of return after the fact.

Simplicity and quantifiability of return compared to risk make the rate of return the prime measure of comparability in this paper. The evaluation of risk is left out because it is a lot harder to determine, and there are questions raised about its comparability.

Because the analysis of funds and index performance is based on a 3- and 5-year period, we have to re-express each total return as a rate of return for a common period. We expressed all investment returns as an effective annual rate (EAR), defined as the percentage increase in funds invested over 1-year horizon. In general, we can relate the EAR to the total return, $R_f(T)$, over a holding period of length T by using the following equation as put forward by Bodie, Kane and Marcus (2009, 113–119): $EAR = (1 + R_f(T))^{1/T} - 1$

5 PERFORMANCE, RESULTS AND COMPARISON OF RETURNS

This chapter builds on theories presented in the previous segments and presents returns of market indexes and equity funds in capital markets of England, Germany, Slovenia, Croatia and Serbia. Return numbers were obtained from various electronic sources containing historic returns of indexes and equity funds in individual markets. These sources are cited below the tables. We picked index returns to represent market returns which are equivalent to passive management style of investing, and we compared them to performance of equity funds that invest in local market shares. It must be emphasized that, in obtaining the results, we faced several limitations that might have “contaminated” the real numbers. The findings and limitations are presented below.

5.1 Developed markets

The five-year period analysis of average equity fund returns compared to index benchmarks has confirmed conclusions of various other studies and theories about passive management outperforming active management. The returns presented below as per annum returns are weighted average returns that an index and/or equity fund achieved in one year. The EAR (effective annual rate) calculation is used to arrive at the average per annum returns.

The analysis of English and German markets took into account a five-year period from 22nd March 2006 to 22nd March 2011. In that timeframe, both major indexes delivered positive returns. English FTSE 100 total return index made an average return of 2.94 % per annum, while Germany’s DAX 30 made an average return of 2.71 % per annum in the five-year period. These results are below historical averages for the two markets. Average 20-year per annum return for FTSE 100 is 4.53 % (not total return) and for DAX 30 it is 7.67 % according to historical returns from Yahoo Finance (2011). These lower returns can be attributed to the global financial crisis which took out large chunk of market capitalization in most developed markets in 2008 and 2009.

Market indexes in Germany and England outperformed the equity funds. Equity funds in Germany made a 2.05 % average per annum return in the five-year period. English equity funds were not far behind with average returns of 1.87 % per annum.

These results confirm the superiority of passive management. Even though active managers should possess the ability to derive above average returns and eliminate unsystematic risk of their portfolios, on average, they fail to outperform the market.

5.1.1 Example: England

Table 1 shows the 5-year returns of London's main stock market index FTSE 100 and equity funds that invest only in English companies. FTSE 100 total return (TR) index performance is used for comparison to Germany's DAX 30 index that is a total return index in itself. The total return measure makes index returns more accurate as it includes reinvested dividends and other incomes that come from asset holdings of the portfolio, just as an individual stock income behaves. As the total return calculation is a more accurate measure, for the sake of this paper, index returns will be used with reinvested dividends.

Table 1: England's index versus equity funds 5-year performance

Index	Performance 5 years on 22.03.2011 Per annum EAR
FTSE 100 TR	2.94 %
Equity fund	
Equity funds average	1.87 %
BlackRock UK Equity	6.46 %
Jupiter Growth & Income	6.00 %
Investec UK Special Situations	5.05 %
Allianz RCM UK Mid Cap	4.93 %
Cazenove UK Dynamic	4.88 %
Jupiter UK Alpha	4.80 %
Fidelity UK Aggressive	4.65 %
Engage Mutual Invest Growth	4.61 %
AEGON Ethical Equity	4.45 %
Aviva Inv UK Focus	4.28 %
AXA Framlington UK Growth	4.16 %
F&C Institutional UK Equity	4.01 %
BlackRock Growth & Recovery	3.66 %
F&C UK Equity	3.17 %
Investec UK Alpha	3.07 %
IFDS Brown Shipley UK Flagship	2.98 %
Ignis UK Focus	2.96 %
Allianz RCM UK Equity	2.78 %
Fidelity Growth & Income	2.76 %
Charishare Common Invest	2.71 %
Aberdeen UK Mid Cap	2.67 %
CIS Sustainable Leaders Trust	2.62 %
Fidelity UK Growth	2.33 %
GAM UK Diversified	2.31 %
JPM UK Dynamic	2.27 %

Aberdeen UK Equity	2.24 %
Jupiter UK Growth	2.20 %
GAM MP UK Equity	2.09 %
Investec UK Blue Chip	2.07 %
BlackRock UK	1.79 %
CIS UK Growth	1.79 %
CF GHC MultiManager UK Equity	1.50 %
CAF UK Equitrack	1.34 %
Castlefield UK Equity	1.32 %
Halifax UK Growth	1.21 %
Artemis UK Growth	1.17 %
AXA General	0.94 %
Henderson Mainstream UK Equity	0.83 %
Aviva Inv Sustainable Future UK Growth	0.75 %
Insight UK Dynamic Managed	0.73 %
Aberdeen Multi Manager UK Growth	0.42 %
Ignis Balanced Growth	0.04 %
CF Real Life	0.00 %
Invesco Perp UK Aggressive	-0.01 %
F&C Stewardship Growth	-0.38 %
Allianz RCM UK Growth	-0.40 %
Dimensional UK Value	-0.81 %
Henderson UK Strategic Capital	-1.15 %
Invesco Perp UK Growth	-1.31 %
GLG UK Growth	-1.72 %
Artemis Capital	-1.79 %
JPM Premier Equity Growth	-2.40 %
Gartmore UK Growth	-2.78 %
Franklin Templeton Templeton UK Equity	-3.16 %

Source: Financial Times 2011 and Trustnet 2011.

The results for the 5-year performance of FTSE 100 and equity funds show that on average active managers underperformed the market by 1.07 % per annum. Equity funds on average recorded 1.87 % per annum return, while the market index of 100 most capitalized companies in England achieved 2.94 % per annum. These results confirm that the market index in England achieved superior returns compared to active managers, which is in line with the theory of passive management's superiority compared to active management.

5.1.2 Example: Germany

Table 2 presents the returns of Germany's main index DAX 30 and an average performance of 31 equity funds that invest in German stocks.

Table 2: Germany's index versus equity funds 5-year performance.

