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INVESTING FOR CONSUMERS: COMPARING RETURNS OF
DIFFERENT INVESTING INSTRUMENTS 2004-2014

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Title
Investing for consumers: comparing returns of different investing instruments 2004-2014

Abstract

The purpose of this study is to find most suitable investment instrument for ordinary consumers. A consumer was defined as someone who has little experience and knowledge about investing and economics, and can commit several months' wages for long term investments. A passive investment method is studied concerning all investments due to its simplicity and easy implementation for all consumers.

The idea of the most suitable way of investing for a consumer was considered in several ways, mainly comparing with a quantitative study about how high of a return is received on the capital invested. Additional concerns identified were investment value fluctuation and commitment length requirements. A change in the value of an investment was viewed through forming an example portfolio for each asset class. Investments were grouped into the asset classes of stocks, government bonds, real estate, commodities, and funds that invest into these assets.

From the portfolio examples investment in real estate had the highest return, with close second being direct investment into the stock market using value investing in choosing the stocks. From the commodity class gold had third highest return, distinctively differing from previous research. Stock funds also did well achieving about the average return of all the classes, although funds in most classes had clearly lower return when compared to direct investment in the same assets.

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Nimike
Sijoittaminen kuluttajanäkökulmasta: eri sijoitusinstrumenttien vertailu vuosina 2004-2014

Tiivistelmä

Opinnäytetyön tarkoituksena oli löytää sopivin sijoituskohde tavalliselle kuluttajalle. Kohteena olevaksi kuluttajaksi määriteltiin henkilö jolla on vähän kokemusta ja tietoa sijoittamisesta tai liiketaloudesta, ja jolla on mahdollisuus sijoittaa usean kuukauden palkkaa vastaava pääoma pitkäaikaisesti. Sijoituskohteita tutkittaessa käytettiin passiivista sijoitusmetodia jossa sijoitus pidetään valitun ajan ja ei käydä aktiivisesti kauppaa, johtuen tämän tyylin yksinkertaisuudesta ja helposta toteutuksesta.

Sijoituskohteiden sopivuutta ajateltiin usealla tavalla, pääasiassa kvantitatiivisellä tutkimuksella keskittyen siihen miten korkea tuotto sijoitetulle pääomalle saadaan. Muita huomioituja asioita olivat instrumentin arvovaihtelut ja kuinka pitkäaikaista sitoutumista sijoitukseen yleisesti vaaditaan. Muutosta sijoituksien arvossa vertailtiin muodostamalla esimerkiksi jokaiselle tutkitulle sijoitusluokalle. Sijoitusvaihtoehdot ryhmiteltiin luokkiin osakkeet, valtion obligaatiot, sijoitusasunnot, hyödykkeet ja näihin sijoittavat rahastot.

Esimerkeistä asuntosijoituksen arvo nousi eniten ja toiseksi paras oli suora sijoitus osakkeisiin, jossa osakkeiden valinnassa käytettiin arvosijoittamisstrategiaa. Kolmanneksi menestynein valitulla aikavälillä oli hyödyke kulta, jonka menestys poikkesi selvästi aikaisemmista tutkimuksista. Osakerahastot olivat keskimäisiä tuotoissa, vaikkakin rahastosijoitusten arvot nousivat pääasiassa aina vähemmän kuin saman luokan sijoitusinstrumentit suoraan sijoitettuna.

Kieli
Englanti

Sivuja
100

Asiasanat
Sijoittaminen, osakkeet, rahastot, obligaatiot, hyödykkeet ja sijoitusasunnot.

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1 INTRODUCTION

The topic of thesis is personal savings and investments currently being sold to consumers. Investing is an interesting subject, a hobby that anyone can start immediately, but also a vast subject that thousands of books and studies have been written and are continuously published. Veritably, investing is popular subject of discussion and common news item.

On the other hand, investments are mundane things that involve everyone in some way. Be it bank deposits or owned real estate, basically for many, at least personal income is maintained in a form of investment. From this it could be thought that most investments are made without much conscious effort. Or at least, that the focusing happens after a significant event goes awry, for example interest payments mounting on a personal loan.

In recent history there has been great turmoil in economy and current world situation has a feeling of uncertainty both politic and economic, matters which might make a novice investor hesitant. Quite rightly, studying is needed to make good decisions for the long run and to have insight to be able to persevere during difficult times, bad news and general uncertainty. The thesis delves into this learning process.

1.1 Thesis question

The thesis work tries to help figure out the best way to start investing. The way it is done is by concentrating on investments that are readily available to consumers. Possible risks involved in economy and single investments are explored as well as suitable investment time periods and returns.

Available investments are examined as groups defined by investment class where characteristics and profits of recent history of each class are researched. With the results and help of previous research suitable investment class and style for a beginner is determined. The thesis tries to answer to the question: what investment class available to consumer offers the best return?

Another aspect covered by the thesis will be how to make investment market research from consumer based perspective. The focal points are what information is needed to be a successful investor and what kind of research has to be made to have a solid understanding about investing strategy and invest with healthy expectations.

The investor the thesis is suited for has little prior knowledge about investing, a very basic understanding of math and economics and small starting capital that can be committed wholly for the period studied. The investor profile used is chosen by the fact that it resembles and is applicable for as many people as possible and it also is representative of the thesis author's situation.

An important thing for the thesis is to concentrate on the findings of previous research and try to improve. Most previous investing research and literature about investing techniques concentrates on single asset class or compares different investment classes. Especially important for small investors and for passive investing is that each available investment is studied and compared before an investment is made so there is no opportunity for regret, if investment has to be switched over to another while incurring losses and added trading costs.

Another view that is somewhat lacking usually from investing literature is the consumer based aim. The thesis concentrates on investing in ways that are feasible to implement in any investor case. This leads to favoring a passive approach, which means holding investments until end of the period with as little number of transactions as possible, over active investing, meaning doing many trades. With a passive method there is a smaller amount of trades that offers fewer opportunities for making errors and smaller amount transaction costs eating up profits.

Another vital issue also for many consumers that are living in a rented house when considering investing is making the choice of either committing capital to an owned house or other investments. With a small amount of savings and cash flow coming in direct investment in real estate would rule other investments out at least in the near term. Furthermore, since the pick can be made only once, a strict comparison of profits and analysis on the effects of investment time to prices and risks are needed.

The thesis essentially tries to portray how investment research, that is understandable to average consumers, is made in an uncomplicated form. Dependable results are pursued by the ways of looking at relatively long term results, comparing all the main classes, and comparing results to previous longer term research. In addition the thesis should work as a helpful guideline for consumers looking to make investment decisions.

1.2 Research methodology

Quantitative analysis is used in the thesis to find out what kind of returns different investments have produced in the recent years. Testing is portrayed through a hypothetical investment of equal amount to each class in question. The investment classes used are actively trading stock funds, passively stocks holding index funds, direct investments into the stock market, government bonds, real estate, and commodities. Investment types are modeled in slightly different ways, but with an emphasis on trying to achieve a generic portfolio that resembles average investment of that type.

There are numerous varied investments, but only investments that are available to every consumer in the target market are included in the research. The main requirements are that they can be bought directly with small starting capital and that the fees are small in relation to the capital. Classes of investments that are more complex or require high starting capital are excluded, such as derivatives and hedge funds. However, normal funds may also use specialized instruments such as derivatives if they choose to.

The research is intended for a consumer that has little prior knowledge and experience in investing. The investment cases portrayed are supposed to reflect novice investing, so they are easy to implement and do not require a lot of managing. The price available on the market at the beginning of the period is used and it is expected that whole sum is invested at the going price. The investor has a starting capital of €10,000 which is invested in the start of the period reviewed, and the investment is not changed or withdrawn until at the end of the period.

The time span used is from the end of January 2004 to the end of January 2014. 10 years is not a very long stretch for an investment research, but it is still large enough to get a helpful view on how the investments behave for making an investment plan. Even the last

10 year stretch has seen lot of significant events absent from most periods of same length. After the stock market recovered from crash of IT-companies in early 2000s there was the 2008 financial crisis followed by the European debt crisis. Time periods that include these situations of rapidly falling market values are special in the sense that they may, at least for a while, deter public from investing altogether or move emphasis from traditional investment instruments into new alternatives.

The market studied is Finland, and investments included are the ones that are available to Finnish consumers. Finland is a small market but a developed market comparable to other western economies. Previous researches done in other countries are used as a reference in the thesis. The location is selected so that the research would be as useful as possible since the researcher is Finnish, but it also should be usable to others investing in Finland or in other developed markets.

1.3 Investment classes

Some of the most popular investments for consumers are funds trading and holding publicly traded stocks of companies. Funds that trade actively with stocks are positioned into a group of their own, while index funds that passively hold a predetermined selection of stocks and also reflect kind of an average outline of the whole market are considered another grouping.

Stock funds are the only active investment in the sense that fund managers pursue to do active trading when they see it profitable instead of purely holding assets. Fund investment is regardless passively held for the whole duration the same as in other classes. Stock index funds performance is measured the same way.

Investment in publicly traded stocks is depicted with the change in the value of a portfolio of stocks bought at the start of the period. Pieces of the portfolio are not traded throughout the investment period, and the ending value is looked at for the return produced to the invested capital. Stocks are chosen from an index that lists only the most traded to ensure liquidity since these stocks are traded so actively that they can be sold anytime without offering a significant discount to the average market price. Stocks included are chosen based on conditions defined in a stock valuation strategy called value investing. This

means that the stocks are graded using simple calculations derived from financial statements measuring profits and other indicators of business quality.

The performance of a bond investment is calculated by adding accrued annual interest to the starting capital based on the government bond yield offered on day one of the period. Statistics institution's bond yield index is examined to see what kind of variation yields have had during the period reviewed.

The real estate investing case is examined by assessing the price development of housing in the market and what the level of expenses is. The starting capital used in the research portfolio is generally not enough to make a direct investment in the target market. Settling for a cheaper and possibly more of an unfavorable location could possibly allow real estate prices to be low enough for the capital used in the examples, but it would also likely increase the risk of illiquidity, where the property would be difficult to rent and eventually sell without giving a sizable discount.

Because of this bulk of the real estate investment is financed with a long maturity mortgage loan that has small monthly repayment increments allowing expenses, loan repayments and interests are covered with the expected income from renting the property. The resulting return is a crude rendition of what can be theoretically expected from real estate investing when done by a novice investor. Housing price, housing expense, and interest rate indices from statistics institutes are used for estimating average prices while the financing information is queried from a local bank.

The return of investing in commodities is gauged by looking at direct investing into gold. Although there are also numerous other options to choose from in the field of commodities, gold is one of the most common. From all of the possible commodities even a professional investor might concentrate on only one specific commodity such as oil or lumber. To be able to reflect on a return a small investor could have, only the most conventional commodities are reasonable subjects, from which gold is the one of the most readily available and liquid.

Additionally returns of funds that invest in bonds, commodities and real estate are researched for comparison to direct investments in these classes. Funds that are available to

consumers in the target market are included. Averages are used to depict general level of return that would have been achievable in funds of that class because of unpredictability of future returns. Predicting which fund performs better than the average is difficult, although due to most of the funds having either higher or lower return than the average, exact average return would not be received in any real situation either.

The difficulty with commodities and real estate is that actual return is hard to depict since each investment situation is unique because there is a limited number of actual real estate properties in the market. Additionally, financial success of a property varies in the market based on factors such as location, neighbors, or renovations. A specific house at a certain time can be bought only by one entity and the next buyer will have to settle for something else. It may still be located in the same area but there still are different aspects that affect the future value such as size, style, location and materials.

An issue with commodities and real estate is that an investor with a small amount of capital is not able to diversify investments into multiple destinations due to fees and high unit costs. Another concern is liquidity: for example, in an area that is facing financial difficulties there would be absence of buyers at its otherwise current fair value price. Funds with a sizable amount of capital on the other hand can invest more effectively to these classes with the benefits of diversification and liquidity.

The information for fund returns and fees is collected from the research company Morningstar's website. Stock and index returns are gathered from the stock exchange, and information about general investment fees are acquired from investment brokerages. Statistics concerning inflation, house prices, and interest rates are gathered from Statistics Finland's, OECD's, and the United States Federal Reserve's databases.

1.4 Structure of the report

The first part of the report after introducing the thesis is an introduction to important topics needed to understand profitable investing. Issues concerning risk, return, strategies, and market timing are covered.

The way the research into investment returns is conducted is explained in detail in the second part. After that the results are presented with discussion about how successful the gathering of all the data was and its reliability.

Results from previous researches are then discussed to give a background into this kind of work and serve as a comparison. In the last part are conclusions including discussion about the research findings, suggestions for investing, and ideas for further research.

2 CONSUMER INVESTING

In the economic sense investing means committing resources to business activities that generate cash flow to pay dividends and interest or buying something that appreciates in value over time. There are masses of investable objects being traded in the market today, most of which are available to all consumers.

Most investments funnel money to some form of business activity that needs capital. In the financial industry there are multiple ways to participate in these investments, most common being stocks, bonds, and funds. The whole financial industry revolves around creating and managing these ways of resource owners and resource users to exchange capital.

Usually the resources that are looking to get invested come from preserved wages or inheritance. The amount of capital people have available to them varies and can be very limited, so the study follows investing done with a minimal amount of capital representing a few months salaries for an average person. The sizes of portfolios used in the research are €10,000 each and according to Statistics Finland average monthly salary for Finnish full time employees was €3,206 in 2012 (2013). The aim of the sizing is to be applicable to an average person just starting investing.

Investing can be negatively construed as a form of gambling. True enough, instruments offered by the financial industry can be used to take risks and one's savings can be gambled away easily in many ways. However, regardless of rising or falling economic cycles, investing can also be done in a calm and level-headed manner that leads to a safe

return in the long run. Cyclical changes in economy, for example fluctuations in the level of production, trading, and other market activities over a period of time, may affect investment valuations in the short term, but good returns can be seen in long-term historical statistics (Siegel 2008, 6).

Literally if all earnings are not immediately consumed after obtainment, they are in some form of an investment, be it cash currency issued by a government or a deposit in bank account. What varies are the return the investment has, the liquidity of the investment, or how conveniently it can be sold any given day, what kind of backing it has, and how big is the risk that one day its value turns out to be nothing.

The definition of an investment is when resources are given to someone with the expectation of returning a profit after a certain period of time (Bodie, Kane & Marcus 2008, 2). Savings on the other hand mean all unspent resources that generally are expected to retain their value. However, holding most savings and investments has some costs, such as fees in a bank or inflation with currency. So they would have to appreciate in value to retain their real value, real value meaning spending power instead of just numerical value.

When thinking what are good investments right now it is difficult to see past the most popular items, for example the stocks of modern technology companies and other new forms of financing. Another new and interesting example could be hybrid loans, where profits are linked to developments in some trendy stocks. At the local bank office a consumer sees prospects for the most popular investments exchanged at the moment. The same can be the case when seeking advice from a professional financial adviser. Professionally managed funds may also be tempted to hold stocks that are sought after, since their positions are published in prospects and financial reports that may be noted in media.

What makes some investment classes overemphasized over the others can be that they are completely new products; they have done the best lately or for other reasons have simply gained most notoriety. Often the sales commission is more significant in the newer products, which is common marketing strategy to get immediate sales and build revenue for new products and companies (Kotler, Wong, Saunders & Armstrong 2005, 785-786).

Traditional investments could be less lucrative for salesperson or the whole financial company and thus get less attention.

New investment products are important for the industry because they can increase banks and companies sales revenues. In the same vein a stock analyst may give more recommendations to buy and sell stocks compared to holding a stock or not buying in the first place (Malkiel 2011, 163-164). For example Inderes Oy currently makes predictions on companies in the OMX Helsinki stock market, and in one of their latest releases their target prices for the coming 12 months did not have a single company whose stock price was expected to remain on the same level, whereas 37 of them had targets at least 5% over current price and 29 were 5% or more under current price, which could be interpreted as urging to mainly buy and sell instead of holding possession of a stock (Inderes 2014, 11-12). The media may also be fallible to write more about these newer investments; even if financial journalism is thought be more serious and professional, the writers have to consider what interests people and the investment industry to have readers (Malkiel 2011, 167-168, 170-171).

It could be surmised that it is more sensible for an individual to make their own decisions about how to spend their money or let a professional money manager make the decisions for them, as is the case of stock funds. Of course professional investors can make mistakes as well, and funds do sometimes go out of business. Although money managers do their own analysis about how they invest the funds they get, both investing directly and investing into a fund requires some research from the consumer.

The internet with electronic transactions has emerged as additional factor to investing in the last decades. When decisions can be carried out from home there is less reason for going through intermediaries and spending extra on transaction fees. The ease and instantaneousness can add more hazards for the consumer, for example investing without doing any research, getting defrauded, or reactively doing excess trading.

2.1 Indices as benchmarks

Financial companies calculate indices that are a numeric values representing general price levels. Indices are combinations of current market values of things that are actively traded, such as houses, loans, and stocks.

The most widely used indices are involved with the stock market. Stock indices calculate values of groups of stocks, either part of the market or all that a particular exchange is comprised of. Fluctuation of these index values can be interpreted to represent changes in the economic situation in that market and how well those companies are doing. In other words, the amount people trading are willing to pay for the stocks across the board at the time.

The main uses for indices are economic studying and tracking investment returns of markets for funds and investors. Developments appearing in the market can be researched with different price indices: house price index, rent index, or general price index that tracks retail prices of selection of consumables. In stocks the concept of market return is usually taken as a return of a commonly used index that involves broad selection from the stocks in that market. Change in those particular stocks as a group can be viewed as indication of change in the whole market.

Investors and the financial industry use stock indices for measuring the success of the investing endeavor. The return of an investment portfolio is compared against the return of its benchmark index in the same time period. Usually, funds state in the prospects their and their benchmark index's returns in last quarters or years.

The return of an investment portfolio should at least match the benchmark. In other cases it would be more sensible to form a portfolio resembling the composition of the index, avoid doing extra trading and receive, at least, similar returns. When a portfolio has a lower return than index it can be thought of as a sort of a loss, because more effort has been made to achieve lower return with possibly higher risks.

How prolifically the latest successes of an investment can be reported depends on which index has been chosen as a yardstick. There are numerous options to choose from, and some funds for example use more unusual indices to compare their returns to, differing

from the general ones usually reported in the media. Commonly investors trading in their home country follow the return of the general stock index that has all the stocks available in that market. Also common are indices that have the largest or most traded stocks of a market especially if the market has large amount of stocks, such as the Standard & Poor's 500 in the United States that comprises of 500 largest companies from the thousands that New York Stock Exchange and NASDAQ have all together.

Investing companies can choose any index they want to compare themselves to, even more exotic indices than the ones tracking overall market situations. Usually it has a correlation of their overall strategy. A fund could have as a goal to use their insight in the high tech industry to pick stocks of high tech companies and compare their stock portfolios' return to an index that contains all the high tech stocks in the market. In the same way people investing in their local exchange would compare their return to the total return of all that exchange's stocks.