Index	Performance 5 years on 22.03.2011 Per annum EAR
DAX 30 TR	2.71 %
<hr/>	
Equity fund	Performance 5 years on 22.03.2011 Per annum EAR
Equity funds average	2.05 %
DWS Deutschland	7.65 %
Pioneer Inv German Equity A ND	5.59 %
Allianz RCM Aktien Deutschland	4.20 %
Metzler Aktien Deutschland	3.61 %
DWS Aktien Strategie Deutschland	3.25 %
UniDeutschland	3.12 %
LBBW Exportstrategie Deutschland	3.06 %
AXA Deutschland	2.71 %
Warburg Progress-Fonds	2.62 %
Monega Germany	2.53 %
SEB Aktienfonds	2.43 %
MEAG ProInvest	2.36 %
FT Frankfurt Effekten Fonds	2.23 %
Pioneer Inv Akt Deutschland A EU...	2.08 %
UBS (D) Aktienfonds Special I De...	2.06 %
DWS Investa	2.02 %
LBBW Aktien Deutschland	1.99 %
UniFonds	1.96 %
UniFonds -net-	1.86 %
DWS Deutsche Aktien Typ O	1.77 %
AL Trust Aktien Deutschland	1.33 %
DekaFonds CF	1.33 %
HSBC Trinkaus Capital	0.94 %
Deutschland-INVEST	0.91 %
Frankfurter-Sparinvest Deka	0.75 %
cominvest Fondak P	0.37 %
FVB-Deutscher Aktienfonds	0.12 %
Warburg Daxtrend-Fonds	0.10 %
Veri-Valeur Fonds	-0.14 %
Allianz RCM Adifonds	-0.23 %
DWS Select-Invest	-0.96 %

Source: Bloomberg 2011 and Morningstar 2011.

The results for Germany's active management and market return are similar to the example of England. Market index outperformed equity funds by 0.66 % per annum with +2.71 %

average per annum returns, while equity funds reported on average 2.05 % per annum. These results make another case for passive management in the observed 5-year period. A pattern in support of Malkiel's (2003) claims that on average passive management achieves superior returns compared to active management can already be seen.

5.2 Developing markets

The analysis of the three developing markets took into account a three-year period from 18th March 2008 to 18th March 2011. In that timeframe, all three indexes made negative returns. Croatia's Crobex was the best performer with annualised average return of -12.21 %, while Serbia's Belex 15 recorded an average return of -16.42 % per annum, and Slovenia's SBI TOP on average -16.48 % per annum. These negative returns can be explained by bad economic climate in the region, which is still persisting after the global financial crisis. Low returns can also be attributed to the fact that these index returns do not take into consideration dividend reinvestments as in the case of FTSE 100 and DAX 30. Total return calculation would boost the return numbers for indexes in developing markets by at least some percentage points. Taking into account developed markets, according to historical returns on finance.yahoo.com, the difference between returns for FTSE 100 and DAX 30 compared to their total return calculation was on average almost 4 % per annum. FTSE 100 recorded -0.80 % per annum while FTSE 100 TR recorded 2.94 % per annum. DAX 30 came up with similar results with -1.05 % per annum while its total return calculation ended up with 2.71 % per annum on average.

Equity funds investing predominantly in local markets performed better than their index counterparts. Results show that Croatia's equity funds in the three-year period made negative returns of -10.06 % per annum on average, which is more than 2 % better than the market performance. Slovenia's equity funds made average returns of -10.12 % per annum, which is a 6 % improvement over the performance of the market index. With -16.26 % per annum, equity funds in Serbia just slightly outperformed Belex 15.

At the first sight, these results show negative correlation with commonly accepted theories where passive management outperforms active management. After all, active managers achieved returns that outperformed the markets. But we can also look at these results from another angle. If the total return calculation for market indexes in developing markets was available, then the numbers would probably show superior returns compared to equity funds returns. That is, if we assumed dividend reinvestments made market returns calculation higher by similar portion than it did for English and German markets. In this case, Croatia's Crobex and Serbia's Belex 15 would outperform equity funds returns and Slovenia's SBI TOP would not be far behind.

But if we look at these results as they stand without any assumptions and consideration of limitations, then there are several different factors that potentially contributed to these results that go against commonly accepted theories. Firstly, an important factor is the sample size of the analysis. The sample size of equity funds is too small for definite conclusions. Secondly, the time period of three years is not a real representative of returns over longer periods. Thirdly, active managers might have a better insight into the fact denoting which companies are better positioned in the economic downturn to counter big losses, and might have shifted most of their funds into companies in defensive industries. Last but not least, there is the issue of market efficiency. Developing markets are not as efficient as markets in Western countries. Therefore, markets do not absorb information in an efficient manner that would be also quick enough, which can be exploited by investment professionals to derive above average returns. This issue is discussed in details in the next chapter.

5.2.1 Example: Slovenia

The index and equity funds returns for Slovenian market in the 3-year period are shown in Table 3.

Table 3: Slovenia's index versus equity funds 3-year performance

Index	Performance 3 years on 18.03.2011 Per annum EAR
SBI TOP	-16.48 %
Equity fund	Performance 3 years on 18.03.2011 Per annum EAR
Equity funds average	-10.12 %
Triglav Steber I	-5.57 %
Triglav Balkan	-6.20 %
Infond hrast	-6.62 %
Infond Delniški	-6.68 %
KD Balkan	-7.75 %
Alta Primus	-8.23 %
KD Galileo	-10.20 %
KD Rastko	-12.12 %
NLB Skladi – Slovenski delniški	-18.55 %
NFD1	-19.26 %

Source: Ljubljanska borza 2011 and Skladi 2011.

SBI TOP holds Slovenia's top ten liquid stocks and, as a blue-chip index, it presents the Slovenia's stock market. In the 3-year period, the average market return was -16.48 % per annum. Equity funds managed to perform considerably better with average returns of -10.12 % per annum. Here the professional money managers achieved superior returns

compared to the market. But it has to be emphasized that market returns, due to the lack of availability of this information, do not take into account dividend reinvestments and other income that would make SBI TOP's average return higher.

5.2.2 Example: Croatia

The next representative for developing markets is Croatia, whose performance of the market and actively managed funds is presented in Table 4.

Table 4: Croatia's index versus equity funds 3-year performance

Index	Performance 3 years on 18.03.2011 Per annum EAR
Crobex	-12.21 %
Equity fund	Performance 3 years on 18.03.2011 Per annum EAR
Equity funds average	-10.06 %
ZB trend	+3.11 %
HI-Growth	-6.35 %
Prospectus JIE	-8.80 %
Erste Adriatic equity	-9.29 %
ST aggressive	-10.20 %
VB High Equity	-10.31 %
PBZ equity fund	-10.55 %
Poba Ico equity	-12.39 %
FIMA equity	-17.06 %
KD Victoria	-18.73 %

Source: Zagrebačka burza 2011 and HRportfolio 2011.

Similarly as in the case of Slovenia, equity funds achieved the average return -10.06 % per annum, which is better than the average market performance of -12.21 % per annum. We can already spot a trend that active funds are winning the battle of returns for the observed period in developing markets. But on the other hand, if a total return calculation was available, it would probably show that Crobex outperformed equity funds. This would make a case for passive management in developing markets as well.

5.2.3 Example: Serbia

Table 5 gives an idea of how Serbia's Belex 15 market index performed against eight equity funds.

Table 5: Serbia's index versus equity funds 3-year performance.

Index	Performance 3 years on 18.03.2011 Per annum EAR
Belex 15	-16.42 %
Equity fund	Performance 3 years on 18.03.2011 Per annum EAR
Equity funds average	-16.26 %
Citadel triumph	-7.26 %
Delta plus	-13.52 %
FIMA ProActive	-16.04 %
Delta dynamic	-16.18 %
Iirika Global	-16.43 %
Alta Balkan Select	-16.71 %
Focus premium	-20.91 %
Raiffesien akcije	-23.06 %

Source: Beogradska berza 2011 and Mojnovac 2011.

The results for Serbia are much tighter than in previous cases of developing markets, but active managers again managed to outperform the market with -16.26 % per annum on average. Belex 15 recorded -16.42 % average returns per annum. Taking dividend reinvestments into consideration, this result would be exactly opposite with Belex 15 achieving superior returns to active managers. This way Serbia would, as Croatia, make another case for passive management.

5.3 Limitations and variables with derivation of the results

In the research, we faced several limitations which affected final results in some way or another. With regard to English and German markets, the limitations in getting the results for developed markets were few. A small margin of error can be attributed to the accessibility of information and the size of the markets. Germany and England are the two biggest and the most developed European markets. Therefore, funds that fitted the criteria for the analysis were in abundance. The only concern here was the selection process of equity funds included in the analysis. With hundreds of suitable funds that fitted the criteria, certain equity funds had to be chosen to make the sample size tolerable. The method used was random picking, where we randomly picked equity funds from a table on the website that had equity funds listed in alphabetical order. There was no preference in picking the equity funds used in the analysis; it was done intuitively until the sample size was sufficient. Random stock picking might contribute to small sampling error.

The greatest limitation was probably the lack of comparable information for market index returns. Most of the indexes do not use dividend reinvestment and other income in the calculation of their returns even though it represents a more correct measurement. This is also one of the reasons why we chose to use total return calculation in this paper. Total return index returns were obtained for FTSE 100 and DAX 30, but that was not the case for developing markets. For the sake of comparability, we had to use assumptions based on the difference of returns between total return and normal calculation for FTSE 100 to draw conclusions.

In the case of developing markets of Slovenia, Croatia and Serbia, the variables and limitations in getting valid results are more persistent and in greater numbers. Therefore, the results have to be taken into account within the means of limitations. These markets are still developing and available information is not in abundance as in the case of England and Germany. In addition, small market size contributes to smaller number of funds, few of which fit the criteria for the analysis. The criteria set are:

- Funds have to invest predominantly in equity – Equity funds.
- Around one third of investments and above have to be invested in the local market.

After the funnelling process of selecting funds that fit the criteria, only around ten equity funds in each of the analysed developing markets made the cut. The first limitation here was the sample size. For limiting the sample size error, a sample of at least thirty is required as suggested by statisticians. A small time frame of only three years is the second limitation for the analysis. For the sake of comparability, the five-year period analysis was carried out, but it turned out that most of the suitable equity funds in developing markets were less than five years old and therefore not comparable with each other due to different market conditions and economic cycles at certain points in time. By taking the three-year observation period, most of the funds can be compared. The final limitation that contributed most to the approximation error was that only a small number of funds invested purely in equity and local markets. This is due to the small nature of the analysed markets. Therefore, the returns of these funds are not a real performance representation of investments in local equity markets and cannot be compared to index benchmarks. The recalculation of comparable returns was carried out by using weights. We assigned weights to each fund according to the percentage of investments in certain asset type (e.g. bonds) and location (e.g. France), and obtained returns for each of the weight. Approximations had to be used as composition of portfolio varies over time. Data that applied to the last day of the analysis on 18th March 2011 in developing markets was used for composition of portfolios, bond yields, deposit interest rates and returns on equity. When assigning returns on weights for foreign investments in equity, we used average returns of main local indexes in the observed period. This information was obtained from the website bloomberg.com. For investments in bonds we assumed a 4.50 % yield. Reference bond yield was used for all analysed developing markets. This was a 10-year bond issue of Republic of Slovenia in January 2011 which fetched a 4.375 % yield (Ministrstvo za Finance 2011).

Considering funds spread bond investments globally and if we assume those investments were spread equally in developed and developing markets, with USA 10-year bonds yields in the period providing slightly over 3 % returns (CNN Money 2011) as one reference point and other countries with lower credit ratings such as Croatia provide 6.375 % yield over 10 years (NLB 2011) as another reference point, an assumption of 4.50 % bond yield cuts closely through the middle. For deposits we used interest rates provided by the Raiffeisen bank (Raiffeisen bank 2011) that operates in all of the analysed developing markets. These investments are needed for liquidity purposes and therefore we assumed a short period of deposits ranging from 91–180 days. Interest rates in Raiffeisen bank in Slovenia provide a 1.40 % per annum return, which is also assumed for Croatia and Serbia. More insight into the data used for calculating local equity returns in developing markets is provided in Appendix 1 and Appendix 2, where returns on foreign investments and other asset classes are presented and composition of portfolios in developing markets is provided. After all the returns data was gathered, and weights were assigned according to composition of portfolios, we eliminated returns in investments that were not part of equity and local market investments, and derived “pure” local market equity returns that were now comparable to local market indexes. This recalculation did not completely eliminate the effects of investments in other asset classes and foreign investments because of approximations; instead it mitigated them enough to make returns comparable.

6 MARKET EFFICIENCY

The results of the analysis can be interpreted from the point of view of market efficiency. Markets differ in size, stages of development, liquidity, and several other factors which translate into different stages of market efficiency. The more efficient the market, the harder it is for active managers to outperform the benchmark index. Some of the analyzed markets are more efficient than others. In less efficient markets, there are greater chances for active managers to spot predictable patterns and arbitrage opportunities, as well as find investing techniques that work. This chapter explains the theory behind market efficiency and links it with the findings and the results of the analysis.

6.1 The theory behind market efficiency

“The term market efficiency in capital market theory is used to explain the degree to which stock prices reflect all available, relevant information,” describes Gupta (2007). The theory behind the efficient market hypothesis (EMH) was formed by Samuelson (1965) who anticipated random fluctuation of asset prices. Depending on the efficiency of markets, investors decide what investment strategy to pursue. One way for investors to achieve superior returns is to identify and find miss-priced assets. But in an efficient market this search would be in vain as it impossible to find arbitrage opportunities and miss-priced assets with market prices reflecting all available information at the moment of their availability.

If we were to answer the question about what comprises efficient markets, the correct reply would be that an efficient market is transparent, timely and accurate. This means that transactions are carried out in time and at the right quantity. Another quality of efficient markets is liquidity, which is influenced by the number of buyers and sellers that should provide price continuity, meaning prices of new trades are close to prices of previous trades. Another quality is low cost of investing. Market and brokerage costs should be as low as possible for efficient functioning of the markets. And last but not least, informational efficiency tackles how quickly prices adjust to reflect new information. The qualities of efficient markets differ from market to market, and this is why Fama (1991) further categorized market efficiency into three forms – weak, semi-strong and strong. In weak-form market efficiency prices reflect all past market information, meaning no advantage can be gained from looking at past market information. According to this theory, technical analysis does not work. In semi-strong form, prices reflect all past information and all the available information from financial statements and economic data – public information. Fundamental analysis does not bring any beneficial advantage in semi-strong efficient markets. Strong-form efficient markets are more a thing of a theory than reality. Besides reflecting all the past and public information, all the private information is also reflected in market prices. This means that there are no profit opportunities from insider trading and top management

information. In strong-form market efficiency, price movements conform to random walk theory and therefore cannot be predicted.