Marketing-wise it would make sense for the fund to choose an index that they can outperform, even though it were not the most appropriate based on the market segment, strategy or other factors. For a consumer looking to invest into a fund it is important to make their own research by comparing the fund to main general indexes and other relevant benchmarks. Investment research companies also track funds returns and compare them to general indices or other relevant indices that other similar funds use.

The same way indices can be found for other investment classes than stocks, as well as other economically interesting data such as levels of prices and interest rates. Investor can use respective indices particular to that investment class as an illustrator for average return in the market for that type of an investment.

2.2 Investment classes

Investment classes used in the thesis represent the most common instruments that are available to consumers. They require relatively small starting capital and have been available to consumers for decades or even hundred years. Although funds became common only in the 20th century, the instruments they use to trade with are mainly the same that are looked at in the other groups.

Different investment asset classes can be divided into real and financial assets. Real assets are tangible objects such as land, property, or bricks of gold whereas financial assets are, crudely speaking pieces of paper or, markings in electronic database claiming ownership to profits made by real assets, for example a factory owned and run by a company (Bodie et al. 2008, 3). The simple distinction is that real assets actually take up physical space and financial ones do not.

Financial assets are needed so that ownerships of real assets that tie up large amounts of capital can be managed more effectively, by sectioning them into more manageable partitions. Partially for this function the whole financial industry exists, and that is why these assets are called financial. Nonetheless financial assets are also credible real method of investing and as old and commonplace as paper currency, which coincidentally can be considered a part of the group.

Investing in to a business demand, when done directly, a commitment of a lot of time and capital so it often makes more sense to use financial assets where the ownership is split into smaller increment of shares of a company. Simplified example would be owning a factory compared to owning a share of a company owning a factory.

It is not sensible for an individual to save money for example to buy a whole factory. Depending on the situation the endeavor could take multiple generations whereas, if all that money would be immediately invested in smaller increments, each part would start to earn a return and interest or dividends could be reinvested the same way and also would begin to earn. The quicker the resources are accruing interest the sooner the interest can be earning more interest, which is called compounding interest, a significant effect on the whole return over the investment life.

The easier entrance into investing that financial assets have compared to real ones withstanding, there are other differences that have to be considered. Financial assets have additional downsides such as counterparty risk. Owners of gold or property can be worried about things directly involved with the asset, for example the price level decreasing, but while the value of a financial asset may be linked to the price of the same commodity or property, the value may also plummet if the issuer of the asset is in financial distress.

A derivative called future is similar to the stock in the sense that the price of both is dependent on the expected value of the company that the stock gives ownership to. In a situation impending a bankruptcy of a company both the value of the stock and the future may diminish, but the financial outlook differs between holders of these financial assets. Owner of a distressed stock has still claims to the assets owned by the company and can receive restitution from selling assets of the company when the business folds. Futures do not have this upside and also have the additional downside of counterparty risk. When the stock price rises, stock owner can sell the stock to the market for profit, but proceeds for the future are paid by the issuing financial institute that is the sole party taking the loss. If the financial institute is insolvent, investor might not get paid, even though the asset that the derivative is tracking is doing fine.

Financial institutions and banks nonetheless mostly are stable, while they also are highly leveraged, in other words use borrowed money on their operations. Macroeconomic situations such as the United States' housing market bubble and Eurozone crisis, where prices of financial assets sharply drop for a period of time, can be explained partly by the high level of borrowing and cross-lending between banks and countries. Even a small decrease in country's economic situation that has large amount of debt sets a snowball effect where costs of lending increase and liquidity of banks and other countries that hold the country's bonds gets questioned.

The investment classes looked at comprises most of the selection available small investors to give an outlook on the dimensions of the choice that a starting investor faces. More complex instruments and investment methods deemed irrelevant to average consumers were purposefully left out.

2.3 Funds

Investment funds are companies that pool together a large sum of money that is then invested and managed by the funds staff. These professional investors help manage large amounts of money for communities, for example retirement programs and stipend programs, and give individuals the ability to partake in investments that require large

amounts of capital. They may also utilize complex analysis and other expensive skill and information that is out of the grasp of ordinary consumer.

Although funds have not been around as long as stocks or bonds they mainly manage portfolios that consists of these investments, sometimes though with derivatives that have those same stocks or bonds as their underlying assets, that produce similar returns. In a way modern societies can be thought of as funds since part of the economy is businesses financed by government with taxes collected from its citizens.

Funds that invest mainly directly into bonds, stocks, or real estate offer similar risks to the investor as investing directly. Derivatives have counterparty risk, but even if a fund company bankrupts, there can be some value salvaged from the equities it holds.

The main draw for funds is the easy entrance to a market. Investments are managed by the fund and usually they are diverted in to a large portfolio. A large amount of capital available can be beneficial because the portfolio can be divested significantly without accruing large trading costs. Although in some cases, for example a portfolio of public stocks, an individual investor could buy the same assets directly while avoiding the annual fees due to overhead costs of a fund.

The whole spectrum of investment fund entails a very broad range of companies that use different investing strategies and concentrate on different investing instruments. However, they can be grouped into two main categories based on how the financing is structured: open-ended and closed-ended funds.

Closed-ended funds have limited amount of shares that trade in the secondary market the same way as publicly traded stocks, whereas investors deal directly with an open-ended fund, buying shares that the fund issues and redeems when investors wants to cash out. When investing to an open-ended fund the fund issues shares at net asset value. The price of the share is the market value of the assets of the fund with liabilities subtracted divided by the amount of shares outstanding, minus investing fees. (Bodie et al. 2008, 90.)

The price of shares for closed-end funds is decided in the open market. Usually the price reflects the current market value of the fund's assets as well, since it is a good indicator of

the current value of the investment if the assets of the fund were sold. However, the market price can be decidedly lower or higher if the managers of the fund are either expected to make bad decisions and waste investors' money or contrariwise build extra value on the investors' capital.

The funds type needs to be considered when assessing risks. Closed-end funds are not forced to liquidate their holdings if large numbers of clients want to sell their shares even though their market price may go down dramatically. Possibly open-ended funds need to keep larger part of the portfolio in currency compared to closed-ended funds, because owners deal with the fund directly. There is the risk that open-ended fund does not have enough cash reserves and may be forced to make disadvantageous trades in situations where many of the owners want to cash out.

The costs to the investor comprise of buying and selling fees, possible commission on profits and annual management fee. The management fee subtracted annually from the value of the investment is used to cover overhead costs, such as the wages of the staff and transaction fees of the investments traded. Other fees included could be for example analysis services bought by the fund. The total ongoing running costs of the fund are often calculated by the fund as a percentage of the value of the assets of the fund, called total expense ratio. In funds investing to stocks in OMX Helsinki total expense ratio currently varies between 1.00% and 2.55% (Morningstar 2014).

The fact is that there are thousands of funds to choose from. The difficulty for a consumer is which one to invest in. Success is hard to quantify as is the skill of the staff of the fund. A good indicator is the previous results but they may be hard to reproduce. In fact the managers or analysts behind previous success may not be the ones managing the assets in the future, making it difficult to size up future returns.

As Malkiel (2011, 316-318) has observed there are at all times some funds outperforming the market greatly, but after years the order of the best funds usually changes. Most funds perform the same as the whole market or a little worse. The reason for this can be the annual managing fee deducted from the whole amount and also some costs and taxes that is not included in passive market return that includes no trading.

Regardless, fund companies are worthy option as an investment and as an asset class significant part of the financial industry. They offer diversification for a small fee and a professional money manager for managing the funds. Funds can be seen as investing vehicles that prevent individuals making mistakes from investing on their own (Graham 2009, 229).

2.4 Index funds

Index funds are similar investment companies than all other funds. Significant difference is that they do a lot less trading. Mission of an index fund is to have a return similar to an actual index. Since the index fund holds a position in investments to receive a similar return to an index, they do not do any trades other than to keep the portfolio analogous to the calculation of the index. Index funds also invest in different assets, but stock index funds are concentrated on in this case. (Bodie et al. 2008, 44-45.)

Special feature of the index fund are lower costs compared to other funds. Difference between index funds to the rest of funds is their passivity. They lack the costs of trading, market analysis and other over that actively trading funds have, so the overall fee is lower to the investor in comparison (Ferri 2011, 32).

When investing to stocks, index fund offers a good way for diversification. Funds can own a portfolio that represents each stock traded in a whole stock exchange or all publicly traded companies in a country. Building a portfolio with a large amount of stocks is difficult for an individual investor is very difficult because of amount of capital needed and amounting trading fees.

Although index funds try to achieve similar return than the market surveyed, funds may lose to the market return, at least the amount of the extra costs of the fund. Investor's return has the funds overhead fees subtracted and additionally the mandatory restructuring of portfolio when there is changes in the index.

Additionally traders in the market can exploit situations when there is a change in the index because a company's market capitalization or the stock's trading volume change and the removal from the index is known in advance. When the index is altered all the index

funds need to buy shares of the new participant and sell the company exiting the index. All the traders in the market are aware of this compulsory extra pressure to buy and sell and can respond by asking a premium in the prices.

2.5 Stocks

For the part of stock market, common stock of companies publicly traded in the stock market is used. As with funds investing to stocks can be started very quickly. After giving a buy order to a broker the trade is finalized in few days. Same goes for selling the stocks back to the market. However stock investing may require more studying and managing than funds. Portfolios could be identical, but if the arrangement of the stocks in portfolio needs to be altered, funds decisions are made by a professional staff while private investor has to make their own decisions based on their own strategy.

Stocks are considered high risk investing and this is especially true when looking at a single stock of a company. In comparison to interest paid to a bond, dividend payments are uncertain and unpredictable. Stock prices go up and down daily and if investor for some reason needs to sell the investments at a bad moment, a loss may have to be taken.

Although the performance of other financial assets is also linked to success of companies, for example in the case of derivatives and investment insurances, direct investment to stocks means also actual ownership claims to companies. This means that there is no counterparty risk with stocks. If the stock broker or bank managing the account becomes insolvent, the investors ownership claim remains and stocks are recoverable. Also stock accounts held in a bank often are insured by the state at least to some degree.

A stock owner's investment is only really in trouble when the company itself is doing poorly. Stock capital is junior to all debt that the company has on its balance sheet. If the company is in a situation where it has not been able to pay its debts and has to be liquidated the shares usually have a very low market value. When a business shuts down and all the assets are sold the owners see money only after all the debts are paid back.

A good thing with publicly traded stocks is that they have high liquidity. Numerous people all over the world trade stocks daily and usually someone willing to buy at the current

market price can be found. For some stocks of smaller companies it may be more difficult to find a willing buyer at a market price so an investor needing to cash out will have to sell with a discount.

Also stock investing has pretty small fees. For example for Finnish investors when trading for larger amounts fees are tenths of a percent of the trade. The minimum fee for a trade is usually €10.00-€15.00 depending on which broker is used, for example one of the most affordable brokers for OMX Helsinki charges 0.20% of the investment per trade with a €9.00 minimum (Nordnet, 2014). In the situation of the research case, where stocks of 10 companies are bought with the total amount of €10,000, buying and selling stocks once would cost 2.00-2.50% of the initial capital, which is similar level to the other classes studied.

The trouble with stocks is that doing trades is so easy and quick and the prices offered for stocks change constantly. It does not necessarily mean that everyone is constantly making moves based on whims and hunches, but there is a temptation to cash out when prices sour or unexpectedly drop accompanied with terrible news about the forthcoming times. With the immediate availability of information and quickness of trading the composition of a portfolio can be altered daily. Excess trading however increases total costs and increases the opportunity for making mistakes especially for a beginning investor.

In the research case return is represented by choosing from a group of the most liquid, or highly traded, public stocks a selection to invest in. Investment is passive, therefore no changes to the portfolio are made during the investment period.

The financial indicators used are collected from value investing ideology and reflect company's financial situation, profitability, dividend output and how high these are priced by the market. The goal for choosing stocks based on ratios is to select stocks that have had stable and high returns in past so that the group would have at least similar return than the whole index listing, while there is less trades to manage and smaller trading costs.

In the earliest book concerning value investing Benjamin Graham suggests that portfolio of public stocks should be diversified to at least 10 companies and that all companies with higher price to earnings ratios would be excluded (Graham 2009, 113-114). Reasoning for

setting ratios were that it would discriminate against companies that have risen rapidly in value, commonly called as growth stocks, because their price was based on optimistic expectations to produce high earnings in the future and on top of the uncertainty of return their high price ensured low yield from dividends in the near term (Graham 2009, 115). Value investing has been one of the popular ways of picking stocks for many decades.

The difference of value investing to investing through an index fund or otherwise investing to a large group of stocks is that smaller amount of stocks is held and they all pay dividends and have high earnings in relation to their price. At least based on financial statistics from the previous year. Larger selections, such as the whole range of stocks in a market index, however include some stocks that regularly refrain from paying dividends or report a loss on the financial years.

Ratios used in stock investing are price per earnings (P/E), price per book (P/B), dividend yield, return on equity (ROE) and equity ratio. Price per earnings is determined by dividing the price of a share by annual earnings per share. Price per book stands for the relation of market value to the equity of the company and it is calculated with ratio of the stock price to the equity per share. Dividend yield is determined by the previous dividend divided by the purchase price of the share. Return on equity is calculated by dividing the previous year's earnings by the average equity the company held during the year. The equity ratio shows how the business is financed, calculated by dividing the equity by the total assets of the company, implying how much of the business is financed by owners instead of lenders.

The stock portfolio in the study could also be rebalanced by selling the portfolio at the end of each year and buying stocks that best suit the same criteria according newest information. This would lead to costs of 1.00-2.00% annually, similar to an investment fund. But the usefulness of this kind of readjustment is a bit questionable. If the same capital invested in an investment fund would have equal or better returns with similar fees, it would not make sense to spend time investing and paying extra fees and taxes annually, if through funds the same is accomplished without much effort on the part of the investor.

On the other hand if funds perform better than passive investment in stocks, rebalancing the portfolio could become a good alternative investment method. In this case different

strategies about the length of the holding period and formula for stock selection would have to be researched for comparison on how well they fare against funds.

2.6 Bonds

Bonds issued by governments are considered one of the most risk free investments. They can be more suited for an investor who does not follow much of what is happening in the market, since the investor can expect that the interest and principal are paid back in timely fashion. The risk of insolvency is very small due to the fact that the state has the option to tax its citizens the way it decides to.

The market price of the bond still fluctuates daily just as a stock prices although bond's interest payments and return can be calculated with precision. The daily value of a bond in aftermarket depends on yield from the interest payments, when the bond matures and what is the current interest on new similar bonds. The market value moves when interest rates available for newly issued bonds changes which makes bonds already issued less or more attractive investment as the new ones. Also affecting the aftermarket bond prices are changes in demand, occurring when investments with better returns become or cease to be available. (Appel 2010, 19-20; Faerber 2009, 58.)

One particular feature of bonds is stable return. For an investor who does not mind changes in the market and holds the bond until maturity government bonds provide a very predictable and steady return. If the intention is to hold the bond to maturity the return can be calculated precisely before investing, excluding the possibility of insolvency which in the case of governments is very unlikely.

Governments sell their debt in large quantities in auctions and the bonds are primarily not available to individuals due to their high unit size. An investment can be made through a bank or a broker that has bought a larger piece of the bond and sells it in smaller increments with a premium. Other option is to use a fund that operates a rotating portfolio of government bonds.

The unit size is what makes direct investment difficult for investors, but government bonds are very low risk so diversification against lender insolvency is less vital. A subscription

fee of a bond through a broker varies according to the size of the investment, but similarly to other financial assets it can cost up to couple of percent of the amount purchased. With small investments the fee is larger in relation, for example in Alexandria bank each €1,000 invested in a bond costs €20.00 in fees, equaling 2% of the investment (Alexandria Group, 2014).

All investments are risky and affected by the up and down cycles in economy. The 2008 global financial crisis led to the threat of insolvency in European banks and countries that had the highest amount of debt. The worst situation was with Greece, which had to get emergency funding from the EU. As a condition for the 2012 bailout to lower the amount of debts it was agreed that the face value of outstanding bonds issued by Greece to the private sector was cut by 53.50% (Eurobank EFG Economic Research 2012).

Argentina defaulted in 2002 after which the bonds were restructured and lenders were to receive about a third of the original principal upon maturity with an extended running time and extra interest payments. Small part of the lenders did not agree to the terms of the restructuring and sued for the rights to be paid in full. Argentina lost the lawsuit in the fall of 2014 and is currently late paying interest due because of judicial issues and can default again. (Otaola 2014.)

2.7 Real estate

One of the most common ways consumers can invest is by buying a house. Since house prices can be high in relation to consumers' personal wealth, they are often bought with a loan from a bank that uses the property as collateral. In the case of owner occupied housing instead of paying rent the consumer pays repayments and interest on the loan along with possible maintenance costs. At the end of the loan's running time property is solely owned by the consumer without financial obligations.

Another option is to buy real estate as an investment. In this case rent income from tenants is used to cover the loan payments and maintenance fees. The only difference is that the lending bank may require higher part of the house price paid by the lender upfront in the real estate investment case, whereas owner occupied financing is considered more secure and banks may require lower down payments (Eldred 2009, 28).

Low interest rates can make real estate an especially lucrative investment, because it is possible to receive a continuous income from the monthly rent if it exceeds the total loan repayments and maintenance charges. Even if the rent only covers total expenses the investor would gain the ownership of the property and access to full rent income stream in future. In a usual market situation the house should also appreciate in value while the loan is being paid back. (Eldred 2009, 8-9.)

Investing in real estate takes more time and effort than buying financial assets. On top of finding the right property, an investor needs to negotiate the sale and possible financing. Additionally renovation or other maintenance can also be required. The same issues are faced when selling the property. Help can be hired to do all the laborious aspects of investing in real estate but this increases the costs and cut down the return that can be achieved. Similarly the whole process can be transferred to the professionals by investing into a real estate fund that deducts all the costs directly from the investor's equity.

House prices have grown steadily pretty much at the same pace as inflation. From the first quarter of 2004 to first quarter of 2014 Finland's real estate price index grew 34.42%, or 3.00% annually, while the consumer price index, which is a major indicator of rate of inflation, grew 20.80% at the same time, so the average annual real appreciation over inflation was 1.09%. (Official Statistics of Finland 2014.)

The rise in house prices, wages, and price levels in general over time is common due to the monetary policies of central banks. The problem is that real estate may not appreciate in value other than in inflationary economy. Property in itself is not going to produce much extra value unless there is some extra work done by the investor. Maybe the property can be renovated for a smaller cost than what the increase in selling price will be. Changes in the location where the property is situated may also increase the value, but that is difficult to predict and works in both directions; prices could locally go down compared to the national level.

The difference with real estate is the relatively high investing costs including agency fees, taxes, and financing fees, on top of more effort required with managing and selling the investment. If the investor faces a situation where the investment needs to be sold immediately, it could be difficult to find a buyer without taking a significant loss. In the

case where the investment is funded with a loan it could mean losing all the capital invested.

Real estate funds on the other hand have good liquidity as do funds in general. The other difficulty with a direct investment is the lack of diversification but this too can be averted with real estate funds, although like all funds they have extra overhead costs in addition to taxes and maintenance fees.