Rutterford (1993) depicts the differences between efficient and inefficient markets:

In an efficient market, prices of the assets will reflect markets' best estimate for the risk and expected return of the asset, taking into account what is known about the asset at the time. Therefore, there will be no undervalued assets offering higher than expected return or overvalued assets offering lower than the expected return. All assets will be appropriately priced in the market offering optimal reward to risk. Hence in an efficient market, an optimal investment strategy will be to concentrate on risk and return characteristics of the asset and/or portfolio. However, if the markets were not efficient, an investor will be better off trying to spot winners and losers in the market, and correct identification of miss-priced assets will enhance the overall performance of the portfolio.

When discussing the efficient market hypothesis, we have to mention the random walk hypothesis which relates to the EMH and tries to explain certain aspects of it. In 1900, Bachelier introduced the idea that asset prices may follow a random walk pattern explains Poshakwale (1996). The random walk hypothesis is used to explain the successive price changes which are independent of each other.

It is also important to understand the mechanisms behind market efficiency, especially in today's globalised world where emerging markets are on their way to take the centre stage in financial markets through global integration and free movement of investments across the borders. It is of no surprise that Western countries have more efficient markets, whereas emerging and developing economies have to put up with weak-form market efficiency and market inefficiency finds Gupta (2006).

In recent times, many countries' economies opened up after successful reforms that tried to bring them closer to the world through globalisation. These quickly developing economies are referred to as emerging markets. Their economies are growing rapidly because of huge inflows of capital, mainly from the Western countries. This is a win-win situation for both sides as with arrival of capital, the standard of living in emerging economies is improving, and, on the other side, investors that contribute this capital usually make a nice return on their investment besides additional international diversification that comes with it. There are not that many studies on market efficiency in emerging markets. The ones that were carried out are described next. The study by Chan, Gup and Pan (1997) shows that some big Asian markets are weak-form efficient. Poshakwale (1996) came to a similar conclusion in Indian stock market. Weak-form efficiency was also proven by Dickinson and Muragu (1994) for Kenyan market, and Cheung, Wong and Ho (1993) for Korea and Taiwan. There are also some studies that suggest semi-strong form efficiency for Australian market, Groenewold and Kang (1993), and in Malasia, Barnes (1986). More recent studies found weak-form efficiency in Seoul stock market by Ryoo and Smith (2002), Cheung and Coutts (2001) in Hong Kong,

Dezellan (2000) in Ljubljana stock market, Buguk and Brorsen (2003) found a connection to weak-form efficiency in Turkey, and Hajek (2002) in Czech Republic. Studies for China by Lee, Chen and Rui (2001) and the Middle East by Abraham, Seyyed and Alsakran (2002) suggest market inefficiency.

Other researches were carried out for European markets by Andrew Worthington and Helen Higgs (2004) who tested the random walk theory in sixteen developed markets – Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom – and four emerging markets – Czech Republic, Hungary, Poland and Russia. Results show that price movements in Germany, Ireland, the Netherlands, Portugal and the United Kingdom confirm to the random walk theory in serial correlation test, while for other markets random walk can be rejected. The results of the multiple variance ratio show that random walk can be confirmed for Germany, Ireland, Portugal, Sweden and the United Kingdom, while France, Finland, the Netherlands, Norway and Spain meet only parts of the requirements of a strict random walk. Out of developing markets, random walk in daily price movements can be confirmed only for Hungary.

Mobarek and Keasey (2002) conclude that weak-form efficiency is most common for developed economies. That means the successive returns are independent and follow random walk depicts Fama (1965). In contrast, the research findings on the market of developing and less developed countries are somewhat less certain and more controversial. There are studies by numerous researchers that reach opposing conclusions; ones are in support of random-walk hypothesis while others reject it. Barnes (1986), Dickinson and Muragu (1994), Urrutia (1995), and Ojah and Karemera (1999) find evidence of weak form efficiency and cannot reject the random-walk hypothesis in emerging markets. On the other side, Roux and Gilberson (1978), Harvey (1995), Claessens, Dasgupta and Glen (1995), Poshakwale (1996) and Nourredine (1998) find the evidence of non-randomness stock price behaviour and reject the weak-form efficiency in the developing and emerging markets.

According the conclusions of many academics on market efficiency, we can assume that developed markets presented in the analysis (Germany and England) can be assigned a semi-strong form of market efficiency. On the other hand, results for developing markets appear to have an element of contradiction with conclusions ranging from weak-form market efficiency to market inefficiency. As for the developing markets of Slovenia, Croatia and Serbia, several assumptions can be made. Based on the research conducted by Dezellan (2000), Slovenian stock market appears to be weak-form efficient. No studies of this kind have been conducted for Croatia and Serbia, but considering the development stage of those two markets, market inefficiency can be assumed.

6.2 Results of the analysis and a link to market efficiency

Considering developed markets of the United Kingdom and Germany have proven to be weak-form efficient, and assuming that developing markets of Slovenia, Croatia and Serbia are weak-form efficient / inefficient, according to various researches of developing markets, we would expect that equity funds in less efficient markets would perform better (relative to local markets) on per annum basis compared to more developed markets. This is due to better predictability of market movements in less efficient markets, which is covered by random walk hypothesis.

As mentioned earlier in the paper, Admati and Pfleiderer (1997) suggest that active managers are engaged in a zero-sum game, where one side takes one position and the opposing side takes the opposite view of the trade. Across all of the active funds, these deviations cancel out and this is why average performance of active funds cannot be greater than the performance of the market. When digging deeper inside this logic, it becomes clear that it holds only for more efficient markets. To make the point clearer, let us present the idea. As suggested in the chapter about the link between investment strategies and the EMH, markets are full of irrational investors, many of whom are not institutional investors or investors who possess the knowledge of active fund managers. Two sides are involved in a stock market transaction: buying and selling side. There are instances where two active fund managers find themselves on the opposing sides and the gains of the winners are exactly offset by the losses of losers on average as Admati and Pfleiderer (1997) suggest. But that is not always the case. As there are plenty of other investors in the market, either irrational or those with the lack of knowledge, the zero-sum game theory does not hold. For example, a portfolio manager in less efficient market takes position that he will buy certain shares because of the information he knows will cause the share price to rise, but it has not been completely calculated into the price on the market yet. And on the other side, there is an investor that does not follow markets closely and sells these shares to a portfolio manager. The outcome of this situation is that an active manager is a clear winner. And if subsequent transactions follow similar pattern that are mostly in favour of professional money managers and the gains are not offset by below average returns, then active portfolio managers just might have the upper hand over the market returns in less efficient markets.

The results of market and equity funds' returns in the observable period show a mixed picture. On the one hand, passive management in England and Germany showed its' superiority against active management and, on the other hand, the same does not hold for Slovenia, Croatia and Serbia, where active managers had an upper hand over the market returns. Equity funds in developed markets achieved an average return of 0.87 % per annum below the returns of index benchmarks (average returns of England and Germany examples combined), while active managers in developing markets outperformed the index benchmarks on average by 2.89 % on per annum basis. Based on these results, we could assume that active managers

in developing markets are taking advantage of investing in less efficient markets through exploitation of market inefficiencies; such as arbitrage opportunities, less efficient information dissemination, etc. This holds true if we do not take into account limitation of not using a total return calculation for market indexes in developing markets. If we take dividend reinvestments into consideration, we can assume that active managers in developing markets did not achieve above average returns when compared to the market (this case is more firm for Croatia and Serbia), and the difference between market index and equity funds returns would be very close to developed markets. In this case, active managers in developing markets were not able to make the most of market inefficiencies and we could argue that portfolio managers in England and Germany performed better relatively to their counterparts in Slovenia, Croatia and Serbia; that is because they work in more efficient markets where new information gets digested very quickly and it is therefore harder to make trades that will bring above average returns.

7 CONCLUSION

Several different theories and views on the subject of performance of passive and active management in developed and developing markets have been put forward in the early chapters. According to the most recently accepted theories on active versus passive management and the efficient market hypothesis, the final results are mixed. Market indexes outperformed equity funds in England and Germany, whereas active management proved to be more successful in Slovenia, Croatia and Serbia. In the first case, the observation is in line with commonly accepted theory where on average passive management outperforms active management. The latter case of developing markets puts this theory to the test as active managers had an upper hand in the observed period.

This opposite result can be viewed and explained from markets' efficiency point of view where we would expect that equity funds would perform slightly better relative to market indexes in less efficient (developing) markets due to possible exploitation of market inefficiencies. Another possible explanation for developing markets returns' deviation away from commonly accepted theory of passive managements' superiority could be the number of limitations we faced to get to the numbers used in the analysis. The following assumption can be made: if the total return calculation was available for developing markets, index returns would most probably be higher than the returns of equity funds. This would provide results for developed and developing markets that are consistent with findings of many academics that claim superiority of passive management. Other limitations that stood in the way of obtaining 100 % accurate results were a short observation time frame – three and five years, small sample sizes in the case of developing markets (possible sampling error), and the composition of equity funds in developing markets where large portions of asset holdings were foreign and did not consist of 100 % equity.

Nevertheless, even if there were no limitations, we could assume that the results for developing markets show the correct picture, although contradicting the commonly accepted theories. Firstly, many academics came to the same conclusions as this paper does. Secondly, the used short observation time frame makes this research a short-term analysis, and anything is possible in the short-term. Even active managers can outperform the market in the short-run. But for now, let us believe Warren Buffett and those academics that make a claim for passive management. Mathematical and statistical laws kick in only in the long run, and they are almost never wrong. Also, the numbers of this analysis do not lie. They show that passive management is clearly the better investment option in England and Germany than investing in equity funds. And taking limitations in consideration, the results would be very similar for Slovenia, Croatia and Serbia as well. The conclusion therefore is clear: passive management wins the battle of returns compared to active management.

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APENDICES

- Appendix 1 Returns on foreign investments and returns of other asset classes of equity funds in developing markets
- Appendix 2 Composition of assets of equity funds in developing markets
- Appendix 3 Summary of diploma thesis in Slovene

RETURNS ON FOREIGN INVESTMENTS AND RETURNS OF OTHER ASSET CLASSES OF EQUITY FUNDS IN DEVELOPING MARKETS

Investment	Performance 3 years on 18.03.2011 Per annum EAR
Deposits:	1.40 %
Bonds:	4.50 %
Foreign investments:	
Turkey	+17.14 %
Croatia	-12.21 %
Serbia	-16.42 %
Greece	-16.67 %
Bosnia and Herzegovina	-16.06 %
USA	-1.27 %
Germany	+1.38 %
Switzerland	-4.18 %
Russia	+2.81 %
France	-4.47 %
Belgium	-8.51 %
Austria	-6.88 %
Italy	-9.34 %
Great Britain	+1.84 %
Netherlands	-5.00 %
India	+6.48 %
China	-7.41 %
Luxemburg	-9.37 %
Brazil	+3.68 %
Euro-area	-6.72 %
Finland	-1.12 %
Denmark	+0.46 %
Romania	-7.00 %
Bulgaria	-18.00 %
Macedonia	-16.35 %
Poland	+0.46 %
Japan	-7.16 %
Canada	+2.12 %
Former Yugoslavia area	-15.32 %
Czech Republic	-6.11 %
Hungary	+0.60 %
Other	-5.87 %

Source: Bloomberg 2011, Raiffeisen bank 2011, Ministrstvo za Finance 2011, CNN Money 2011, NLB 2011

COMPOSITION OF ASSETS OF EQUITY FUNDS IN DEVELOPING MARKETS

The tables below show the composition of equity funds in Slovenia, Croatia and Serbia on 18th of March 2011. Percentages of investments in foreign assets and in other asset classes are presented, the rest are local equity investments for which we then calculated the returns using weights.

Composition of Slovenian equity funds:

Equity fund	Portfolio composition
Trig lav Steber I	Deposits 4 %, USA 18 %, Ger 15 %, Ita 9 %, Austria 4 %, Fra 3 %, Rus 3 %, GB 2 %, Swi 2 %, Other 9 %
Trig lav Balkan	Deposits 5 %, Tur 16 %, Cro 14 %, Serbia 13 %, Greece 11 %, BIH 11 %, USA 3 %, Other 5 %
Infond hrast	Bonds 32 %, Deposits 6 %, Fra 9 %, Ger 7 %, Net 6 %, Swi 5 %, Austria 4 %, USA 4 %, China 3 %, Other 8 %
Infond Delniški	Bonds 5 %, Deposits 6 %, Ger 13 %, USA 11 %, Fra 7 %, Rus 6 %, Net 5 %, Austria 4 %, Ind 4 %, Swi 4 %, Other 14 %
KD Balkan	Rom 21 %, Cro 14 %, Serbia 14 %, Bul 16 %, Mac 6 %, BIH 4 %, Other 3 %
Alta Primus	Bonds 29 %, Deposits 6 %, Ger 14 %, Swi 6 %, Rus 4 %, Fra 4 %, USA 4 %, Bel 3 %, Austria 3 %, Other 3 %
KD Galileo	China 14 %, USA 11 %, Ger 7 %, Global 6 %, Rus 5 %, Fra 4 %, Ind 4 %, Greece 3 %, Lux/Bra/EUR/GB 3 %, Ita 2 %, Net 2 %, Fin 2 %
KD Rastko	Deposits 5 %, Ger 12 %, Fra 9 %, Ita 8 %, Rus 7 %, GB 6 %, Greece 4 %, Lux 3 %, Net 3 %, Den 3 %, Fin 2 %, Cro 2 %
NLB Skladi – Slovenski delniški	Deposits 4 %
NFD1	Deposits 20 %

Source: Skladi 2011

Appendix 2

Composition of Croatian equity funds:

Equity fund	Portfolio composition
ZB trend	Bonds 15 %, Deposits 11 %, USA 30 %, Jap 9 %, Can 7 %, GB 5 %, China 4 %, Rus/Ger 3 %, Fra 3 %, Other 9 %
HI-Growth	Deposits 20 %, EU 14 %, Other 43 %
Prospectus JIE	Rus 18 %, Serbia 14 %, Greece 9 %, Austria 8 %, Mac/Rom/GB 6 %, USA 3 %
Erste Adriatic equity	Deposits 8 %, Bonds 4 %, Slo 11 %, Serbia 9 %, China 4 %, BIH 1 %
ST aggressive	Deposits 20 %, Bonds 12 %, Ger 22 %, USA 11 %
VB High Equity	Deposits 16 %, EU 34 %, USA 23 %
PBZ equity fund	Deposits 6 %, Bonds 3 %, YUG 17 %, EU 9 %, Rus 6 %, Other 16 %
Poba Ico equity	Deposits 29 %, Bonds 15 %, Ger 24 %, Pol 16 %, Net 6 %
FIMA equity	Deposits 20 %, BIH 8 %, Serbia 6 %, Romunija 6 %, USA 2 %
KD Victoria	Deposits 9 %, Bonds 2 %, EU 13 %, BIH 3 %

Source: HRportfolio 2011

Composition of Serbian equity funds:

Equity fund	Portfolio composition
Citadel triumph	Deposits 10 %, EU 10 %
Delta plus	Bonds 35 %, Deposits 10 %, EU 20 %
FIMA ProActive	Deposits 10 %, EU 10 %
Delta dynamic	Deposits 20 %, EU 20 %
Iilirika Global	Deposits 10 %, Bonds 10 %, USA/Tur 12 %, Pol 8 %, Fra 7 %, Cze 6 %, Rom/Cro/GB/Slo 2 %, Hun 5 %
Alta Balkan Select	Deposits 6 %, BIH 27 %, Mac 17 %, Greece 7 %, Slo 5 %, Other 9 %
Focus premium	-
Raiffisien akcije	Deposits 30 %, Bonds 3 %

Source: Mojnovac 2011

SUMMARY OF DIPLOMA THESIS IN SLOVENE

To diplomsko delo je namenjeno analizi aktivnega in pasivnega managementa investicij na razvitih (Nemčija in Anglija) in razvijajočih se trgih (Slovenija, Hrvaška in Srbija). Pri tem je glavno vprašanje, na katerega poskušamo odgovoriti, katera strategija upravljanja sredstev - aktivni ali pasivni management - v povprečju prinese večje donose. Analiza je podkrepljena s številnimi teorijami svetovno znanih akademikov in raziskovalcev, ki skušajo s svojimi pogledi preko racionalne razlage predstaviti kompleksnost gibanj svetovnih trgov. Na tej poti so poleg aktivnega in pasivnega managementa predstavljene tudi teorije o učinkovitosti trgov in vrednotenju odnosa med tveganji in donosi, ki služijo kot podpora razlagi rezultatov analize. Preden predstavimo rezultate analize, bomo navedli teoretične predpostavke.

V grobem obstajata dve strategiji upravljanja finančnih sredstev: aktivni in pasivni management. Strategija, ki poskuša premagati donose trga z identificiranjem podcenjenih in precenjenih delnic se imenuje aktivni management, medtem ko gre pri strategiji pasivnega upravljanja skladov za posnemanje donosov določenih finančnih trgov. Vprašanje, ki se pri tem poraja je, katera strategija dosega večje donose. Jensen (1968) je bil eden izmed začetnikov, ki so preučevali to tematiko. Njegova analiza je pokazala, da je pasivno upravljanje sredstev zmagovita strategija. Njegovo logiko sta povzela Otten in Bams (2002), katerih sklep je, da so neto donosi aktivno upravljanih skladov (po stroških) manjši od primerljivega tržnega indeksa. Pozneje so se pojavile študije, ki so izpodbijale to teorijo. Grinblatt in Titman (1989, 1992) ter Ippolito (1989) so prišli do zaključkov, da investicije aktivnih skladov vsebujejo dovolj privatnih informacij za doseg nadpovprečnih donosov. Prav tako so Hendricks, Patel in Zeckhauser (1993), Goetzmann in Ibbotson (1994) ter Brown in Goetzmann (1995) opazili doslednost donosov aktivnih skladov na kratek rok. Vendar te teorije niso bile nikoli sprejete v širših akademskih krogih. Carhart (1997) jih je izpodbijal s sklepom, da ti dokazi ne podpirajo nadpovprečnega upravljanja sredstev, temveč gre samo za enostavne strategije zagona. Zaključke Jensena (1968) sta podprla tudi spoštovana akademika Malkiel (1995) in Gruber (1996), katerih teorija je sprejeta še danes. Pravita, da gre pri starejših študijah, ki podpirajo aktivni management, za »pristranskost preživelih«. Ko iz enačbe izločimo ta učinek, dosegajo aktivno upravljeni skladi v povprečju nižje donose od primerljivih tržnih indeksov za višino stroškov, ki jih aktivni managerji zaračunajo investitorjem. Indeks skladi tako običajno dosegajo višje donose, prav tako pa je z njimi povezanih manj stroškov. Delež aktivnih skladov bo seveda v nekem obdobju vedno dosegal donose višje od trga, vendar ob pogledu na celotno sliko, zgornja teorija drži.

Admati in Pfleiderer (1997) lepo povzameta, zakaj je pasivni management zmagovita strategija, in pravita, da aktivno upravljeni skladi vlagajo v portfolijo delnic, ki so del tržnega indeksa, ter da manager lahko odstopa od svojega nabora investicij samo v primeru, če nekdo drug odstopa v nasprotno stran. Če združimo vse aktivne sklade, se ta odstopanja izničijo in

Appendix 3

tako povprečna donosnost aktivnih skladov ne more biti večja od donosa trga. Aktivni managerji sodelujejo v »zero-sum« igri, kjer se dobički zmagovalcev izničijo z izgubami poražencev.

Zakaj kljub vsem tem dognanjem velik delež vlagateljev še vedno vlaga v aktivno upravljane sklade? Odgovor se verjetno skriva v psihologiji vlagateljev. Veliko vlagateljev ima raje priložnost za doseganje nadpovprečnih donosov preko aktivnih skladov, kar jim tržni indeksi ne morejo ponuditi. Aktivnih skladov, ki dosegajo nadpovprečne donose, pa je manj kot tistih, ki dosegajo podpovprečne donose, saj aktivni skladi v povprečju dosegajo podpovprečne donose. Investitorji v aktivne sklade so tako pripravljene sprejeti višje provizije in tveganje za doseganje povprečno nižjih donosov v zameno za nadpovprečne donose peščice aktivnih skladov. Kljub temu veliko vlagateljev verjame, da so prav oni tisti, ki posedujejo pravo znanje in imajo nadpovprečne sposobnosti prepoznavanja tržnih trendov. V bistvu so prepričani, da so sposobni izdelati napoved, ki je bolj pravilna od soglasja trga (Redhead 2008, 331-332).