On the upside real estate investments have good features. The revenue stream from rent is predictable and most likely appreciates along with inflation. In last decades house prices and rents have climbed steadily with only one serious decline that occurred in 2008-2009 (Figure 1).

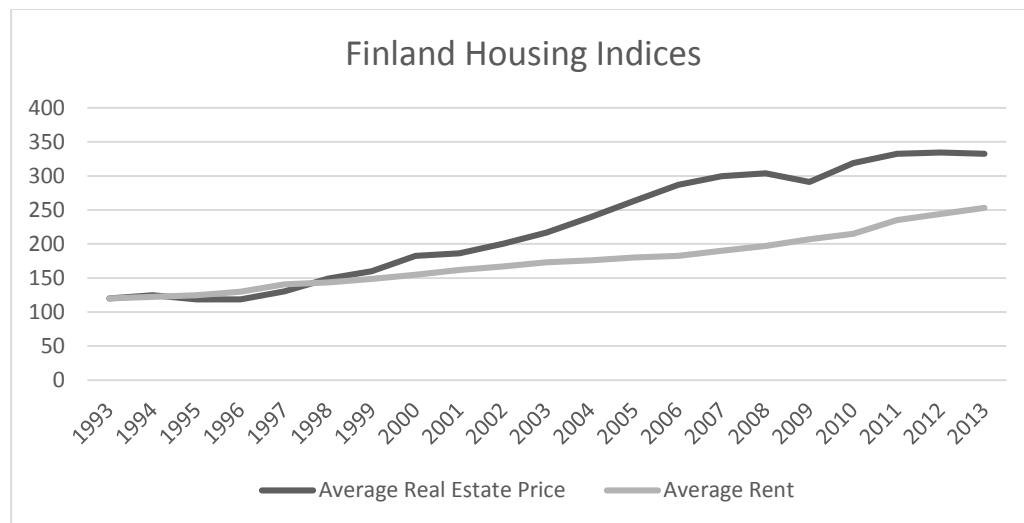


Figure 1. Real estate price index and average rents of dwelling index (Official Statistics of Finland 2014).

2.8 Commodities

Commodities are a very large class of assets that includes all raw materials and other goods that can be traded. A commodity can be something that is used in production such as sugar, wood, and, oil or valuables that are stored for safekeeping. Investing in commodities can be done either directly by buying the item or by using financial asset, as a right to buy the commodity at a certain price such as in a futures derivative. (Ferri 2007, 247-248)

During the financial crisis of 2008-2009 the stock prices in Finland dropped collectively by 48.83% in 12 months from the closing price of January 2008 (Nasdaq OMX 2014). In the same time period the price of gold stayed on its previous level, even though the economic situation looked grim (Federal Reserve Bank of St. Louis 2014). In these situations alternative investments may become more interesting to consumers when the negative aspects of volatility of stocks is seen first-hand.

The reality is that economies are cyclical in nature and markets act accordingly by prices going up and down over long periods of time. Asset classes whose values are not affected easily by events in the general market are considered as a protection for savings. In troubled times they may even appreciate in value due to excess demand when people move their savings from investments that either have done poorly or are expected to.

With commodities there is certain amount of unpredictability in the future return. It is somewhat uncertain what the demand will be for any commodity going forward. Food supplies obviously have continuous use, but for some that have high demand now, for example fossil fuels, could become obsolete due to scarcity or substitute items. Also changes in consumer behavior or technology may have an effect on the development of commodity's price. For the long run it is somewhat difficult to predict if a particular commodity has a positive return.

Compared to other asset classes commodities have similar costs of investing. When buying a precious metal, such as gold, an investor has to on top of a trading fee pay a premium above the current market price and the same when selling. At least in the case of direct investing there can be illiquidity if the investor wants to part with the investment immediately and has to sell at a discount to the market price. There are funds that specialize in investing in commodities, and as with other classes their shares are traded daily in stock exchange and have good liquidity. These funds are handy in investing to commodities but bring extra costs in the form of overhead from managing the fund.

2.9 Excluded classes

From the selection of all possible tradable assets only the most common, practical, and accessible for consumers were looked at. The main trait that limits parts of the total range

of offerings from financial industry is unavailability to consumers. Some investments such as hedge funds and corporate bonds demand too high of starting capital to be available to normal consumers and these companies may even be legally restrained to take customers with not enough capital.

Complexity is another big restricting factor for someone starting to invest. An investor should understand special rules and liabilities that concern an investment and how they differ between investment classes. In many situations the broker, the fund, or other issuer of the investment is obligated by law to explain the particular risks involved in that investment.

Newer financial assets such as credit default swaps, securities and other structured products are not included. They have a lot less history than traditional stocks and bonds and require a lot of studying because their different rules and regulations. The uncertainty of how to invest into these classes and the unavailability of information about past returns from long periods make them unsuitable for a beginner investor.

Trading with futures, warrants and short selling can be profitable depending on the skills of the trader, but most consumers are not expected to have this kind of knowledge and additionally costs of active trading are a lot higher than holding common stock or bonds. Returns from these financial assets when used by professional traders are seen in the case of funds, since many of them use them at least partly in their trading activities.

Excluded are also financial assets that are hybrids of corporate bonds and common stock, namely convertible bonds and preferred stock. They do offer more flexibility, but each has their own specific rules differing from bonds and common stock, and as a group their past returns have not surpassed these more common rivals (Graham 2009, 406-407).

From investment fund class closed-end investment companies, since they are traded in the stock market, are treated like stocks of any public company and only included in the stock and index fund cases. Stock funds that invest only to stocks of a specific industry, such as health care or technology companies, are not researched because they are not comparing themselves to the market return of general index and so are not so comparable to index funds and private stock investors. Furthermore specializing to an industry in stock trading

is not likely to be a successful endeavor for a beginner since it requires specific knowledge about the industry, business, and marketing.

Stocks of privately owned companies are excluded from the research, since they generally are more difficult to invest in. Investing in stocks of private companies have higher trading fees compared to public stocks when the investment capital is small. In comparison a trade with public stocks in Finland costs a 0.20% of the value of the trade with a €9.00 through Nordnet Bank where as trade to largest private stocks through Privanet costs 2.00% with a €30.00 minimum fee (Privanet 2014). So to have similar trading costs to other investment classes the size of the single investment would have to be larger and diversification as in public stock portfolio and funds would not be available with the size of the investment used in the research. Investing in private stocks can also require more understanding of the particular business and local economy since many private companies are smaller and operate only locally. Additionally private stocks are traded with smaller volumes than public stocks they may offer less liquidity, and so when sold investor might have to sell at a discount.

From debt securities municipal bonds, corporate bonds, investment insurances and other bank debt securities were not included in the research. Bonds that are not directly secured by a country were thought of as not suitable for a beginning investor. Although they often pay higher interest they also have a greater risk of default. Funds can invest in large collection of different bonds that have significant individual risks of default and gather higher interest payments from the group to make up for the ones that will default.

Also excluded are inflation protected securities such as U.S. Treasury's inflation-indexed bonds, since in the market researched Finland's government does not issue similar securities. Usually though their interest rates over inflation are a lot smaller compared normal treasury bonds interest rate so while they certainly have over inflation returns they can also produce a lot smaller returns than traditional government bonds (Appel 2010, 68-69).

Although government bonds with shorter maturities can have higher interest rates, a 10-year bond is used instead because of the high fee of investing in small increments. In a 10-

year investment period shorter maturity bonds would have to be invested in several times and multiple fees would notably affect the return.

Even though there are numerous different kinds of commodities, investing into them requires expertise and studying on the particular subject. Only gold is looked from commodities, because it is one of the most traded of them, can be expected to have some amount of liquidity in the future, and has a long history both as a valuable item and a trading instrument.

Also margin trading, investing with borrowed money, is brought up only in the case of real estate although it is widely used in all investing. Using credit adds additional costs from lending fees and interest but also can leverage return into a bigger gain. Unfortunately it creates another type of risk on top of the investment specific ones.

Other investment loans are not considered as safe as house loans and have usually higher interest rates. The lender also sets a limit on how big part of the investment is made using debt. Stocks for example have volatile price movements, which normally cannot manifest as a loss unless investor buys during higher prices and sells at a low point. But with margin if prices goes down, the value of the collateral investment decreases, while the amount of borrowed money stays the same, so the ratio of loan to collateral decreases. To decrease the amount of debt and get back to the agreed ratio the lender may force investor to deposit more money or sell part of the stocks immediately on a loss.

Investing with the help or through a financial adviser can be thought of as a form of investing that is similar in some ways to funds. The paid professional financial adviser makes the investment decisions on behalf of the investor and gets either an hourly fee or percentage of the invested assets (Ferri 2011, 218). This form of investing is excluded from the study for the same reason as hedge funds; the lack of availability of such investment with the capital chosen. It is highly unlikely that a successful and reputable financial adviser could be found for managing a starting capital of under €100,000 (Zweig 2009, 277).

In the research an attempt has been made to obtain as complete of a picture of the whole range of investments as possible. Classes and investing methods excluded are deemed not

good alternatives to the consumer. Either they are not available at all, or are bad choices due to low liquidity, high capital requirement, or required knowledge.

3 RISK AND RETURN

Trading as all business has a human element since all transactions ultimately are done between two persons, even if one of them is an employee of a bank or other company. Therefore it is natural that there are a lot of emotions of fear and excitement involved in investing. To be successful starting investor needs to find a way to think objectively about trades and situations affecting economy.

For thinking about investing and investments starting point could be how much is earned, in other words how big the return for the invested capital is. After that the second key thing that comes to mind is: how likely an unfortunate event is, where the return is not received or the invested capital is lost. In this sense the topics of risk and return are the most important ones. Although neither risk nor return can be predicted accurately seeing what return was previously and how it has alternated between periods can be used as guidelines when making investment decisions.

Looking backwards at the history of an investment, return of the committed capital can be calculated along with what kind of exposure to risks was undergone, and changes in price, demand, or trading. Return means gain from the difference in the values of the investment between the beginning and the end of a period, when appreciation and all cash flows such as dividends and interest have been added to the beginning value. Return is usually calculated based on a time period as in annual rate of return (Bodie et al. 2008, 118). While the future value for any investment remains to be seen it is vital for an investor to think what level of return is needed from the capital committed. This can answer on what to invest in and also guide what to avoid.

Naturally investors that endanger their own resources want to have safety and dependability. Unfortunately safety does not exist in any investment, and both financial and real assets have risks (Bodie et al 2008, 7). In times of anxiety and fear it would seem safer not to invest at all. Then a consumer's resources would likely be in a form of

property or paper money, whose value is insured by society and state. That value can also be wrecked in an extreme situation such as war or economic catastrophe.

Risk means the uncertainty of return from investment. It could be that the current value changes whereupon a seller might take a loss or that cash flow from the investment is interrupted generally due to insolvency or other financial issues. These concepts often get mixed up, although price fluctuations may have no effect on passive long term investors' return, and in those cases could not be considered as a risk. One measurable way of understanding risk in investing context is measuring difference of actual return from expected return. (Graham 2009, 120-121.)

There is a popular idea about the relationship of measured risk in form of price fluctuations and return. It is thought that to be able to achieve higher return also higher level of risk needs to be taken. This is seen in historical returns of assets where assets considered more risky, stocks, have had higher return than less risky assets, bonds, a principle called equity risk premium (Dimson, Marsh & Staunton 2002, 9). This, however, is an observation made from previous records and may not reproduce in similar fashion in future.

Variance is a common measurement used to model risk. Essentially the calculation describes how greatly the return or the value of an asset has fluctuated during the time period from the average. This information is important for an investor if a situation where suddenly investment needs to be liquidated is considered. How widely the value of the investment deviates from the mean during a period to reach a certain return equates to how big of a loss would be suffered in the worst possible situation. (Bodie et al. 2008, 121-122.)

However, variance only reports how widely the return has fluctuated or is estimated to fluctuate. Actual realized risk is the loss of income stream that can occur as a loss of interest, dividend, rent, or if the investment is sold at a loss.

Statistic for variance and other similar calculations, such as volatility and standard deviation, get associated with other risks, although variance can only be realized when the investment is sold and to long term investor who is not likely forced to sell it has little actual significance (Graham 2009, 203). Variance can be measured from past values,

where this past information may differ greatly from what is going to happen in future, or otherwise future anticipated fluctuations can be estimated in which case it is a prediction.

The reason why variance is usually used is that other actual risks are more difficult to predict and so ambiguous in nature that they are difficult to define with an actual real number. While losing everything on an investment does happen, it is so rare that it is hard to calculate or even comprehend as a possibility. Even our way of understanding risk is flawed since it is measured from past events, whereas the future may be surprising. Variance from past price changes may indicate certain possibilities at different odds but the reality going forward can be completely different and even out of the scale formed from previous events.

In any case when going forward previously observed situations may not apply. Maybe the company faced a time of financial uncertainty and came up as a winner from the situation where the stock price reflects on this positive development. In the future the growth speed of the stock price may slow down and in better times the stock price also can become less volatile.

So how should an investor think about risk? It needs to be accepted that there are always risks and uncertainty in investing, and not let individual situation make investor deter from the course and change our behavior. The long run needs to be thought of and look for as high return as possible in the comfortable risk level chosen. Looking for solely higher risk in order to have higher returns could turn out to be very unprofitable.

Zweig (2009, 219) stresses that major part of what happens to investment is uncontrollable and that it is advisable to concentrate on the parts that are controllable, which means trading and holding costs, asset allocation, and investors own behavior. Although price movements are uncontrollable, investor can improve return by trying to get away with as low costs as possible, choose the right asset class with agreeable risk characteristics, and then have unassuming expectations to guard against making excess trades.

Risk and return tend to go hand in hand and it is commonly thought that in order to be able to receive higher returns higher risks need to be taken (Bodie et al. 2008, 11). This certainly makes sense and can be found true when studying past returns and variances of

investments, but has dubious implications as an advice to an investor. Investment that had highest return in a time period from appreciation of price of the asset, could also have had a higher deviation between high and low points of price compared to others and so considered riskier. But the same investment previously could have stayed on the same price level and could have been considered a lower risk investment based on how much the price has fluctuated. Comparing different investment classes the risk level seems to have more significance, since generally more risky assets such as stocks have had higher long term average returns than bonds (Siegel 2008, 6).

One issue that applies to every investor and investment class is inflation, in other words the loss of buying power of money over time due to rise in prices. When general price level rises during an investment period even if the nominal return from an investment is as expected, the gain has less use for the investor. Inflation can be considered one of the most common risks for investor's returns and the value of savings.

3.1 Inflation

3.1.1 Effect to savings

Besides increasing the amount of wealth, another reason why consumer would want to invest retained earnings to another form is the fear that currency will lose value over time. The buying power of currency decreases when supply of money grows faster than productivity in the economy, also called inflation. Rate of inflation is measured from the change in general price index.

To lessen the adverse effects of economic cycles to society, central banks try to control the level of economic activity with changes to the money supply and interest rates (Faerber 2009, 79-84). A low level of inflation is a desired by economists and society in general, because of rapidly rising or sinking prices are thought to have negative impacts to the economy and civil disorder might increase as a byproduct. (Mishkin 2004, 47-48.)

Although it is very unlikely that value or purchasing power of currency would quickly drop, it also can happen in extreme cases of political turmoil and financial troubles with the state. The more normal situation historically is a low level of inflation, where an

incremental increase of currency in the market leads to the steadily increasing prices of goods and services.

For most countries state of small level inflation is desired seeing that the opposite, deflation is considered dangerous to an economy. Deflation has reportedly occurred during financial distresses and it is detrimental for governments, banks and other businesses if they are highly leveraged, that is operate on borrowed money. In that situation the real value of the loans would accelerate while the ability to pay back loans diminishes. (Krugman, Wells & Graddy 2014, 365-368.)

There are examples of deflation in recent history. Consumer prices rose in the U.S. during the Great Depression in 1929-1933 and the latest financial crisis in 2009 (Krugman et al. 2014, 367). Economic downturns withstanding, a citizen of a developed country can expect the real value of their savings to constantly decline if kept in bank notes. In U.S. during the 20th century annual inflation was 3.00% on average (Siegel 2008, 13).

Bank deposits are one of the most common way savings are invested. According to Statistics Finland (2012) almost one-third of investable funds of all households' were held in bank accounts during the last decade. The other two-thirds include securities such as stocks, bonds, and real estate. Banks pays interest on deposits and profit by investing the money into other investments that pay higher interest rates. Bank accounts have very small risk since savings in currency are insured by governments.

In the current situation the only way for consumers to make sure that their savings will retain their buying power is to invest them in investments whose return at least matches rate of inflation, which has averaged 1.80% annually in Finland since 2000 (Statistics Finland 2014). With the interest available now the investments have to be something other than a deposit in a bank account, although at the same time though the savings will be exposed to additional risks. The return of an investment minus the inflation is called real return that shows how well an investment has produced if change in purchasing power of money is disqualified (Bodie et al. 2008, 660).

3.1.2 Relationship of inflation to different investments

Inflation has different effects on different investment classes. Changes in the purchasing power of money affect the value of some assets directly since they are objects that are used in trading with money. Debt securities that have predetermined terms concerning interest are not affected at all directly, but the real return to an investor varies depending on the inflation. Some investments returns are not affected much by rise in costs and can produce positive after-inflation returns if the businesses behind those investments can transfer the effects of inflation to their prices to reflect the rising costs of producing the goods.

Central banks decide the chosen level of interest rates at which money is lent to banks and the amount of money supply to guide the economy. This affects interest on debt securities in the market. If the rate of inflation is higher than the rate of the bond, the real value of the investment is lower when the bond has matured and principal is paid back to the investor.

It is commonplace that when economy's supply of money is increased, the price of goods and services in that market tend to increase. Prices of real estate and commodities inflate as well, because more money in the market means that people can pay higher prices for them, while being able to spend more due to higher wages. Decision makers can also try to increase a country's business activity by lowering interest rates (Faerber 2009, 84).

Stocks of companies are thought to be somewhat inflation-proof in the sense that their prices in general tend to inflate as well (Malkiel 2011, 357). Companies can adjust their prices according to inflation and transmit the increases in costs of materials and labor to their customers. If the amount of money in circulation increases due to inflation and customers have more available to spend, the revenues and profits of businesses inflate as well.

When investing to an asset class through a fund, effect of inflation felt is similar as if invested directly. If companies can offset the impact on return of inflation by increasing prices, the same way a stock fund investing in those companies increases its return from appreciation in value of the assets held by the fund to correlate with inflation.

Funds investing in bonds are susceptible in the same way to the loss of real return from interest than bonds invested in directly. But funds' portfolios can include bonds that have

been issued at different times and have different interest rates. Therefore it is possible that a fund could have positive real return from interest even though interest on the currently running issues of bonds would be lower than inflation. Funds investing in real estate and commodities have portfolios of assets that respond to inflation similarly to assets invested in directly so the value of the fund should behave in similar fashion to the value of the assets.

3.2 Risk inherent to an investment class

As well as different kinds of risks some risks also affect different parts of the economy. Some risk influence the market as a whole and some only affect a certain asset class. Risk that is measured with variance can be divided into systematic and unsystematic risk. Systematic means the general risk of the whole market and economy that all assets and portfolios of assets have, while unsystematic risk pertains to a single asset. (Peirson, Howard, Brown, Pinder, & Easton 2011, 183.)

The effects of risks differ for particular investment classes according to their special characteristics. Differences arise at least depending on if the trades are made in the general market or with a specific party such as a financial company, a bank, or a treasury, and what kind of rules and regulations govern the earnings of the respective class.

3.2.1 Investment Funds

The issue with funds that is related to risks is the nature of market trading that resembles a zero sum game. In order for one party making a profitable trade in the market someone else needs to make a losing trade at the same time. Funds mainly deal in relatively large trades so they concentrate more on popular stocks that have high liquidity in order to not affect the normal demand and supply equilibrium and influence market price negatively for themselves through large trades. Due to the large size in these trades mainly the other side also is also a financial institution of some kind. If one fund gains from the deal another one has to lose, which would leave owners of both with averaging returns over time (Malkiel 2011, 323-325).

The difficulty for the investor is to know which one to invest in beforehand. The trades are made by one of the best investors on each side, the fund managers, and over time in turn one party gains and other one loses. Over a longer period of the differences in results are small and trading fees cut into returns of all.

Often the returns of funds tend to resemble on average the return of the whole market, because their portfolios resemble such a big part of it that changes in the whole market influence the portfolio in similar proportion. On the other side, the trades of the funds are so large compared to the total trading volume in the market, that decisions of funds skew the total ratio of demand and supply affecting total returns. (Graham 2009, 232-233.)

Investment funds have a greater possibility of a counterparty risk than direct investment. For example to get the benefit of a rising growth company fund may deem it practical to invest through a derivative, if the fund's rules permit it, called futures contract instead of actually buying the stock. In a long position with futures contract investor has the right to buy a stock at a determined price at a future date and the other party agrees to sell it with same terms. If the price of the stock is higher than the contract at that date the seller loses the difference. Derivatives may be used because a fund invests quantities so big that the amount of common stock needed would not be available, at least without inflating the price in the process. But there is no limit how high the price of a stock can climb so with a long futures contract there is a risk that the other party would not be able to pay the winnings due to insolvency. In a serious financial crisis the value of the fund could also decrease due to large part of its portfolio being financial contracts with institutions whose solvency are at suspect.

On the other hand funds investing directly have the same risks as investors that have similar investments in their portfolios. The risks include the decrease of prices of the assets the fund holds and the loss of earnings of interest, rent, or dividend payments due to insolvency. Funds generally manage very large pools of money and many utilize both derivatives and direct investments to implement the investing strategy they seek.

The main risk that an investor faces with a fund is that its return during the investing time loses to its benchmark index. In that case it would have been more fruitful to passively invest to large quantity of stocks of the market or an index fund, where annual fees would

be lower in general. Otherwise the investor has practically wasted part of return on costs of excessive trading the fund has performed. With the most popular funds large funds the risk is imminent since the large size of the trades the fund makes rule out smaller and less liquid assets. Portfolios of these large funds that consist of similar investments in respect to each other so there is limited room to grow returns and they tend to be similar to others and market averages (Zweig 2009, 218).

3.2.2 Index Funds

Risks with index funds are similar to funds doing active investing. If the fund invests in derivatives or loans stocks to short sellers there is a counterparty risk, otherwise risks are similar to an investor investing directly in the same collection of stocks.

Costs may be a little higher than when investing directly but otherwise they are on the same level. Main risk involves fluctuations of the market. The value of the market and price of the stocks owned could drop to a half inside a year after the investment is made, as happened in 2009 in (Nasdaq OMX 2014). If the investment is needed to be liquidated during the investing period there is a genuine chance of having to take a loss.

3.2.3 Stocks

Stock prices of most companies alternate daily in the stock market. How highly the price have fluctuated can easily be measured with variance, which also is often used as a risk measurement. Variance of prices may not happen in the same degree in future and the risk of loss augmented by higher variations in prices in a short time period only can turn into a loss if stocks are sold in after a short time.

Due to the number of companies a stock market has a large amount of investing options and the amount of risk can be tried to reduce by using strategy in choosing the makeup of the stock portfolio. In value investing amount of the possible investments can be limited to include only stocks whose market price is only under 20 times their latest reported annual earnings.

Choosing only lower price-to-earnings stocks mostly excludes so called growth stocks that are typified by higher multipliers of their stock price compared to their earnings. Growth stocks are priced with high multipliers to earnings since the general public expects those earnings to grow faster than the rest of the market. High multipliers of growth stocks may decrease to a more sensible level after their business has grown but a successful growth pace can also attract more attention and inflate the price even more. For example in one of the most recent stock market crises in 2001 the prices of stocks of high technology companies crashed after having grown rapidly through the previous decade. Before the crash, and losing most of their market value, technology and internet related companies were priced 50-100 times the previous annual earnings. At the same time companies of other industries were sold with multipliers of 10-20. (Graham 2009, 113, 115-116.)

The most realistic risk involved in stocks is the loss of dividend stream. Unlike in the class of bonds, companies do not have to pay any dividends to their owners, if the company wants to reinvest earnings or does not have earnings to pay the dividends from. The company, on the other hand, needs to pay their debt obligations even if they suffer losses and in the worst case have to liquidize assets. The cash flow from dividends to shareholders involves a lot more uncertainty. Additionally the share capital is legally most junior in the bookkeeping of a company, so in a bankruptcy the shareholders get paid only after all debts are settled. (Cvitanic & Zapatero 2004, 7).

3.2.4 Bonds

Bonds issued by governments are least risky from all debt securities. Interest payments and repayment of principal are covered by the country's taxpayers. However, interest rates offered on these bonds change constantly.

If interest rates offered on new issues increase the values of bonds already issued will drop in the aftermarket, since they offer smaller returns to investors than new issues. An investor will get the total principal back when the bond matures. Only chance to incur a monetary loss is if interest rates go up, and the bond's aftermarket value drops, and the bond has to be liquidated for some reason during its running period (Faerber 2008, 58).

The risk that a state becomes insolvent is very unlikely, but it can also happen and has happened in past. In extreme situations the investor can lose part or all of the principal and remaining interest payments. During an impending insolvency of a state there a solution can be negotiated where the bond is switched to another with same principal but longer running time and maybe smaller interest to give the borrowing state some leeway. Milder cases may be resolved if over time the economic situation improves and payments are made late. In that case an investor loses only the opportunity for future gains from the principal and cost from additional inflation.

The main risk that needs to be considered when investing in a bond is future inflation. If after the investment is made, inflation rises above the interest rate of the bond investor suffers a loss in real terms. Although the total numeric value of the investment is higher at the end of the running period of the bond, the purchasing power of the principal is weaker because general price level has increased more. Also general interest in bonds will diminish if the inflation rises to match the interest rates so due to lack of demand the aftermarket prices probably would drop and an investor would take a loss selling them during the running period.

3.2.5 Real estate

Real estate is a sizable investment compared to financial assets and requires a long term commitment of capital and possibly making other financing arrangements. Moreover, as a characteristic real estate faces situations where changes in finances occur as in maintenances, precarious tenants, or increase in interest rate that threatens the positive return from the rent income, and maybe require additional financing.

These may manifest as special risks of periods with no rent income due to tenant's insolvency or rapid turnover of tenants, unexpected costs of repairs, or due to changes in circumstances where the rent income is not covering the total running expenses and the owner is not being able to pay the excess costs and defaulting on the debt. At the least there are excess costs from borrowing and at the worst if addition financing is not available the investment will have to be liquefied with a possible loss.

Changes can occur in the market for real estate as well during the investing period. Real estate prices can drop from a difficult situation in the economy and excess amount of properties for sale, as occurred during the financial crisis of 2008-2009. There are also local changes that can occur in real estate valuations, for example properties in different locations becoming more desirable than others due to changes in the area, infrastructure, or sociopolitical factors.

3.2.6 Commodities

Commodities are considered as a means of protection from economic downfalls, since their value may not move at the same time as the rest of the market. When values of other investments are dropping commodities are sought after as a shelter. This kind of behavior brings about the underlying issue that value of commodities increase in financially difficult times by reason of extra demand from public seeking assets that are not diminishing in value, but in other times when the influencing factor is not available there may not be any growth in value, and their role as an investment is altogether questioned. (Ferri 2007, 247-248.)

When invested in through financial assets such as derivatives commodities have similar characteristics as other financial assets. Each asset invested through a derivative has the counterparty risk, where there is little recourse to receive payment if the issuing party becomes insolvent. Otherwise the risk involves the derivative losing value due to low demand of the commodity.

A feature most evident in the class of commodities is the risk of fall in demand of a particular item. Changes in consumer behavior, research, or technology can make some raw materials not needed in the particular industry and the change might have a negative influence on the price of the commodity. The transition could also be reversed where material of small value finds a new use in production something valuable or more need arises for other reasons. In this case the material has more of a demand in the market and its price rises. But in any case, these developments in economy and industry happen randomly, and their impacts on the future return in the long run are difficult to assess. Though an investor can use their knowledge about the subject to advantage by timing their

investments in commodities, there is uncertainty about the preservation of value and all commodities may not be suitable of holding as an investment for the long run (Ferri 2007, 258).

3.3 Common strategies for improving return and dealing with risks

Many strategies exist in investing. Some have gained more notoriety and are used by many, but also any individual investor can have their own particular way of investing. Some of the more popular strategies are outlined hereinafter as a reference for the research, which deals with the returns of passively holding different assets for the duration of the investing period. How the more complex strategies and mathematical valuations produced are not deeply delved into in this research. For a consumer the strategies that require a lot of knowledge, skill or hours of work per day are not possible to implement.

According to Graham (2009, 162), in order to receive above average returns investing should be based on a sound strategy that is contrary to what is done collectively in general. For example there is a phenomena that people invest more in economically better situations and less when prices have gone down. To combat this tendency one could invest in same degree in each part of the business cycle but divest only when cash money is needed and change from investment to another only when better returns seem to be available. (Graham 2009, 163-164.)

The nerves of an investor can get strained by negative financial news. Economy is cyclical in nature and along with that prices in the stock market go up or down daily. Many issues have an effect to the changes in economic trends, and additionally the whole economy and different industries move around in slightly varying times. Great profits could be made from these changes by using timing in trades but it is difficult to achieve in reality, since the bottom of the down cycle or top of the upswing can be seen only in hindsight.

When dealing with the swings of the market it is vital to try to understand the true nature of randomness, that prices do not increase or decrease in perfectly alternating pattern, but there are rows of bad days and good days each reflecting their current market outlook and afterwards they get explained as an event such as the end of recession or return of public's fate on technology stocks.

Human mind has the capacity to rapidly notice and perceive shapes out of large volumes of information, and learning easily by understanding that events coinciding sequentially have causality. But events can seem to be linked together by chance and have no actual consequence, while the groups these seem to form are just made up by human minds. When investing in concerned, even though price of an assets has risen multiple days in a row it does not mean that this would continue in order to complete some trend or, on the other hand, fall back to the previous price to get back to more sensible level.

For assets that are traded daily in the market the going market price may change after each trade, since there usually are many sellers and buyers offering different prices, and when opposing offers meet a trade gets made. Generally there are two ways to benefit from market movements: trying to have good timing or trying to buy at a good price. Timing trades gives a benefit when an asset is bought at a certain price and then sold when the price has increased. This is also called speculative trading and generally has uncertain prospects since benefitting from it requires a counterparty that is making a mistake, generally called as the greater fool-theory (Malkiel 2011, 62-65). Mistakes in pricing of assets is tough to find, since there are numerous professional investors trading each day in the market and endless amount of analysis and information available to every investor. It is more likely that each speculator wins some and loses some while the brokers take a cut from each trade. Trying to buy at a good price has some merit; for example stocks can be picked based on what yield their historical average dividend produces on current share price and use that to build portfolio somewhat comparative to bonds that have set interest yields. (Graham 2009, 189.)

Moreover Graham and Dodd (2009, 100-102) divide investing activities into investing and speculation. Investing meaning having long-term outlook on the way the money is managed and having the same rules rigorously implemented, whereas speculation is more of trying to receive quick profits with unknown risks accepted eagerly and the rules executed changing on a whim. Investors have a long term commitment where a definable strategy is executed based on facts such as figures and estimates. Speculation is considered to be more short term and to involve more emotion and rumors.

To avoid resulting in speculation one has to base decisions on facts determined over a long period of time and have rules in place that make investment decisions remain constant in the short term. Additionally it needs to be understood that the current short-term changes are marred by randomness and the future is uncertain. This should ensure that there is no need to reverse decisions and be susceptible to market panic and other foibles of human nature.

When viewing different trading strategies used and their applicability to different classes, they can be broadly divided into two parts active and passive. Depending on the amount of different investing options inside a class, their availability for purchase and the required capital differ greatly, and thus usually sensible choice is either a single passive investment or a well-diversified portfolio where the composition can be altered at any time in order to make successful trades cover costs increasing along with the amount of trades.

Since three of the major investment classes use public stocks as assets either directly or indirectly, strategies are assessed mainly from the view of stocks. Moreover, since the direct stock investing portfolio is formed with value investing method, it and how it differs from opposing strategy growth investing are examined further, because currently most strategies concerning stock investing are considered to fall to one of these two categories (Brandes 2004, 7).

3.3.1 Active investing

Often decision-making of active investing is based on using timing to benefit from price changes in the market. In simpler terms a tradable asset is looked to be bought at a cheap price and later to be sold at a higher price to earn a profit.

Studies have been done in the stock market that indicate that people in general tend to invest more when stock market has gone up and less when it has gone down recently (Zweig 2009, 103). Additionally day traders, investors selling the same asset back and forth within a day looking to profit from price movements, on the average have ended up losing money (Barber, Lee, Liu & Odean 2009, 20).

The most actively trading investors are called day traders. In day trading excess returns are attempted to achieve by taking advantage from stock market's shifting nature and possible mispricing. The wrong pricing is used for advantage by buying and selling the same shares during a day for a quick profit. Many of these traders make positive trades but in the long run have negative returns after trading costs are included. Most comprehensive study about day trading was made in the Taiwan Stock Exchange comprising of every trade made there from 1995-1999. The mean net return for all day traders was negative in the research period and in each six month part only under fifth of the traders had a positive net return, although small portion of the traders were able to achieve good performances over the whole period. (Barber et al. 2009, 20-21 & 26.)

This indicates that majority of investors are not able to implement the buying low and selling high idea. And trying to use timing in investing, for example by buying assets when they seem cheap in comparison to previous prices or other similar assets, may lead to the opposite, of on average selling during downturn and buying during upswings. The reason may be that at the time the situation seems different than when looking at a larger picture after time has passed.

On the other hand with the active investing strategies there seem to be as many theories from achieving above market return as ones disproving them (Malkiel 2011, 486-497). An explanation could be that in a market, where people trade among each other for someone to win in a trade someone else has to lose equally. When someone invents a system that benefits them over others and then publishes it and results compels most to eventually act the same way. In the long run the result from this strategy is same that everyone else gets on average, or the market return minus the extra trading expenses.

There have been reported peculiarities in the stock market from the timing used in trading stocks for a particular reason. One is that stock market declines in December and rises in January, because investor sell stocks that are currently trading below their purchase price before the end of the year to book a loss to decrease the amount of capital tax due from gain of stocks sold during the year above the purchase price. The cash released from the sale could be used to buy back the stocks could be bought in the beginning of the next year, before the prices shift too much. This artificial increase of supply of stocks in

December and demand in January would make the price level to move predictably. But when this situation is known and can be seen in historical prices its reoccurrence becomes less predictable since everyone who is aware and has the opportunity can reversely buy in December and sell in January, and in time the distortion would dilute. The same applies to every anomaly that can be found by researching previous data, and makes future applicability uncertain. (Malkiel 2011, 483.)

As a group the use of past market movements to evaluate a current situation and coming developments is called technical analysis, which is a part of the active investing field. It usually entails using previous stock prices of other measurable economic indicators for predicting future prices applying different mathematical techniques. These calculations however carry in them the fallacy of defining what the value of an asset should be based on previous values. The value on a future date does not need to be inside a spectrum determined by previously occurred movements, although it can happen if the general public expects it to happen and uses according prices. Contrastingly, the price can drop or increase sharply when public's faith in previous valuations is lost maybe due to economic downturn or unprecedented change in earnings.

When investing according to a technical analysis the investor is bound to receive at least similar return to the market for the parts when they hold stocks comprising part of the market, and may receive even above market returns but the costs of active trading often become an obstacle. There is some amount of questionability to any study showing good results from technical analysis since they are measured from past occurrences that may not repeat. The effects of all analyses that demand major amounts of effort and accrue costs can be seen in the returns of investing funds that, due to the great amount of funds they have to invest, can implement any of these methods.

Trying to have good timing in trades is difficult to achieve but on top of it another problem ensues in times of economic expansion, where an investor deeming prices too high has to wait before investing. For example in ownership of stocks, companies use earnings to pay dividends to their stock owners or reinvest them into growing the business so investor holding cash is missing out. When holding stocks investor gets the benefit of accruing interest if dividends are reinvested into more stocks which increase the ownership in the

company and share in the future dividends or if the company invests part of the earnings back to the business to increase future earnings. This income stream is kept shut so long as the investment is not made.

Waiting for a market to go to a down cycle may ensure that one does not overpay for their investment, but it is impossible to know how long the wait will be. The income stream may be greater than the discount is in a stock market drop, while the investor may have to theoretically wait forever for the stock to go down from the current price. A stock price may also continue to decrease from the investing time possibly continually if the company cannot recover from the economic downturn. Price can also remain on a lower level, but dividends paid by the company can make up for it in the long run. By starting investing as soon as possible consumer ensures a possibility for a good return.

A real issue in active trading is that it might not be necessary for many. A stable holding of assets has shown a good over inflation return for a very long time regardless of short term drops in market declines (Dimson et al. 2002, 46).

3.3.2 Passive Investing

Passive investing means buying a portfolio of assets and then holding them indefinitely. The return received is accepted with no resources spent on making an analysis on the assets or trying to improve the return. (Bodie, et al. 2008, 11.)

Many investments such as long term bank deposits and bonds or real estate are mainly passive in nature. In other words they rarely are sold outside of predetermined intervals. But with financial assets that are traded daily it is just one method of investing. Passive investing is a good idea for a beginning investor, since each extra trade made gives an additional opportunity to make an error.

Usually passive investing offers decent returns in all investment classes. When investing in stocks an investor can get close to an overall market return with index funds or investing directly to all stocks of the market, while the active trading funds try to reach above overall market returns. In previous studies funds on average have had trouble even reaching the market return (Malkiel 2011, 317-318).

In investments that have low liquidity or burdensome selling process, passive holding is most reasonable way of going about the investing and probably more cost-effective as well. Contrarily, financial assets may be traded back and forth during each business day through internet, which can be enticing to any investor. On the other hand passive holding requires some level of discipline when there is continuous stream of news about the peculiarities of current market situation and there are analysis suggesting aggressive actions for everyone who seeks them.