Po drugi strani pa pasivni management ne poskuša premagati trga, saj ga skuša posnemati. To je izvedljivo z vlaganjem v skoraj vse delnice na trgu ali v vse delnice posameznega tržnega indeksa. Na ta način se ustvari portfolijo, ki posnema tržni indeks in vsebuje enake delnice v enakih razmerjih kot indeks. Na ta način bodo donosi pasivnega sklada enaki donosu trga ali tržnega indeksa. Malkiel (2003) trdi, da strategija pasivnega upravljanja deluje dobro, ker so delniški trgi presenetljivo učinkoviti pri »prebavljanju« in prilagoditvi na nove informacije. Ko pride na trg nova informacija, ki bo vplivala na ceno delnic, je potrebnih samo nekaj trenutkov, da vlagatelji absorbirajo informacijo, kar se pokaže v popravku cen delnic. V takšnem primeru govorimo o učinkovitih trgih. Vendar se trgi razlikujejo po razvitosti in številu tržnih udeležencev, ter posledično v likvidnosti in prenosu informacij. Če trgi počasi reagirajo na novo informacijo, in če obstaja veliko arbitražnih priložnosti, potem govorimo o neučinkovitih trgih. Dejstvo je, da je bilo najdenih veliko predvidljivih vzorcev in tržnih anomalij (npr. počasna reakcija na novice o dogodkih), ki jih lahko večji vlagatelji potencialno izkoristijo ter s tem dosežejo nadpovprečne donose. Kljub temu Malkiel (2003) verjame, da teorija o učinkovitih trgih drži, saj pravi, da tudi, če so trgi samo delno učinkoviti, so stroški povezani z izkoriščanjem tržnih neučinkovitosti preveliki za doseganje nadpovprečnih donosov, ker so anomalije običajno zelo majhne.

Ne moremo zanikati, da iracionalnega vedenja na kapitalskih trgih ni, in da investitorji ne delajo sistemskih napak. To področje je bilo v zadnjem času predmet razprav finančnih ekonomistov in psihologov, ki poskušajo najti razlago za odločitve in investicije vlagateljev, ki pogosto odstopajo od soglasja trga. Dober primer so »investicijski mehurčki«, ki nastanejo zaradi napak pri vrednotenju sredstev. Ti primeri namigujejo na motnje v učinkovitosti trgov, če ne celo na neučinkovitost trgov. Vendar po drugi strani obstaja pomemben faktor, ki govori

v prid učinkovitosti trgov. Gre za pomanjkanje jasnih arbitražnih priložnosti. To pomeni, da ni skoraj nobene strategije vlaganja, ki bi vlagateljem omogočala doseči donose brez tveganja in posledično nadpovprečne donose. Iskanje predvidljivih vzorcev donosov finančnih sredstev se je končalo z malo uspeha, kar pomeni, da so donosi zelo blizu serijski nekorelaciji. To je zagotovo v prid teoriji učinkovitih trgov in posledično pasivnemu managementu.

Kljub temu da vsi dokazi kažejo v prid pasivnemu managementu, se pojavljajo raziskovalci, ki pravijo drugače. Shiller (2000) pravi, da če iracionalni vlagatelji oblikujejo cene na trgu v zadostno veliki količini, lahko pričakujemo, da bodo racionalni profesionalni vlagatelji, ki so plačani za to, da premagajo trg, dosegli nadpovprečne donose. Po tem argumentu bodo profesionalni vlagatelji kot skupina dosegli nadpovprečne donose, saj se iracionalni vlagatelji znajdejo v spodnjem delu distribucije donosov. Prav tako so številne študije pokazale predvidljivost cen na trgih, kar nakazuje, da so nekateri trgi neučinkoviti. Campbell, Lo in MacKinlay (1997) pravijo, da lahko donosi na trgih tvorijo predvidljive vzorce, ki se jih da izkoristiti. DeBondt in Thaler (1995) skleneta, da cene delnic v veliko primerih zaidejo stran od svojih temeljnih vrednosti. Te odmike lahko za dosego nadpovprečnih donosov izkoristijo vlagatelji s pravim znanjem.

Čeprav obstaja kar nekaj dokazov, ki govorijo v prid aktivnemu managementu, se splošno mnenje v akademskem svetu še vedno nagiba k pasivnemu managementu. Kljub obstoju tržnih neučinkovitosti, te ne zagotavljajo zadostne priložnosti za konstantno doseganje nadpovprečnih donosov. Do tega pride zato, ker lahko racionalni vlagatelji opazijo predvidljive vzorce in arbitražne priložnosti, ter hitro investirajo tako, da se tržne nepravilnosti odpravijo. Kot kaže, je iz tega »dvoboja« pasivni management izšel kot zmagovalec. Sedaj pa bomo predstavili rezultate analize donosov aktivnega in pasivnega managementa na dveh razvitih trgih (Nemčija in Anglija) in treh razvijajočih se trgih (Slovenija, Hrvaška in Srbija) ter pogledali, če se ugotovitve ujemajo s splošno sprejetimi teorijami.

Rezultati donosov posameznih skladov in indeksov morajo biti med seboj primerljivi, zato smo za potrebe te naloge rezultate izrazili po načelu EAR (Effective Annual Return). Ko vrednotimo rezultate investicij, moramo sicer upoštevati tudi tveganje. Vendar je tveganje težko količinsko ovrednotiti in ga zato pri naši primerjavi ne bomo upoštevali.

Pasivna strategija vlaganja je predstavljena z donosi glavnih indeksov, ki so predstavniki donosov posameznih delniških trgov. Te donose smo nato primerjali s povprečnimi donosi delniških skladov, ki vlagajo v domače trge. Pri tem je potrebno poudariti, da smo pri pridobivanju rezultatov naleteli na številne omejitve, ki so po vsej verjetnosti rezultate »onesnažile«. Te omejitve so opisane v nadaljevanju, še prej pa poglejmo rezultate raziskave.

Appendix 3

Za razvita trga Anglije in Nemčije smo zajeli donose indeksov in delniških skladov za obdobje petih let. Analiza je pokazala, da so donosi glavnih indeksov, v primerjavi s povprečnimi donosi delniških skladov, v skladu s splošno sprejeto teorijo o superiornosti pasivnega managementa. V preučevanem obdobju od 22. marca 2006 do 22. marca 2011 sta najpomembnejši angleški in nemški indeks dosegla pozitivne donose. Angleški FTSE 100 Total return indeks je dosegel povprečni letni donos 2.94 %, medtem ko je nemški DAX 30 dosegel 2.71 % povprečni letni donos. Oba tržna indeksa sta dosegla višje donose od primerljivih delniških skladov v posamezni državi. Delniški skladi v Nemčiji so v povprečju dosegli 2.05 % letni donos, angleški delniški skladi pa so povečali premoženje investitorjev za 1.87 % na povprečni letni ravni. Ti rezultati potrjujejo superiornost pasivnega managementa. Čeprav bi aktivni managerji morali posedovati znanje za doseganje nadpovprečnih rezultatov in se znebiti nesistematičnega tveganja, v povprečju dose gajo manjše donose kot trg.