Even though the value of a portfolio or whole market would fluctuate greatly in the short term, in a passive method an investor gets in the long term a return matching average of that investment class and a particular market in the proportion that the portfolio resembles the market's contents.

3.3.3 Value investing in stocks

Value investing can be defined as a practice where the fundamental value of a company's assets and its earnings production is evaluated. Stocks are bought when their market price is significantly lower than the estimated intrinsic value and selling when it rises above (Brandes 2004, 4). In the research however it is used in a simplistic view where fundamentals of business activities of companies are analyzed to choose stocks that are lowly priced compared to others.

Constituents of the stock portfolio are chosen from a larger group based on value investing indicators, calculated from previously filed financial statements. The aim is to find quality companies based on their financial information that have lower price compared to others in the group in relation to the indicators. The portfolio though is only passively held for the investing period, although some of the funds investing in stocks may use value investing in their trading.

One of the key measurement ratios are company's earnings and dividends in relationship to the market price. A low stock price compared to dividends paid to the company means a high yield of income comparable to the interest on a bond or deposit. Similarly high earnings compared to the stock price would allow the company to pay high dividends, part

of which is invested back to the company to maintain and maybe increase the earnings production capability.

A good feature in value investing is removal of the idea that right timing is needed in trades, and with prices fluctuating almost any company can from time to time be a good value company. To stocks certain value indicators of the company's productivity that is based on latest financial statements, expected values by analysts or long term historical averages, at least some of which are stable and fluctuate rarely. The ratios of the stock price to these values determines if the stock is in value investing sense over or underpriced. Since stock prices fluctuate a lot stock can move from the wanted group to the unwanted, or the other way around.

In any case, an investor can concentrate on this valuation derived from the current stock price and does not need to worry about timing and price development. A value investor could for example seek for a certain size of income from dividend so a portfolio is formed from stocks seem to have matching dividend yield, which comes from the ratio of expected dividend to the current stock price, otherwise neglecting the thoughts concerning timing and price movements.

Desired levels of earnings ratios also tends to disqualify all so-called growth stocks, companies whose price has grown rapidly due to quick increase in earnings, revenue or their expected growth in future. They can be good companies but generally they are newer businesses that lack a long history of stable earnings or dividends, so the future return is uncertain, and investing into them requires more specific knowledge and may not be suitable for beginning investors.

Pursuing value investing strategy can also have positive effect on the side of investment behavior. Stock prices have grown faster than inflation in many markets for the last hundred years (Dimson et al. 2002, 42). In a big crisis stock prices drop across the board but some companies can even keep their production or earnings on the normal level through the distressed period. Unlike the general investing public who tend to liquidize their holdings when stock prices are dropping, investors that choose stocks based on their value investing criteria would not sell them unless these particular factors change (Graham 2009, 163-164). If using this strategy withholds investor from selling during an economic

downturn and hold the stocks in the long run, the investor, at least based on previous data, would achieve good returns.

3.3.4 Growth investing in stocks

Growth investing focuses on searching companies whose business grows rapidly. Stocks of these companies are expected to rise in value when they have managed to increase their turnovers and profits. Common for these companies is that they have relatively high stock price compared to latest dividend and earnings. They may even withhold from paying dividends altogether, investing all the earnings into building the business.

Companies expected to grow have reported increase in revenues or earning for consecutive years at higher rates to the rest of the market and may reinvest their earnings for expansions. There may also be an expectation of some specific event where a new patent, production method, or product seizes a high market share from competitors and generates higher than before profits and the future dividends will be a lot higher.

Growth investing is considered an opposing strategy to value investing, since generally value stocks have low earnings multiples and growth stocks have high multiples. Although some growth stocks may have spectacularly high returns, others have mediocre returns and some fail completely. Some of this applies to any stocks but growth stocks are considered to be more risky and susceptible to price drops due to the high ratio of stock price to earnings (Graham 2009, 115).

3.3.5 Diversification

The benefit of splitting investment into multiple assets is that it reduces the risk in the sense that short-term fluctuations in the value of the portfolio are reduced (Brandes 2004, 98). Another risk that can be reduced is the single effect of a catastrophic size to the portfolio. The chances of a company's bankruptcy accompanying stock price drop or borrower's insolvency split between multiple different companies and borrowers, or a recession's devastating effect on the market split geologically to multiple countries. However, diversification does have the issue of needing more capital to be invested at the same time to not accruing higher costs of investing.

The amount of risk inherent to an investment varies and is associated with a lot of uncertainty. The aspect that can be influenced is how much the market price of the investment fluctuates over the investment period. The variance of an investment portfolio is important in the case that it has to be cashed out shortly after purchase. The less variance prices have means smaller loss could be faced.

Dividing the investment into multiple parts can decrease the combined variance if these parts' market value has negative correlation. Negative correlation can manifest for example in stocks of competing companies, where one's poor performance is taken as news of success to the other and the stock prices move to opposite directions. This would mean a positive spurt for some and drop for others, but a portfolio consisting of both would hardly at all change in value. The same goes for bonds, where decrease in interest rates in one class would make people move their money to others affecting the prices concurrently. (Bodie, et al 2009, 154-155; Peirson et al. 183.)

A common way to diversify market risks is by investing in different investment classes or different investment inside an investment class. Investments into multiple assets of the same class allow earnings of the portfolio to consist from businesses of different industries and which are in different parts of the business cycle. Additionally, the cyclical changes in the economy may affect these businesses differently or at different times.

Other ways to diversify are based on time or geography. In a class such as stocks, where price fluctuates daily, investing periodically in smaller increments averages the purchase price is closer to the average of the whole period and removes the possibility of a short-term loss that could occur if the investment were made at the peak of that period. Geographic diversity can also be important as economic cycles may move in different times from market to market, so by splitting the investment into different countries also lessens the risk of a market-wide collapse in economy.

A reduction in short-term fluctuations works both ways. Both drops and rises in values are diluted, and while long term return may not be affected, lower drops benefits the investor mentally. Big changes in market, economic crisis, and bad news can affect the way investing is thought of, and if a strategy is not meticulously defined and followed, may force investor to make unnecessary trades.

3.3.6 Behavioral traits of investors

Due to the relative easiness of investing today, issues stem from availability of making trades and the rapidness of deals going through. Each investor can move the focus of their portfolio from one asset class to another every time the value of the investment declines or is thought to soon decline by the market. This is more of a trouble with financial assets, although it can be attributed to all investments.

Common foible is following the ideas popular in the market at the moment, called herd mentality. There is a psychological influence to make investment decisions parallel to the majority. Individuals are thought to be more susceptible to making mistakes, but professional managers have even more pressure not to be contrarian and deviate from what is commonly considered correct. Fund quality is often measured by recent return, which could drop compared to others if the constitution of fund's portfolio differs greatly from the majority. (Zweig 2009, 247; Montier 2007 20-21.)

People feel emotional about wins and losses and need to exhibit a lot of self-control to not mix feelings with trading decision. On top of emotional issues individuals on average tend to think that they know better than average person, which may lead to bold decision making. Also there is the risk of having bad timing when making trades too readily. From statistics concerning trades it has been found that people sell more stocks during times of economic distress and buy more during what are considered good times. It leads to generally stocks being sold at low prices and bought at higher prices, while if the stocks would not be sold at all a better return could be had although some companies may go out of business. (Montier 2007, 33-48)

In itself doing too many trades is an issue, because it unnecessarily adds extra trading costs that reduce the return. News reporting short-term negative issues may enforce selling while stock analysis focuses on aggressive advice in buying and selling. Investors trading a lot have been researched to as a group having lower than average return compared to the whole market due to costs, even though they would make good decisions and trades with positive outcomes (Barber et al. 2009, 20).

3.3.7 Observations

Generally, most investment advisors support using some amount of diversification while investing. It is not harmful at least when costs remain reasonable, although if the risk of having the value of a portfolio bankrupt with a single business is removed, also the possibility of a huge win from a company becoming success is diluted.

Graham (2009, 176) recommends either choosing a fully passive approach or actively doing trades, since he has noticed that people tend to naturally settle somewhere in the middle and ultimately are unsatisfied with their results. Then any strategy is not really formed and emotions are allowed to affect decisions to make trades that add to chances of making mistakes and increasing costs. The lack of sound strategy is explained in words by “as an investor you cannot soundly become half a businessman” and to expect half a return of a successful business (Graham 2009, 175-176).

All in all it can be said that assets produce returns instead of strategies. For many asset classes there can be found a long history of positive return above inflation, but that presupposes that investment has been made in the beginning of that historical period and has not been altered before the end (Dimson et al. 2002, 46). Alternatively, strategies that are supposed to increase return above the market return have more uncertain successes based on previous research and the general public using them seems to not reach above market return (Barber et al. 2009, 20).

The simple reason for this is that with diversified portfolio unaltered over long time the return gets closer to the average return of the market, that a passive investor especially with an index fund is bound to have, while single investors receive either a return above or under the market's. Someone beating the market would have had a special strategy that others have not been able to use or have benefitted from specific circumstances. An unfortunate factor is that this situation is not available for the majority, since if it was it could be used broadly and it would end up reverting to average market returns for all. The simplest way of going about for a beginner seems to be choosing appropriate assets for the wanted investing time while refraining from making alterations in the duration.

4 COMPARISON OF INVESTING INSTRUMENTS

The overall goal of the research was to find relevant information for consumers that can be used as an aid when making investment decisions. This was done by comparing different investment classes through measuring a general representational return for each class.

For middle-of-the road investor that does not expect to outshine top investors by making extraordinary trades, average returns of classes based on historical information and comparative costs between classes can give enough of an idea for what to do. To that extend the returns reported here can be used to form a picture to a beginner about investing.

In the research passive investing strategy is used for all investment classes. Since the idea is to depict differences of investments for consumers, the amount of capital used is relatively large to anyone and a continuous investing time of 10 years that is sizable in length both to individuals and a market in general.

In a real situation however the investors could of course alter the investment at their leisure, but the research assumes that decision have been made for a long-term commitment. The structure of the underlying portfolio of assets may alter in the cases where fund returns are shown which offer a comparison between active investing's performance to passive investments and what the costs are in terms of long term return gained.

4.1 Research methods

The study is done by using quantitative research which denotes finding an answer to the research question by analyzing empirical data. Experimental quantitative research involves manipulating variables in order to experience their relationship to other variables (Dhawan 2010, 8). Parameters are assigned to define the study subject; in this case a consumer and a beginner investor, and then using statistics that have been gathered to measure results. The intention ultimately is to suggest how consumer should invest.

Quantitative research is used to try to find answers to hypotheses and define phenomena mathematically, so the research process is understandable to observers and results are easily repeatable in another study. On the other hand, defining the research poses a challenge if the parameters are set poorly or change vitally from the time of the research. Success with quantitative research can be thought to be reachable through well-defined subject matters and hypothesis conducted by a researcher that has a good grasp of the subject.

To be able to compare each class the average return is calculated from observing the change in amount of capital, or value of the investment, during the investing period. In all cases the result shown is excluding cost of selling fees and taxes on profit, although realistically a normal investment would not necessarily be sold when investing time reaches 10 years. More likely the income from dividends or interest payments would be reinvested when it reaches a high enough amount to have reasonable investing costs, and when necessary part of the portfolio would be sold.

Taxes on the profit or capital gain become payable in different times depending on the asset class invested in. Stocks and some funds pay dividends and bonds interest payments that are taxed immediately, while in other investments taxes are paid only on the profits made after selling the investment. Also earnings from each asset class have tax burdens of similar amounts, although some have been to some extent alleviated by law. In Finland public stocks that have been sold after ownership of 10 years can be claimed for a tax according to 60.00% gain from the sale price, but stock prices did not increase enough during the period researched that that would have had much effect on the results of the research.

The cost ensuing from selling the asset in the end of the period is also not shown in the end result of each research example. The sales fees and taxes on capital gains are approximately of similar size in different investment classes. There is variation between the asset classes and in a real situation when cash is needed part of the investment could be sold in some classes, whereas in others only reasonable option would be to sell everything in single portion due to the amount of fees. Since consumers with small investing capital

have issues in some classes due to the size of the required single investment, return of funds investing in the same asset has been added for comparison.

Annual returns' averages for the period studied are calculated using geometric mean. The total return of the investment is simply calculated by subtracting the total value of the investment at the end of the 10-year period with the starting capital and then dividing it with the starting capital. The geometric average for annual return from the 10-year period is obtained by calculating the tenth root of the total return. For cases where funds are looked at cumulative annual returns are retrieved directly from a database, and then average return is calculated with arithmetic mean by evenly dividing the sum of values with the amount of instances of these values.

Statistics used on forming the example returns for the investment classes are gathered from the online databases of Statistics Finland, Bank of Finland, Federal Reserve St. Louis, and various web sites of trading agencies. Historical returns of funds are gathered from the online database of Morningstar and prices of stocks and index from the website of NasdaqOMX company. Individual financial information regarding publicly traded companies was assembled from financial publications of each company.

4.2 Returns of investment classes

4.2.1 Stock funds

For examining fund performance available to Finnish consumer, average return has been calculated for funds operating in the target market of Finland. An important factor is that all the funds included have reported earnings for the whole investing period, because in many studies the funds that have the highest returns for particular years have since become one of the worse in succeeding years (Malkiel 2011, 316-318).

According to Morningstar there are currently 74 series of shares of active funds that solely invest in the stocks of OMX Helsinki. 39 of those have existed for at least 10 years (Morningstar 2014). About half of those pay dividends annually and the rest invest the dividends back to the assets. Many of the funds have sister funds, where the portfolio of the main fund is split into multiple sub funds where both basically own part of the same

pool of investments but handle the distribution of earnings differently. Because of this there are pairs of funds that have almost similar returns in the listings when the effect of taxation is not considered. However, exclusion of duplicate returns would not have altered the average more than about one-tenth of a percent, and of the sister funds both are investable by anyone depending on if they want dividends reinvested partly.

According to Morningstar the average return was 8.25% annually of all funds investing in OMX Helsinki that were operating for the period 1.2.2004-31.1.2014 (Table 1). For an example case of investing into funds the average subscription fee and average return of the funds portrayed is used in forming the ending capital of the investment. Taxes from events during the investing period such as dividends are not taken into consideration, since Finnish funds are exempt of income tax (L535/1992).

Table 1. Fund performance between 30.1.2004-31.1.2014, classification: Finland, stocks (Morningstar Inc. 2014).

	Fund name	Annualized compound average return	Total expense ratio %	Subscription fee %	Launch date	Dividend distribution method
1	Aktia Capital A	9.44	1.83	1.00	15.5.1992	Paid
2	Aktia Capital B	9.44	1.83	1.00	15.5.1992	Reinvested
3	Alfred Berg Finland A	8.86	1.80	1.00	1.10.1997	Paid
4	Alfred Berg Finland B	8.88	1.80	1.00	4.12.1992	Reinvested
5	Alfred Berg Small Cap Finland A	7.35	2.10	1.00	2.11.1998	Paid
6	Alfred Berg Small Cap Finland B	7.36	2.10	1.00	2.11.1998	Reinvested
7	Danske Invest Suomen Pieniyhtiöt K	7.37	1.30	1.00	19.8.1996	Reinvested
8	Danske Invest Suomen Pieniyhtiöt T	7.37	1.30	1.00	19.8.1996	Paid
9	Danske Invest Suomi Osake K	8.33	1.90	1.00	15.10.1987	Reinvested
10	Danske Invest Suomi Osake T	8.33	1.90	1.00	15.10.1987	Paid
11	Danske Invest Suomi Osinko K	8.58	1.52	1.00	23.9.2003	Reinvested
12	Danske Invest Suomi Yhteisöosake K	9.60	0.95	0.50	15.10.1997	Reinvested
13	Danske Invest Suomi Yhteisöosake T	9.60	0.95	0.50	15.10.1997	Paid
14	Evli Suomi Pieniyhtiöt B	10.84	1.60	0.00	4.12.1992	Reinvested
15	Evli Suomi Select A	7.93	2.08	0.00	16.10.1989	Paid
16	Evli Suomi Select B	7.93	2.08	0.00	16.10.1989	Reinvested
17	FIM Fenno	7.61	1.60	1.00	17.08.1998	Reinvested
18	Fondita Equity Spice A	10.68	2.00	1.00	07.04.1997	Paid
19	Fondita Equity Spice B	10.71	2.00	1.00	07.04.1997	Reinvested
20	Handelsbanken Suomi A	9.00	1.86	0.00	01.04.1998	Reinvested
21	Nordea Suomi Kasvu	7.66	1.60	1.00	15.05.1992	Reinvested
22	Nordea Suomi Tuotto	7.66	1.60	1.00	15.05.1992	Paid
23	ODIN Finland	10.12	2.00	0.00	27.12.1990	Reinvested
24	OP-Delta A	7.90	2.00	1.00	25.02.1988	Reinvested
25	OP-Delta B	7.90	2.00	1.00	07.12.2001	Paid
26	OP-Focus A	8.77	2.55	1.00	28.01.2002	Reinvested
27	OP-Focus B	8.77	2.55	1.00	28.01.2002	Paid
28	OP-Suomi Arvo A	7.92	1.60	1.00	20.12.1994	Reinvested
29	OP-Suomi Arvo B	7.88	1.60	1.00	20.12.1994	Paid
30	OP-Suomi Pieniyhtiöt A	5.16	2.00	1.00	28.01.2002	Reinvested
31	OP-Suomi Pieniyhtiöt B	5.16	2.00	1.00	28.01.2002	Paid
32	Säästöpankki Kotimaa A	9.15	1.83	1.00	13.05.2003	Paid
33	Säästöpankki Kotimaa B	9.15	1.83	1.00	13.05.2003	Reinvested
34	SEB Finland Momentum A	7.40	2.50	1.00	01.01.1997	Paid
35	SEB Finland Momentum B	7.40	2.50	1.00	01.01.1997	Reinvested
36	SEB Finland Small Cap A	6.06	2.50	1.00	20.04.1994	Paid
37	SEB Finland Small Cap B	6.06	2.50	1.00	20.04.1994	Reinvested
38	SEB Finlandia A	8.15	1.30	1.00	30.09.1993	Paid
39	SEB Finlandia B	8.15	1.30	1.00	30.09.1993	Reinvested
	Average	8.25		0.85		

The average return for 10 years from the funds is 8.25% annually. For a €10,000 investment the ending value would be €16,373.48 when a subscription fee of 0.85%, an average from the funds in question, is deducted (Table 2).

Table 2. Fund returns 30.1.2004-31.1.2014.

	Fund's annual return	Subscription fee %	Starting capital	Ending capital	Total return	Annualized cumulative return
Best	10.84 %	0.00	€ 10,000.00	€ 27,987.57	179.88 %	10.84 %
Worst	5.16 %	1.00	€ 10,000.00	€ 16,373.48	63.73 %	5.05 %
Average	8.25 %	0.85	€ 10,000.00	€ 21,906.44	119.06 %	8.16 %

4.2.2 Index funds

Investing in the index is examined by calculating the return from the index value between the start and end dates of the investing period. To depict a resulting ending capital index return is applied to the starting capital and pertinent fees are deducted.

Unlike bigger stock exchanges there is no index fund around that invests in all the stocks of OMX Helsinki. A chosen investing method in index funds that would invest in Finland is done by using OMXH Gross Index, an all-share total return index that comprises of all the prices of the stocks in the market and accounts for dividends as being reinvested into the index with no taxes deducted.

For investors concentrating their trades mainly in the OMX Helsinki stock market, OMX Helsinki Gross Index is usable as a benchmark to returns, since it is the same as investing in all the stocks in the particular market weighting stocks in the portfolio based on their market value in relation to the value of the whole market. The index reflects the return of all shares in OMX Helsinki with gross dividends reinvested to the range of the stocks. Even with the big drop in stock values during 2008-2009 (Figure 2), the whole 10-year period change in the index value was positive from closing price of 8801.62 in 2.2.2004 to 14036.67 at the end of January 2014. The change in price equals to an annualized cumulative return of 4.79%.

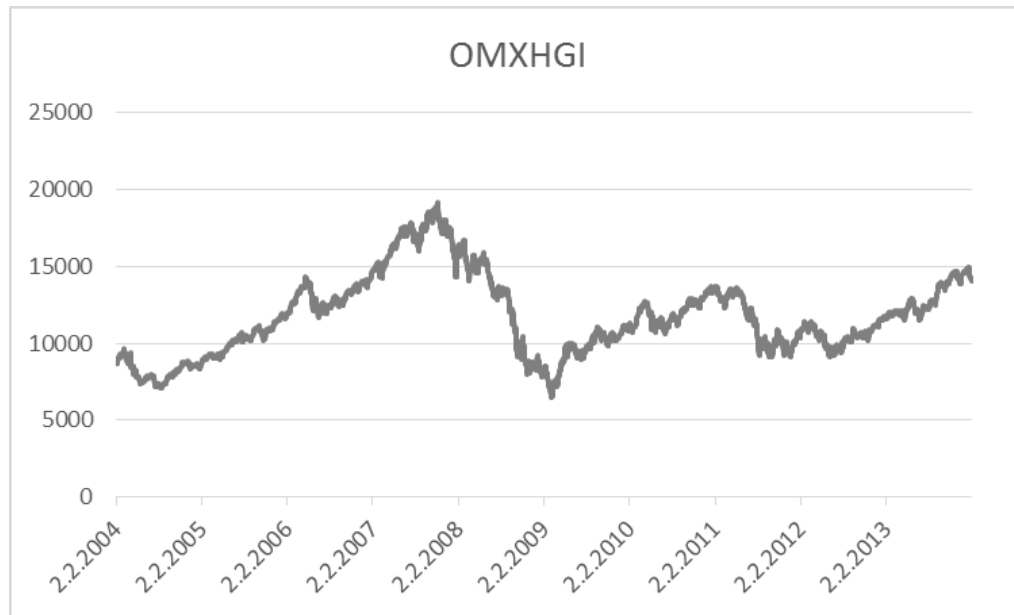


Figure 2. OMX Helsinki Gross Index values from 2.2.2004 to 31.1.2014 (NasdaqOMX 2014).

Exchange traded funds that invest in stocks according to an index are traded in the same exchange and have similar trading costs as stocks (Nordnet, 2014). Nordnet brokers to Finnish investors a total of 161 funds that purely invest to a stock index without leverage. The annual fee of the funds varies from 0.09% to 0.95% with an average of 0.46% (Nordnet, 2014).

Since there currently is not an index fund in operation that invests in all shares of OMX Helsinki, a representational average is calculated. To estimate the return of an index fund the annual return of the market including dividends is subtracted with an annual fee of 0.50%, reflecting the general level of index fund costs. The fund's annual return is applied to the starting capital of €10,000 after a trading fee of 0.20% is deducted.

OMX Helsinki all shares gross index had a return of 59.50% in the 10 years between 2004 and 2014. After the fees of a fund are deducted, the return of the index fund for the 10 years is 51.8%, 4.26% annualized cumulative return (Table 3).

Table 3. Return of index fund investing to OMXH index 30.1.2004-31.1.2014 (NASDAQ OMX Group 2014).

OMXHGI			
OMXHGI closing value Jan 30, 2004	OMXHGI closing value Jan 31, 2014	Total return	Annualized cumulative return
8,791.55	14,036.67	59.66 %	4.79 %

Index fund (0,2% subscription fee and 0,5% annual fee)			
Starting capital €	Index fund ending capital €	Total return	Annualized cumulative return
10,000.00	15,189.98	51.90 %	4.27 %

4.2.3 Stocks

For the stock case the index of OMXH 25 is used. OMXH 25 reflects the change in the OMX Helsinki stock market through the 25 most traded of its stocks in the previous 6 month period. From these 25 companies in the beginning of the investment period 10 are chosen based on their financial statements of the previous year. The criteria used to pick stocks are lowest current market value in relation to the previous financial year's earnings, the lowest value of company's assets in the sense of the current market value, the highest return on equity, the best dividend yield, and the lowest amount of debt. The formation of ratios that were used are depicted in Table 4.

Table 4. Ratios used in forming stock valuations.

EPS	=	$\frac{\text{Net earnings for the year}}{\text{Amount of shares}}$
Dividend yield	=	$\frac{\text{Dividend per share}}{\text{Current share price}}$
P/E	=	$\frac{\text{Current share price}}{\text{EPS}}$
Equity per share	=	$\frac{\text{Total assets}}{\text{Amount of shares}}$
P/B	=	$\frac{\text{Current share price}}{\text{Equity per share}}$
ROE	=	$\frac{\text{Net earnings for the year}}{\text{Shareholder's equity}}$
Equity ratio	=	$\frac{\text{Shareholder's equity}}{\text{Total assets}}$

The stocks examined are chosen from the 25 most traded in OMX Helsinki during 2004 and the ratios are calculated using information from each company's published financial statement for the financial year 2003 and using the stock price of the end of January 2004 (OMX Helsinki 2005, 6). For companies that had changes in their stock structure during 2004, for example a stock split, an average price of 2003 was used, since otherwise previous years financial information would have to be adjusted to accompany change in amount of shares.

Each ratio is given equal weighting in the valuation for simplicity, and the stocks of OMXH25 are assigned points by how high they rank in each category, the best receiving 25 points and worst 1 point (Table 5). When the stocks are ordered from highest to lowest points combined by each factor the best 10 consists a diverse combination of some of the most traditional companies in the exchange, operating in the fields of banking, electricity, pharmacy, and the manufacturing of goods (Table 6).

Table 5. 25 stocks with highest trading volume (OMXH25 index) and their financial information based on 2003 financial statements.

Stock	EPS	Dividend	Equity per share	P/E	P/B	Div. yeald	ROE	Equity ratio
Amer Sports	0.92	0.47	6.31	10.51	1.54	0.05	14.50	50.50
Elisa	-0.12	0.00	5.09	-91.58	2.16	0.00	-1.08	40.00
Fortum	0.91	0.42	7.55	8.74	1.05	0.05	12.30	40.00
Huhtamäki	0.38	0.38	7.85	25.53	1.24	0.04	5.00	50.00
Kesko B	1.05	2.00	15.07	13.63	0.95	0.14	7.40	51.70
Kone B	3.10	2.00	17.00	11.94	2.18	0.05	18.90	30.30
Kemira	0.62	0.33	9.04	10.26	0.70	0.05	7.00	44.00
Metso	-1.89	0.20	7.51	-4.26	1.07	0.02	-21.30	28.30
Metsä Board	-0.51	0.30	12.54	-10.55	0.43	0.06	-3.80	31.90
Nordea FDR	0.51	0.25	4.28	8.75	1.04	0.06	12.30	9.20
Nokia	0.75	0.30	3.22	22.15	5.16	0.02	24.40	64.80
Nokian Renkaat	0.45	0.16	1.98	14.51	3.29	0.02	20.80	44.00
Orion B	0.98	1.60	8.45	9.24	1.07	0.18	11.50	49.40
Outokumpu	0.54	0.20	10.84	19.15	0.95	0.02	4.70	32.30
Pohjola D	3.02	1.00	17.67	5.23	0.89	0.06	13.50	29.00
Perlos	0.17	0.10	2.55	37.24	2.48	0.02	6.30	43.20
Rautaruukki K	0.39	0.20	6.07	17.82	1.14	0.03	6.50	34.60
Sampo A	0.64	1.50	5.64	13.25	1.50	0.18	13.80	13.60
Stora Enso R	0.17	0.45	9.65	61.47	1.08	0.04	1.80	45.40
Tieto	0.79	1.00	5.74	29.68	4.09	0.04	14.10	60.80
TeliaSonera	0.18	0.11	2.644	22.50	1.53	0.03	8.50	56.70
Uponor	0.04	2.00	12.69	634.75	2.00	0.08	0.30	59.80
UPM-Kymmene	0.70	0.75	13.12	21.29	1.14	0.05	5.40	47.70
Wärtsilä Abp B	-0.66	0.58	13.03	-23.39	1.18	0.04	-4.50	35.00
YIT	1.64	1.20	13.38	18.60	2.28	0.04	12.50	28.30

Table 6. OMXH25 stocks from best to worst by value investing ratios.

Rank	Stock	price 30.1.2004	P/E	P/B	Dividend yield	ROE	Equity ratio	Points
1	Kesko B	€ 14.31	13.63	0.95	0.14	7.40	51.70	96
2	Orion B	€ 9.06	9.24	1.07	0.18	11.50	49.40	96
3	Pohjola D*	€ 15.79	5.23	0.89	0.06	13.50	29.00	93
4	Fortum	€ 7.95	8.74	1.05	0.05	12.30	40.00	88
5	Kemira	€ 6.36	10.26	0.70	0.05	7.00	44.00	87
6	Amer Sports	€ 9.70	10.51	1.54	0.05	14.50	50.50	85
7	Nordea FDR	€ 4.46	8.75	1.04	0.06	12.30	9.20	81
8	Sampo A	€ 8.48	13.25	1.50	0.18	13.80	13.60	76
9	Kone B*	€ 37.00	11.94	2.18	0.05	18.90	30.30	72
10	UPM-Kymmene	€ 14.90	21.29	1.14	0.05	5.40	47.70	68
11	Tieto	€ 23.45	29.68	4.09	0.04	14.10	60.80	67
12	Nokia	€ 16.61	22.15	5.16	0.02	24.40	64.80	65
13	Uponor	€ 25.39	634.75	2.00	0.08	0.30	59.80	63
14	TeliaSonera	€ 4.05	22.50	1.53	0.03	8.50	56.70	63
15	Nokian Renkaat	€ 6.50	14.51	3.29	0.02	20.80	44.00	63
16	Huhtamäki	€ 9.70	25.53	1.24	0.04	5.00	50.00	58
17	Stora Enso R	€ 10.45	61.47	1.08	0.04	1.80	45.40	57
18	Rautaruukki K	€ 6.95	17.82	1.14	0.03	6.50	34.60	57
19	Metsä Board B	€ 5.38	-10.55	0.43	0.06	-3.80	31.90	57
20	Outokumpu	€ 10.34	19.15	0.95	0.02	4.70	32.30	53
21	YIT	€ 30.50	18.60	2.28	0.04	12.50	28.30	52
22	Perlos	€ 6.33	37.24	2.48	0.02	6.30	43.20	36
23	Wärtsilä Abp B	€ 15.44	-23.39	1.18	0.04	-4.50	35.00	36
24	Metso	€ 8.05	-4.26	1.07	0.02	-21.30	28.30	32
25	Elisa	€ 10.99	-91.58	2.16	0.00	-1.08	40.00	24

*2003 average share price

The portfolio for return of the stock case is made by combining top value stocks of OMXH25. The group includes stocks Kesko B, Orion B, Pohjola D, Fortum, Kemira, Amer Sports, Nordea FDR, Sampo A, Kone B, and UPM-Kymmene. The stock portfolio is formed by investing in each of the 10 in equal size, because €1,000 investment to single company gives a reasonable starting investing cost of about 1.00% that compares well to the other investment classes. Investing evenly differs from market capitalization weighted OMXH25 index, but if the stocks were invested based on market capitalization some stocks would be bought for much smaller amounts.

Return is calculated from each stock's ending market prices in January 2004 and January 2014 with the addition from return of accrued gross dividends calculated from the starting day stock prices. Dividends are not considered to be reinvested in this investment case since the individual dividend payments are so small that annual reinvestment would have incomparably higher costs than the original investment. With the amount invested and normal dividend yields, reasonable reinvestment in a similar amount than the starting investment could occur after several years or at the end of the 10-year period.

The return from dividends excluding taxes is calculated by dividing the total dividend paid by the company from its stock price in the beginning of the 10-year period (Table 7) The total return of each stock is calculated by deducting investing fee of 1% and multiplying rest with the combined return from a single stock of the company, meaning the return from the change in the stock price and the return of the stock dividends (Table 8).

Table 7. Dividends paid 2004-2014.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Amer Sports	€ 0.47	€ 0.50	€ 0.50	€ 0.50	€ 0.50	€ 0.16	€ 0.16	€ 0.30	€ 0.33	€ 0.35	€ 3.77
Elisa	€ -	€ 0.80	€ 0.70	€ 2.50	€ 1.80	€ 1.00	€ 1.42	€ 1.30	€ 1.30	€ 1.30	€ 12.12
Fortum	€ 0.42	€ 4.33	€ 1.12	€ 1.26	€ 1.35	€ 1.00	€ 1.00	€ 1.00	€ 1.00	€ 1.00	€ 13.48
Huhtamäki	€ 0.38	€ 0.38	€ 0.38	€ 0.42	€ 0.42	€ 0.34	€ 0.38	€ 0.44	€ 0.46	€ 0.56	€ 4.16
Kesko B	€ 3.00	€ 1.00	€ 1.10	€ 1.50	€ 1.60	€ 1.00	€ 0.90	€ 1.30	€ 1.20	€ 1.20	€ 13.80
Kone B	€ 2.00	€ 2.00	€ 0.25	€ 0.25	€ 0.33	€ 0.33	€ 0.65	€ 0.45	€ 1.45	€ 1.53	€ 9.23
Kemira	€ 0.33	€ 0.34	€ 0.36	€ 0.48	€ 0.50	€ 0.25	€ 4.22	€ 0.48	€ 0.53	€ 0.53	€ 8.02
Metso	€ 0.20	€ 0.35	€ 1.40	€ 1.50	€ 3.00	€ 0.70	€ 0.70	€ 1.55	€ 1.70	€ 1.85	€ 12.95
M-real B	€ 0.30	€ 0.12	€ 0.12	€ 0.06	€ 0.06	€ -	€ -	€ -	€ -	€ 0.06	€ 0.72
Nordea FDR	€ 0.25	€ 0.28	€ 0.35	€ 0.49	€ 0.50	€ 0.20	€ 0.25	€ 0.29	€ 0.26	€ 0.34	€ 3.21
Nokia	€ 0.30	€ 0.33	€ 0.37	€ 0.43	€ 0.53	€ 0.40	€ 0.40	€ 0.40	€ 0.20	€ -	€ 3.36
Nokian Renkaat	€ 0.16	€ 0.22	€ 0.23	€ 0.31	€ 0.50	€ 0.40	€ 0.40	€ 0.65	€ 1.20	€ 1.45	€ 5.52
Orion B	€ 3.74	€ 0.55	€ 0.85	€ 1.00	€ 1.00	€ 0.95	€ 1.10	€ 1.26	€ 1.42	€ 1.30	€ 13.17
Outokumpu	€ 0.20	€ 0.50	€ 0.45	€ 1.10	€ 1.20	€ 0.50	€ 0.35	€ 0.25	€ -	€ -	€ 4.55
Pohjola D	€ 1.10	€ 0.53	€ 0.60	€ 0.65	€ 0.65	€ 0.23	€ 0.34	€ 0.40	€ 0.41	€ 0.46	€ 5.37
Perlos	€ 0.10	€ 0.20	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ 0.30
Rautaruukki K	€ 0.20	€ 0.80	€ 1.40	€ 2.00	€ 2.00	€ 1.35	€ 0.45	€ 0.60	€ 0.50	€ 0.20	€ 9.50
Sampo A	€ 1.50	€ 0.20	€ 0.60	€ 1.20	€ 1.20	€ 0.80	€ 1.00	€ 1.15	€ 1.20	€ 1.35	€ 10.20
Stora Enso R	€ 0.45	€ 0.45	€ 0.45	€ 0.45	€ 0.45	€ 0.20	€ 0.20	€ 0.25	€ 0.30	€ 0.30	€ 3.50
Tieto	€ 1.00	€ 1.00	€ 0.85	€ 1.20	€ 0.50	€ 0.50	€ 0.50	€ 0.70	€ 0.75	€ 0.83	€ 7.83
TeliaSonera	€ 0.11	€ 0.13	€ 0.38	€ 0.68	€ 0.43	€ 0.16	€ 0.22	€ 0.31	€ 0.32	€ 0.33	€ 3.07
Uponor	€ 1.44	€ 0.70	€ 2.27	€ 1.40	€ 1.40	€ 0.85	€ 0.50	€ 0.55	€ 0.35	€ 0.38	€ 9.84
UPM-Kymmene	€ 0.75	€ 0.75	€ 0.75	€ 0.75	€ 0.75	€ 0.40	€ 0.45	€ 0.55	€ 0.60	€ 0.60	€ 6.35
Wärtsilä Abp B	€ 0.58	€ 0.45	€ 1.50	€ 0.88	€ 2.13	€ 0.75	€ 0.88	€ 1.38	€ 0.90	€ 1.00	€ 10.45
YIT-Yhtymä	€ 0.30	€ 0.35	€ 0.55	€ 0.65	€ 0.80	€ 0.50	€ 0.40	€ 0.65	€ 0.70	€ 0.75	€ 5.65

Table 8. Stock portfolio return 30.1.2004-31.1.2014.

	Total dividend 04-13	Stock price end of Jan. 2004	Stock price end of Jan. 2014	Return from dividends	Price change of stock	Ending value Jan. 2014
Kesko B	€ 13.80	€ 14.31	€ 27.37	0.96	1.91	€ 2,848.24
Orion B	€ 13.17	€ 9.06	€ 19.38	1.45	2.14	€ 3,556.79
Pohjola D	€ 5.37	€ 5.83	€ 14.60	0.92	2.50	€ 3,391.13
Fortum	€ 13.48	€ 7.95	€ 15.95	1.70	2.01	€ 3,664.87
Kemira	€ 8.02	€ 6.36	€ 10.34	1.26	1.63	€ 2,857.92
Amer Sports	€ 3.77	€ 9.70	€ 15.32	0.39	1.58	€ 1,948.36
Nordea FDR	€ 3.21	€ 4.46	€ 9.93	0.72	2.23	€ 2,916.73
Sampo A	€ 10.20	€ 8.48	€ 34.45	1.20	4.06	€ 5,212.68
Kone B	€ 9.23	€ 4.05	€ 30.20	2.28	7.46	€ 9,637.22
UPM-Kymmene	€ 6.35	€ 14.90	€ 11.38	0.43	0.76	€ 1,178.03
						€ 37,211.97
Starting portfolio						€ 10,000.00
Ending portfolio						€ 37,211.97
Return						272.12 %
Annual cumulative return						14.04 %

Stocks are in order from best to worst based on the value investing criteria used at the beginning date of the investment, so their relative returns also can indicate some idea about value investing. Surprisingly, two of the last three stocks chosen had the highest individual returns together comprising of almost 40% of the ending value of the portfolio. The stock portfolio with paid dividends totaled to €37,211.97 with annual cumulative return of 14.04%. If all the stocks were invested to the same degree with the same fees, the annual cumulative return of the €25,000 starting capital portfolio would have been 11.70% (Table 9).