Za razvijajoče se trge smo naredili primerjavo med donosi indeksov in delniških skladov za trge Slovenije, Hrvaške in Srbije. Preučevano obdobje je za tri leta od 18. marca 2008 do 18. marca 2011. V tem času so vsi trije glavni indeksi na posameznem trgu dosegli negativne donose. Najboljši donos je dosegel hrvaški Crobex s povprečnim letnim donosom -12.21 %, sledi srbski Belex 15, ki je zabeležil povprečni letni donos -16.42 %, blizu je tudi slovenski SBI TOP s povprečnim letnim donosom -16.48 %. Te slabe rezultate lahko pripišemo posledicam svetovne finančne krize in slabi ekonomski klimi, ki še vedno pustošita preučevane trge. Nižje donose lahko pripišemo tudi dejstvu, da donosi indeksov Crobex, Belex 15 in SBI TOP ne upoštevajo reinvesticije dividend, kot je to v primeru indeksov FTSE 100 in DAX 30. Za primerjavo, brez upoštevanja reinvesticije dividend bi indeksa FTSE 100 in DAX 30 dosegla za skoraj 4 % slabše povprečne letne donose. Za razliko od razvitih trgov so se na razvijajočih se trgih bolje odrezali delniški skladi. V preučevanem triletnem obdobju so hrvaški delniški skladi zabeležili povprečni letni donos v višini -10.06 %, kar je za več kot 2 % bolje od indeksa Crobex. Slovenski delniški skladi so imeli -10.12 % povprečni letni donos, kar je celo 6 % bolje od indeksa SBI TOP v preučevanem obdobju. S povprečnim letnim donosom -16.26 % so se srbski delniški skladi za las bolje odrezali od indeksa Belex 15.

Na prvi pogled se zdi, da so rezultati razvijajočih se trgov v čistem nasprotju s splošno sprejetimi teorijami. Navsezadnje so aktivni managerji dosegli nadpovprečne donose. Vendar lahko na te rezultate gledamo tudi drugače. Za indekse na razvijajočih se trgih ni bilo na voljo podatka o donosih v primeru reinvesticije dividend. Če bi bili ti podatki dostopni, bi ugotovili, da so indeksi na Hrvaškem in v Srbiji dosegli višje donose kot delniški skladi, donos SBI TOP pa ne bi bil daleč zadaj (to je, če upoštevamo donose reinvesticij dividend na angleškem in nemškem trgu). Do rezultatov, ki niso v skladu s splošno priznanimi teorijami so nas

pripeljali tudi drugi razlogi oziroma omejitve. Prvi razlog je velikost vzorca raziskave. Velikost vzorca delniških skladov je premajhen za ustrezne zaključke. Drugi razlog je preučevano obdobje treh let, ki ne predstavlja donosov skozi daljše časovno obdobje. Naslednji pomemben faktor je manjša učinkovitost razvijajočih se trgov v primerjavi z razvitimi trgi, kar lahko aktivni managerji s pridom izkoristijo za doseg nadpovprečnih donosov.

Na poti do zaključkov je bilo kar nekaj omejitev, ki so prispevali k manjši primerljivosti rezultatov. Različni izračuni donosov indeksov in različna preučevana časovna obdobja preprečijo pomenljivo primerjavo donosov razvitih in razvijajočih se trgov. Ker so razvijajoči se trgi majhni, je bilo na voljo zelo majhno število delniških skladov, ki so ustrezali kriterijem sestave portfolija za primerljivost z indeksi. Večina skladov namreč zaradi majhnosti trgov ne vlaga večine finančnih sredstev v domače trge. Prav tako jih veliko vlaga v druge vrednostne papirje. Z uporabo uteži smo izločili donose investicij na tuje trge in v druge vrednostne papirje. Tako smo na koncu dobili povprečne letne donose delniških skladov za vlaganja v delnice na domačem trgu, ki so sedaj primerljivi z donosi lokalnih indeksov.

Rezultate lahko razlagamo z vidika teorije o učinkovitosti trgov. Na podlagi mnogih raziskav lahko sklepamo, da sta razvita trga Nemčije in Anglije delno učinkovita. Pri razvijajočih se trgih je situacija rahlo drugačna. Slovenski trg je po ugotovitvi Deželanove (2000) prav tako delno učinkovit. Za Hrvaško in Srbijo ni bilo opravljenih nobenih podobnih študij, vendar glede na razvitost obeh trgov sklepamo, da sta trga pretežno neučinkovita. Na podlagi teh ugotovitev bi lahko sklepali, da bodo delniški skladi na manj učinkovitih trgih v primerjavi z lokalnimi indeksi na letni ravni dosegli boljše donose v primerjavi z bolj razvitimi trgi.

Donosi indeksov in delniških trgov na preučevanih razvitih in razvijajočih se trgih si nasprotujejo. Po eni strani je pasivni management na razvitih trgih dosegel višje povprečne donose od aktivnega managementa, po drugi strani pa to ne drži za trge Slovenije, Hrvaške in Srbije, kjer so aktivni managerji dosegli nadpovprečne donose. Delniški skladi na razvitih trgih so dosegli 0.87 % povprečni letni donos pod donosoma primerljivih indeksov (skupni povprečni donosi Anglije in Nemčije), medtem ko so aktivni managerji na razvijajočih se trgih premagali indekse v povprečju za 2.89 % na letni ravni. Na podlagi teh rezultatov lahko sklepamo, da aktivni managerji na razvijajočih se trgih za doseganje nadpovprečnih donosov izkoriščajo okolje manj učinkovitih trgov s pomočjo tržnih neučinkovitosti. Ampak to drži samo v primeru, ko ne uporabljamo izračuna donosov indeksov z reinvesticijo dividend na razvijajočih se trgih. Če upoštevamo reinvesticijo dividend pri donosih indeksov lahko sklepamo, da aktivni managerji na razvijajočih se trgih niso dosegli nadpovprečnih donosov v primerjavi s trgov (to drži bolj za Hrvaško in Srbijo kot za Slovenijo). Prav tako bi ugotovili, da je razlika med donosi indeksov in delniških skladov zelo blizu tistim v Nemčiji in Angliji. V tem primeru aktivni managerji na razvijajočih se trgih niso izkoristili neučinkovitosti trgov

Appendix 3

za doseganje nadpovprečnih donosov, in lahko bi zaključili, da so se aktivni managerji v Angliji in Nemčiji odrezali bolje, vsaj relativno gledano, od svojih slovenskih, hrvaških in srbskih kolegov. To je predvsem zato, ker delujejo na bolj učinkovitih trgih, kjer se nove informacije absorbirajo zelo hitro in je zato dosti težje dosežati nadpovprečne donose.

Čeprav nekateri rezultati nasprotujejo splošno sprejetim teorijam, lahko ob upoštevanju omejitev zaključimo, da so rezultati podobni tistim, do katerih so prišli akademiki, ki pravijo, da strategija pasivnega managementa dosega višje donose od aktivnega managementa. Rezultati analize ne lažejo. Nakazujejo namreč, da je pasivni management v Angliji in Nemčiji boljša investicijska izbira od investiranja v delniške sklade. Ob upoštevanju omejitev so rezultati zelo podobni tudi za Slovenijo, Hrvaško in Srbijo. Zaključek je torej jasen: pasivni management zmaga v bitki donosov z aktivnim managementom.