Table 9. Performance of all OMXH25 stocks 30.1.2004-31.1.2014.

	Total dividend 2004-2013	Stock price end of Jan. 2004	Stock price end of Jan. 2014	Return from dividend	Price change of stock	Ending value Jan. 2014
Amer Sports	€ 3.77	€ 9.70	€ 15.32	0.39	1.58	€ 1,948.36
Elisa	€ 12.12	€ 10.99	€ 19.03	1.10	1.73	€ 2,806.05
Fortum	€ 13.48	€ 7.95	€ 15.95	1.70	2.01	€ 3,664.87
Huhtamäki	€ 4.16	€ 9.70	€ 18.41	0.43	1.90	€ 2,303.54
Kesko B	€ 13.80	€ 14.31	€ 27.37	0.96	1.91	€ 2,848.24
Kone B	€ 9.23	€ 4.05	€ 30.20	2.28	7.46	€ 9,637.22
Kemira	€ 8.02	€ 6.36	€ 10.34	1.26	1.63	€ 2,857.92
Metso	€ 12.95	€ 8.05	€ 23.22	1.61	2.88	€ 4,448.24
Metsä Board	€ 0.72	€ 5.38	€ 2.95	0.13	0.55	€ 675.33
Nordea FDR	€ 3.21	€ 4.46	€ 9.93	0.72	2.23	€ 2,916.73
Nokia	€ 3.36	€ 16.61	€ 5.14	0.20	0.31	€ 506.62
Nokian Renkaat	€ 5.52	€ 6.50	€ 31.30	0.85	4.82	€ 5,607.97
Orion B	€ 13.17	€ 9.06	€ 19.38	1.45	2.14	€ 3,556.79
Outokumpu**	€ 4.55	€ 10.34	€ 0.43	0.44	0.04	€ 476.81
Pohjola D	€ 5.37	€ 5.83	€ 14.60	0.92	2.50	€ 3,391.13
Perlos*	€ 0.30	€ 6.33	€ 5.20	0.05	0.82	€ 860.19
Rautaruukki K	€ 9.50	€ 6.95	€ 8.79	1.37	1.26	€ 2,605.34
Sampo A	€ 10.20	€ 8.48	€ 34.45	1.20	4.06	€ 5,212.68
Stora Enso R	€ 3.50	€ 10.45	€ 6.94	0.33	0.66	€ 989.05
Tieto	€ 7.83	€ 23.45	€ 16.28	0.33	0.69	€ 1,017.86
TeliaSonera	€ 3.07	€ 4.05	€ 5.49	0.76	1.36	€ 2,092.44
Uponor	€ 9.84	€ 12.69	€ 11.88	0.78	0.94	€ 1,694.47
UPM-Kymmene	€ 6.35	€ 14.90	€ 11.38	0.43	0.76	€ 1,178.03
Wärtsilä Abp B	€ 10.45	€ 5.15	€ 40.27	2.03	7.82	€ 9,750.06
YIT	€ 5.65	€ 5.90	€ 9.33	0.96	1.58	€ 2,513.59
*forced to sell in 2008 at €5.20 a share						€ 75,559.54
**2003 and 2013 ending share price used						

Starting portfolio	Ending portfolio	Return	Annual cumulative return
€ 25,000.00	€ 75,559.54	202.24 %	11.70 %

4.2.4 Bonds

Although government bonds are usually sold in batches of €100,000 or larger, smaller quantities can be bought from a bank or other financial company. This however will bring in extra costs to the investor. Depending on the economic situation, the interest offered on a long-term government bond varies (Figure 3). In the case of an investment in Finland's 10-year bond, a yield of 4.16% is used, which was a reported yield in the end of January 2004 (OECD).

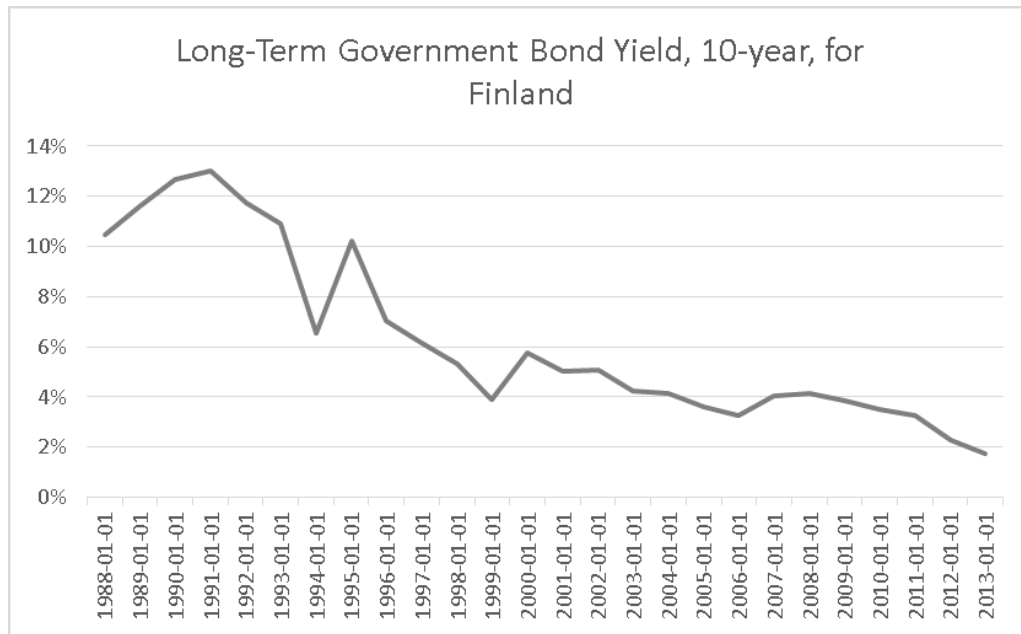


Figure 3. Government bond yield from beginning of each year in Finland (OECD 2014).

Since the nominal returns of bonds are predetermined the behavior of the investment is recorded differently from the others. The return of class of bonds is researched by modeling investing in a bond with a 10-year running time issued by the target market of Finland's treasury. For the case of investment into a single bond a 1.50% subscription fee is used, which is pretty similar in comparison the ones used in other investment cases. The return of the bond case is formed by multiplying the starting capital, minus the 1.50% subscription fee, with the return achieved from interest of Finland's government bond issued in the beginning of 2004 (Table 10). As with stocks interest payments are so small that they cannot be reinvested annually with reasonable costs.

Table 10. Return of 10-year government bond 30.1.2004-31.1.2014 (OECD 2014).

Subscription fee	1.50 %
Annual yield, Finland 10 year bond, Jan. 2004	4.16 %
Interest paid Jan. 2004 - Jan. 2014	€ 4,160.00
Starting portfolio	€ 10,000.00
Ending portfolio	€ 13,947.60
Return	39.48 %
Annual cumulative return	3.38 %

For a comparative return the long term results of funds investing in bonds are also shown, but only those where results of over 10 years can be found are included. Fund returns are depicted by deducting the starting capital with a subscription fee and multiplying it with the average return for the period. Funds that invest in European government bonds and other highest credit rating bonds are included (Table 11).

Table 11. Return of European bond funds 30.1.2004-31.1.2014, classification: long-term bonds euro (Morningstar Inc. 2014).

Fund Name	Annualized compound annual return	Total expense ratio %	Subscription fee %	Dividend distribution method
Aviva Investors Long Term European Bond B Acc	4.67 %	1.45	5.00	Reinvested
Aviva Investors Long Term European Bond B Inc	2.47 %	1.45	5.00	Paid
Aviva Investors Long Term European Bond C Acc	4.35 %	1.75	6.00	Reinvested
Candriam Bonds Euro Long Term C EUR Acc	4.84 %	0.78	2.50	Reinvested
Candriam Bonds Euro Long Term C EUR Inc	4.79 %	0.87	2.50	Paid
Candriam Bonds Euro Long Term N Acc EUR	4.48 %	1.18	0.00	Reinvested
Average	4.27 %	1.25	3.50	

	Fund's annual return	Fee %	Starting capital	Ending capital	Total return	Annualized cumulative return
Best	4.84 %	2.50	€ 10,000.00	€ 15,641.37	56.41 %	4.57 %
Worst	2.47 %	1.45	€ 10,000.00	€ 12,578.36	25.78 %	2.32 %
Average	4.27 %	3.50	€ 10,000.00	€ 14,659.56	46.60 %	3.90 %

Information can be found for only a few funds that have consistently and solely operated with European government bonds for the whole duration of the period studied. Therefore the returns of funds that invest in high yield corporate bonds are also included (Table 12). Returns of individual funds are in the same range as government bond funds, though some of them have slightly higher return and their average is also a bit higher.

Table 12. Return of high yield bond funds 30.1.2004-31.1.2014, classification: bond high yield (Morningstar Inc. 2014).

Fund Name	Annualized compound annual return	Total expense ratio %	Subscription fee %	Dividend distribution method
Baring High Yield Bond Fund - Class A EUR Hedged Inc	5.57 %	1.49	5.00	Paid
BlackRock Global Funds - Global High Yield Bond Fund A1RF	5.63 %	1.46	5.00	Paid
BlackRock Global Funds - Global High Yield Bond A2 EUR	5.62 %	1.46	5.00	Reinvested
BlackRock Global Funds - Global High Yield Bond A3 EUR	5.59 %	1.46	5.00	Paid
BNY Mellon Global High Yield Bond A EUR Acc	5.15 %	1.41	5.00	Reinvested
Candriam Bonds Global High Yield C Acc EUR	5.23 %	1.19	2.50	Reinvested
Candriam Bonds Global High Yield C Inc EUR	3.15 %	1.14	2.50	Paid
eQ High Yield 1 K	6.06 %	0.90	1.00	Reinvested
eQ High Yield 1 T	6.11 %	0.90	1.00	Reinvested
Goldman Sachs SICAV - Goldman Sachs Global High Yield	6.74 %	1.35	5.50	Reinvested
JPMorgan Investment Funds - Global High Yield Bond A	4.93 %	1.25	3.00	Reinvested
JPMorgan Investment Funds - Global High Yield Bond B	5.30 %	0.90	0.00	Reinvested
JPMorgan Investment Funds - Global High Yield Bond C	5.63 %	0.60	0.00	Reinvested
JPMorgan Investment Funds - Global High Yield Bond D	4.51 %	1.65	3.00	Reinvested
Julius Baer Multibond - Global High Yield Bond Fund EUR A	5.62 %	1.71	3.00	Paid
Julius Baer Multibond - Global High Yield Bond Fund EUR B	5.62 %	1.70	3.00	Reinvested
LähiTapiola High Yield A	5.17 %	1.34	0.80	Reinvested
Nordea Yrityslaina Plus Kasvu	6.91 %	1.00	0.50	Reinvested
Nordea Yrityslaina Plus Tuotto	6.91 %	1.00	0.50	Paid
Robeco Capital Growth Funds - Robeco High Yield Bonds DH	6.60 %	1.18	3.00	Reinvested
SEB Global High Yield A	6.11 %	0.80	1.00	Reinvested
SEB Global High Yield B	6.11 %	0.80	1.00	Reinvested
SEB High Yield Fund B	4.50 %	0.00	1.00	Paid
T. Rowe Price Global High Yield Bond Fund Ah EUR	6.18 %	1.26	5.00	Reinvested
Average	5.62 %	1.16	2.60	

	Fund's annual return	Fee %	Starting capital	Ending capital	Total return	Annualized cumulative return
Best	6.91 %	0.50	€ 10,000.00	€ 19,409.14	94.09 %	6.86 %
Worst	3.15 %	2.50	€ 10,000.00	€ 13,295.26	32.95 %	2.89 %
Average	5.62 %	2.60	€ 10,000.00	€ 16,827.54	68.28 %	5.34 %

4.2.5 Real estate

The chosen investing method for this class is passive investment for the whole period studied, by calculating averages for appreciation in house prices while taking into considering the additions and deductions issuing from financing, maintenance costs, and rent. For comparison funds that invest in real estate and have been in operation for the whole period's duration are also included.

For a real estate investment many variables have an effect on the return, mainly the type of the house, location, and costs for maintenance. The type of the property may it be single family, semidetached, or an apartment house affects to the demand for it in the market as well as its size and location.

The type of the dwelling or location is not taken into consideration in the research because purpose is to reflect the options of an investor with small starting capital where from all options the best available one would be chosen regardless of its type, size or location, as long as it would be expected to turn the best profit and be affordable. For accomplishing that the averages of the whole country are used.

In 2013 the average space of a household-dwelling unit was 39.2m². For the example of the investment case a size of 40m² is used. The amount of the total investment would be €65,092 with €1,627.30 per meter price used (Table 13). From Statistics Finland (2014) the prices of square meter for real estate in 2004 were not available, but the average is assessed from the price of €1,798.10 recorded in first quarter of 2005 for the 9.94% development of general house prices the first quarter of 2004 to the first quarter of 2005.

Table 13. Prices and costs of real estate in Finland (Statistics Finland 2014).

Price of real estate 1st quarter			
Price index		Average price per m ²	
2014	321.8	2014	€ 2,587.18
2013	332.7	2013	€ 2,561.70
2012	334.3	2012	€ 2,482.00
2011	332.4	2011	€ 2,428.21
2010	318.7	2010	€ 2,350.24
2009	291.3	2009	€ 2,096.00
2008	303.8	2008	€ 2,173.79
2007	299.8	2007	€ 2,098.36
2006	287.0	2006	€ 1,971.73
2005	263.2	2005	€ 1,789.09
2004	239.4	2004	€ 1,627.31

Average rent			Average maintenance fee		
Monthly per m ²			Monthly per m ²		
2013	€	11.61	2013	€	3.35
2012	€	11.19	2012	€	3.08
2011	€	10.79	2011	€	2.93
2010	€	9.86	2010	€	2.77
2009	€	9.48	2009	€	2.71
2008	€	9.04			
2007	€	8.72			
2006	€	8.37			
2005	€	8.27			
2004	€	8.07			

An investment in real estate with these parameters will have to be partly financed with a loan, so there are interest payments that will lessen the benefit gained from rent payments. According to Statistics Finland (2014) average annual interest on house loans was 1.92% in countries of EMU in years 2010-2013, while 6 month Euribor has been on average 2.05% in years 2004-2013 (Bank of Finland 2014).

Banks grant loans with an interest rate of Euribor rate with an added premium. For calculating the return of the investment a 2.40% interest rate is used, as is suggested in the website of Finnish bank OP-Pohjola Group (OP-Pohjola Group 2014). To have the average house of a 40m² size, an investment of €70,000 is portrayed, where €60,000 is financed with a loan. OP-Pohjola Group has stock terms of €230.00 fixed sized monthly payments for a €60,000 loan maturing in 30 years (OP-Pohjola Group 2014). In a fixed payment loan the amount of monthly payments increases if the interest rate goes up.

Transfer tax on property is not taken into consideration since in Finland transfer tax is lifted if the property is bought as a dwelling house and the buyer is under 40 years old and has not bought a house before, which would apply to many real life situations similar to the example case (L931/1996). It also eases the comparison between classes since publicly traded stocks are also exempt of transfer tax in Finland and international funds may to some degree choose which country to pay taxes to. In this example taxes from the rent are not considered as are not the incomes in other cases.

With average rent and costs the investment case has a value of €42,819.75 at the end of the period when the amount of unpaid debt is deducted, which is a total return of 328.20%. This would mean an annual cumulative return of 15.65% (Table 14).

Table 14. Return of real estate investment 30.1.2004-31.1.2014.

Real estate investment 40m2, 30 year loan						
Annual interest rate	Monthly repayment	Total loan and loan costs				
2.40 %	€ 230.00	€ 82,800.00				
Monthly maintenance fee	Monthly rent	Real estate annual appreciation				
€ 118.72	€ 381.60	3.00 %				
Starting Capital	Starting loan	Value of real estate 2004	Loan repayments paid	Maintenance fees paid	Rent payments received	Rent earnings
€ 10,000.00	€ 60,000.00	€ 70,000.00	€ 27,600.00	€ 14,246.40	€ 45,792.00	€ 3,945.60
Situation of investment in 2014						
Value of real estate 2014	Loan outstanding	Equity on real estate	Ending capital	Total return	Annualized	
€ 94,074.15	€ 55,200.00	€ 38,874.15	€ 42,819.75	328.20 %	15.65 %	
Real estate fund investment 10 year return						
	Annual return	Subscription fee	Starting capital	Ending capital	Total return	Annualized cumulative return
Best	6.88 %	0.70 %	€ 10,000.00	€ 19,315.84	93.16 %	6.80 %
Worst	1.74 %	5.00 %	€ 10,000.00	€ 11,288.62	12.89 %	1.22 %
Average	4.56 %	2.70 %	€ 10,000.00	€ 15,197.38	51.97 %	4.27 %

There are many funds that invest in real estate but number of ones concentrating solely in Finland is very limited, and there is none available that would have record of operation for over 10 years, so returns of fund investing real estate in Europe are listed. Morningstar follows 29 fund companies that invest in European real estate, 21 of which have been operating for over 10 years. In forming a return of an average fund performance fees are not calculated since from the 21 only one Henderson Horizon Fund deducts a one-tenth of profits, while their return is not much better than the group as a whole.

For calculating the fund returns a subscription fee of 2.70% is deducted, which is the average of all the funds. Subscription fee is relatively high when compared to all funds reviewed of different asset classes, although Finnish real estate companies seem to have lower fees: eQ, Danske kiinteistö, and OP-kiinteistö have 1.00% fee while United Bankers

has none. The average return of the fund group is 4.27% that pales in comparison to the leveraged direct investment case, even if the fund is much easier and more flexible investment (Table 15).

Table 15. Funds investing in European real estate 30.1.2004-31.1.2014, classification: real estate companies, Europe (Morningstar Inc. 2014).

Fund Name	Starting Fee %	Total expense ratio %	Annualized cumulative return	Dividend distribution method
Aviva Investors European Real Estate Securities Fund B EUR	5.00	2.13	4.69 %	Reinvested
Aviva Investors European Real Estate Securities Fund Bx EUR	5.00	2.01	1.74 %	Reinvested
Aviva Investors European Real Estate Securities Fund C EUR	6.00	2.63	3.99 %	Reinvested
Candriam Equities B European Property Securities C Acc EUR	2.50	1.89	4.32 %	Reinvested
Candriam Equities B European Property Securities C Inc EUR	2.50	1.89	4.23 %	Paid
Credit Suisse Equity Fund (Lux) European Property B	5.00	2.15	3.87 %	Reinvested
Danske Invest Kiinteistö K	1.00	1.90	1.76 %	Reinvested
Danske Invest Kiinteistö T	1.00	1.90	1.76 %	Paid
eQ Eurooppa Kiinteistö 1 K	1.00	1.50	5.38 %	Reinvested
eQ Eurooppa Kiinteistö 1 T	1.00	1.50	5.38 %	Paid
Henderson Horizon Fund - Pan European Property Equities Fund A2	5.00	1.91	6.08 %	Reinvested
ING (L) Invest European Real Estate P EUR Acc	3.00	1.93	6.37 %	Reinvested
ING (L) Invest European Real Estate P EUR Inc	3.00	1.94	6.35 %	Paid
ING (L) Invest European Real Estate X EUR Acc	5.00	2.43	5.83 %	Reinvested
Morgan Stanley Investment Funds European Property A	5.75	1.75	4.47 %	Reinvested
Morgan Stanley Investment Funds European Property B	0.00	2.76	3.40 %	Reinvested
Morgan Stanley Investment Funds European Property I	3.00	1.01	5.23 %	Reinvested
OP-Kiinteistö A	1.00	1.80	3.61 %	Reinvested
OP-Kiinteistö B	1.00	1.80	3.61 %	Paid
UB Eurooppa REIT Kasvu	0.00	0.70	6.88 %	Reinvested
UB Eurooppa REIT Tuotto	0.00	0.70	6.82 %	Paid
Average	2.70	1.82	4.56 %	

	Fund's annual return	Fee %	Starting capital	Ending capital	Total return	Annualized cumulative return
Best	6.88 %	0.70 %	€ 10,000.00	€ 19,315.84	93.16 %	6.80 %
Worst	1.74 %	2.01 %	€ 10,000.00	€ 11,643.92	16.44 %	1.53 %
Average	4.56 %	1.82 %	€ 10,000.00	€ 15,334.82	53.35 %	4.37 %

4.2.6 Commodities

Gold is chosen as a single investment of the numerous other investable commodities. The price change of gold is measured using London Bullion Market Association's daily set market price of troy ounce, which determines prices used in trades of large volumes between financial institutions. In the 10-year period studied the price of gold has appreciated well above the rate of inflation (Figure 4). The reason for this could be extra demand attracted by the fall of the stock market in the first half of the period, or other economic factors.



Figure 4. Change in gold price in US dollars 2004-2014 (LBMA 2014).

The normal investing fee, a premium in the purchase price over the prevailing market price, is deducted from the starting capital. When gold is bought in small quantities the premium is several percent, depending on the selling agency. In Finland currently a 100g bar of 999.9 assay gold can be bought at a price of €3,125.74 which is about 2.25% higher than the same day's market price on the gold content (Kultapörssi 2014; LBMA 2014). Physical gold does not have maintenance costs unless it is stored in a vault in a safe deposit box service from a bank, but this is not taken into consideration. For direct investment in gold a fee of 2.5% is used as an indicator of the cost of premium to consumers (Table 16).

Table 16. Change in gold price, examples of consumer prices of gold in Finland and return of a gold investment 30.1.2004-31.1.2014 (LBMA 2014; Tavex 2014; Kultapörssi 2014).

	U.S. Dollars per Troy Ounce	Return 10 years	Annualized cumulative return		
2004-01-30	\$ 401.30				
2014-01-31	\$ 1,246.50	210.62%	12.00%		
1 oz sold, 1.12.2014, Tavex				€ 1,021.42	
1 oz London fix price, average 1.12.2014				€ 950.87	
Premium on a purchase of 1 oz				7.42%	
100g sold (3,215 oz), 1.12.2014, Kultapörssi				€ 3,125.74	
3,215 oz London fix price, average 1.12.2014				€ 3,057.03	
Premium on a purchase of 100 g				2.25%	
Annual return	Subscription fee	Starting capital	Ending capital	Total return	Annualized cumulative return
12.00%	2.50%	€ 10,000.00	€ 30,282.02	202.82%	11.72%

As a comparison a return of a fund is added. Funds investing in commodities have increased after financial crisis, but there are not that many that have been in operation for the whole investing period of 2004-2014 (Ferri 2007, 18-19). In Finland there is only one fund even close to having long enough history to be usable. Danske Invest Kulta fund has been investing in gold since November 2004 with an annual return of 8.88% 11.11.2004-31.1.2013 (Morningstar 2014). If investment in gold were started in 11.11.2014 return from price appreciation would be 187.64% instead of the 210.62% from the whole 10 year period (LBMA 2014). Additionally an example for a return of a passive fund following gold's price index is modeled by using gold price index and deducting same fees as in the index fund portfolio (Table 17).

Table 17. Return of funds investing in gold 30.1.2004-31.1.2014 (Morningstar Inc. 2014; LBMA 2014).

	Annual return*	Subscription fee %	Annual fee*	Starting capital	Ending capital	Total return	Annualized cumulative return
Danske Invest Kulta	8.88%	1.00%		€ 10,000.00	€ 23,180.15	131.80%	8.77%
Index fund	12.00%	0.20%	0.50%	€ 10,000.00	€ 29,640.07	196.40%	11.48%

*LBMA gold price return for the index fund
**Danske Invest Kulta has annual fee included in the return

4.2.7 Funds combined

Results of funds differ notably between groups using different investment classes and between direct investments and funds owning similar assets (Table 18). Even though fund and an investor holding the same asset should have a similar return in a time period, differences occur from varied levels of fees, and that funds may trade and rebalance their portfolios during the period in question.

The averages of fund returns from each asset class are listed from best to worst for comparison, the highest being the commodity class and government bonds the lowest (Table 18). An investment of €10,000 in the commodity fund would have had an estimated value of €23,180.15 after 10 years, meaning a 131.80% total return 8.77% annually, while investment in the average of government bond class would have totaled €14,659.56, which equals a return of 46.60%, 3.90% annually.

Table 18. Returns of fund classes based on averages from highest to lowest.

	Starting portfolio	Ending portfolio	Total return	Annualized cumulative return
Commodities*	€ 10,000.00	€ 23,180.15	131.80 %	8.77 %
Stocks	€ 10,000.00	€ 21,906.44	119.06 %	8.16 %
High yield bonds	€ 10,000.00	€ 16,827.54	68.28 %	5.34 %
Real estate	€ 10,000.00	€ 15,334.82	53.35 %	4.37 %
Index fund	€ 10,000.00	€ 15,191.26	51.90 %	4.27 %
Government bonds	€ 10,000.00	€ 14,659.56	46.60 %	3.90 %

*includes only Danske Invest Kulta starting 11.11.2004

As a whole average returns from funds were lower compared to direct investments, which is to be expected considering the funds have annual managerial fees that dilute the compounding return. The major difference occurs in the asset class of government bonds, where funds investing in government bonds had higher average return than the direct

investment into a bond in the beginning of 2004. This reflects the volatility of the bond market, since when investing into a bond the investor has to accept the interest available at the moment or to purchase a previously issued bond with a higher interest whereupon a premium over the original price of the bond will have to be paid. Funds usually manage a rolling portfolio of bonds maturing at different times so investor will receive a return more resembling the available yields averaging from previous times, deducted with the extra costs.

Order of fund returns from highest to lowest differs partly from the returns of directly invested portfolios. Real estate funds have a lot lower return than the projected one for an actual direct investment into real estate, which may indicate the unexpected expenses accruing from owning and managing rented real estate. Other change is the high return of commodity funds, coming from the only one fund that has operated for close to 10 years from January of 2014. The average return may differ if more of funds investing in these kinds of assets perform for a longer duration.

4.3 Results

The returns of the example portfolios for each asset class for the years 2004-2013 shows real estate as having had the best return overall of 328.20%, an annualized cumulative return of 15.65% (Table 19). The return for the real estate portfolio would indicate an ending value of €42,819.75. There is a lot of variation between the returns of each portfolio, the lowest being the bond class that had an ending value of €13,947.60. Return from the bond class is 39.48%, or 3.38% annually.

Table 19. Return from all investment classes from highest to lowest.

	Starting portfolio		Ending portfolio	Total return	Annualized cumulative return
Real estate	€	10,000.00	€ 42,819.75	328.20 %	15.65 %
Stocks	€	10,000.00	€ 37,211.97	272.12 %	14.04 %
Commodities	€	10,000.00	€ 30,282.02	202.82 %	11.72 %
Stock funds	€	10,000.00	€ 21,911.23	119.06 %	8.16 %
Index funds	€	10,000.00	€ 15,189.98	51.90 %	4.27 %
Bonds	€	10,000.00	€ 13,947.60	39.48 %	3.38 %

A remarkable thing is that all classes had higher return than average annual inflation during the period which was 1.91% in Finland (Table 20). A positive return over inflation indicates that investor could have retained the buying power of their investable savings in any of the categories considering no alterations were made in the 10 year period.

Table 20. Finland's consumer price index value in end of each January 2004-2014 (OSF 2014).

2014	126.6
2013	124.6
2012	122.6
2011	118.8
2010	115.2
2009	115.4
2008	113.0
2007	108.8
2006	106.3
2005	105.0
2004	104.8

Change in index Jan. 2004 - Jan. 2014	
Total	20.80 %
Annual cumulative average	1.91 %

Global financial crisis in 2008-2009 had influence in investments in all classes. Among others it was shown in a steep drop in market value of stocks and in plateau in the rise of housing prices. For example, in real estate funds the highest return for the whole 10-year

period from January of 2004 was with UB Europe REIT, which among others had a negative return from January of 2004 to middle of 2009.

A dramatic drop in values of some assets during 2008-2009 did not prevent the portfolios to have higher returns than inflation. Although the whole period starts only few years before the crash, stocks and funds bounced back and regained their value. The calculated return could only be reached if the investment was not traded during those years, regardless of how bad the situation would have seemed at the time.

From different classes some of the passive investments did the best with real estate, stocks, and commodities reaching double digit returns, with actively trading stock funds staying in the middle. Even though index funds and bonds individually did worse than stock funds, still this average return of actively trading funds was lower than average of all cases. This gives an indication on how high of a burden costs of active trading are even if the decisions were made by one of the best professional investors available.

The selection of strategy can also be considered to be relevant as was seen in comparing stock portfolio to stock funds and the index. Crudely picking 10 stocks from the index using value investment parameters, with no analysis of multiple years or consideration for forecasts, produced 2.34% higher return in this case than investing in all 25 stocks of the index, when other things such as size of the holdings, investing costs, and no changes to the portfolio during studied period were equal.

Advantage of investing in the value stocks was also seen in how well their market prices fared during the financial crisis. In 12 months from the end of January 2008 to the January 2009 the market index OMXHGI dropped 49.26% while market price of the stocks chosen averaged only a drop of 37.41% (Table 21).

Table 21. Change in stock values during financial crisis.

	Closing price Jan. 2008	Closing price Jan. 2009	Change
OMXHGI	15,899.86	8,067.41	-49.26 %
Kesko B	34.17	19.25	-43.66 %
Orion B	15.07	13.48	-10.55 %
Pohjola D*	13.07	9.75	-25.40 %
Fortum	27	15.28	-43.41 %
Kemira	9.3	5.1	-45.16 %
Amer Sports	12.85	5.62	-56.26 %
Nordea FDR	9.05	4.15	-54.14 %
Sampo A	17.47	12.57	-28.05 %
Kone B	11.13	8.22	-26.15 %
UPM-Kymmene	12.62	7.4	-41.36 %
Average			-37.41 %

*End of year 2007 and 2008

The vitality of choosing a strategy also applies to other categories, but can partly be more difficult. For example, when investing through funds investor may also pick the subject based on what strategy they use. But with funds the difficulty lies in the issue that investor may not be totally sure that the fund actually incorporates strategy in accordance the way that the investor understands the strategy. Fund may also change the way they invest or the staff handling the trading may change, and it is difficult for a small time investor to be able to react to these changes since the only information available to them are latest results, prospects, interviews given, and other publications that the fund may produce.

A comparison of different classes directly is also somewhat difficult due to their differences. Stocks and bonds bought 10 years ago actually made the return showcased in the research to everyone who invested into them, whereas the real estate case incorporated averages of prices and costs and return calculated from them is fictional showing what likely might have happened but in reality results could be different. The same applies to funds being portrayed through the average return, where a real return of a fund investment would have been higher or lower but not exactly the average.

Although some information used such as interest rates and stock prices are certain and part of public knowledge, there can be some uncertainty in the results provided. Returns of funds were gathered from Morningstar's database, which questions the reliability of the

findings since only one source was used. Morningstar is however a reputable company, and other long spanning cross asset class research were not available. Additionally real estate information was based on national statistics that are calculated from information surveyed from some parts of the country and there can be unreliability in statistics of this kind.

In the case of funds the trouble is that they may not operate for a period long as the one surveyed. Only part of the funds currently in operation have a history of at least 10 years, some having been closed and others portfolios being merged into other funds. Particularly long-term information funds investing in bonds, real estate and commodities were scarce even though currently there is sizeable offering in each fund class.

Many funds have been operating for over 10 years but commodities have only one close to it, which makes the comparison of the returns grouped by class unsure to some degree. Although the return from investment in the gold fund is lower than the demonstrated direct investment over the fees accrued by the fund shows gives some sensibility, since a fund holding its assets in gold would have had similar returns to an investor doing the same in the time period, if costs are not accounted for, so the return of the commodity fund class can be thought of as indicative of funds of this class.

As a whole return formulated for each class in the study can be used as information for a small time investor making a first time investment, although more in-depth research into returns of an asset could be needed for more accuracy. The returns showcase how funds participating in active investing fare against passively held direct investments and how different asset classes have appreciated in value during the last 10 years.

4.4 Previous research

4.4.1 Some historical returns for investment classes

From previous studies an example is searched for each class that shows research from a longer period as a reference is looked for. When looking at a single decade changes of cycles in economy may produce abnormal results and how useful the comparison of classes is going forward. Results are expected to have been previously pretty similar to

what is observed in the study, but previous returns may differ in some classes if a different style of research has been conducted, maybe in the target market or asset selection used. Comparative returns used will also consist of several subjects and concentrate on classes similar to the ones defined in the thesis research.

For results about stock funds there are several studies to choose from, and in many long term examinations average fund returns have been below their benchmark indices after costs have been deducted. Ojanperä (2011) reported that in 10 years ending in 2010 Finnish funds investing in the European stock market average annual cumulative returns were 0.84% lower than the total return of Stoxx Europe 600 index, a benchmark for the European market consisting of 600 major companies. That study recorded 25 funds that had a history of 10 year at minimum during economically worse period than 10 year period ending in 2014. From end of January 2004 to end of January 2014 Stoxx Europe index's annual return was 6.76% which is significantly higher than Helsinki's used in this thesis. Using Europe index would not have changed the order by return of investments studied, but it would have indicated higher return of about few percent for the index fund case.

A considerably earlier study done on the 10 largest stock funds in the United States in the 60s found that these, considered as one of the best funds at the time, averaged a similar return than the major United States stock market indices S&P 500 and Dow Jones industrial average (Graham 2009, 230-231, 377). In this study stock funds had higher returns on average than the corresponding market index, and even the worst performing funds had similar return to the market index. This relationship of overall good performance of the stock fund class and low return of index fund class may alter in future.

Passive holding of stocks, either through index funds or a portfolio of stocks gains return from basically the same kind of assets, although differences occur depending on which companies are chosen and how costs accrue. However during 2004-2014 investing directly in shares of OMXH25 index in the beginning would have produced decidedly better return than an index fund. Smaller return of the index may be due to cost of rebalancing the selection of stocks that can occur during times of economic unease because the index follows only the highest traded stocks.

A company in a financially bad situation may have its stock price drop and experience lowering in public interest and trading volume resulting in the stock being removed from the index, while another company can be expected to grow its earnings in near future and increase its popularity and trading volume. Both the pressure to sell and buy these companies and their polar opposite financial outlooks can discharge sometime in the future, but an index fund would be forced on day one to sell the first one on a lower and the latter higher than average price over a longer period of time, which makes it more difficult for a fund to achieve good return versus investor who is not required to sell or buy when trading volumes shift.

In a study spanning long amount of time, returns of investments done in the United States stock market had annual cumulative return of 8.30%, which was formed by combining historical records of consecutive total market indexes from 1802-2006 (Siegel 2008, 13). Similarly in a study done internationally spanning 100 years annual cumulative return was 10.10% in the United States 1900-2000, while the average from all the 16 countries involved in the study was 10.31% (Dimson et al. 2002, 46-48). These numbers indicate a lot higher return than what was experienced in the Helsinki stock market during the 10 year period.

The success of using financial statement analysis in choosing stocks has been researched in numerous studies over the years and desirable stocks based on value investing parameters have been found to have produced higher than average returns. A global study to stocks 1976-1996 found that return increased at least 7.50% annually when concentrating on stocks with high book-to-market ratio, reverse of P/B, and have good values in other parameters (Piotroski 2000, 2). Similar premium on return was found in a study consisting of major part of the publicly traded stocks in the United States 1929-1996 (Davis, Fama & French 1999, 15).

Investment in bonds is generally stable but the return achievable differs greatly depending on when the investment is made. For the longer term government debts of a 10 year maturity an average return for United States has been calculated to be about 5.00% annually 1802-2006 (Siegel 2008, 15). Another study measured annual return at 4.80% in United States from 1900 to 2000 (Dimson et al. 2002, 46-48).

In the section of real estate and commodities, returns vary depending on the time period in question. Housing prices in Finland have appreciated 4.19% annually from 1985 to 2014 which is bit higher than in the period studied (OSF 2014). And although in the 10 years ending January 2014 gold had significantly higher return than inflation, this has not been the case before consistently. Siegel (2008, 13) reported an annual return of 1.70% for gold 1801-2006 while increase in consumer prices was 1.4%. While in the last decades inflation has been slightly higher, value of gold has also appreciated on a faster rate. In the 45 years ending January 2014 return was 7.79% annually (LBMA 2014).

4.4.2 Comparability of previous findings

A portfolio of stock funds in the study had a return of 8.16% annually, which is very good considering the return of the market in the period. In other studies the average performance of funds has been about in the same level as the whole market.

In the study, return appointed to index fund was 4.27% annually, significantly lower than stocks or stock funds. The return from the start of the index OMXHGI in 1999 accounts for an annual return of 4.58%. The period in question had lower return compared to historical values of other stock markets from longer span of time. On the other hand stocks' average return between 2004 and 2014 14.04% was annually, in accordance to market return and the excess achieved previously from value investing.

The government bond's return was on the level with researches of longer time spans. Although the 3.38% annual return was a bit lower than average in the 20th century in the United States and in the United Kingdom. Finland issued bonds during some of the years in 1980s and 1990s that had over 10% interest rates (OECD 2014).

Real estate had a return of 15.56% annually, which is high considering the appreciation in value of housing and rise in general price levels. 1985-2014 annual increase in housing prices in Finland has been 4.19% while in the 10 year period studied it was 3.00%. The return above inflated prices comes from the rent income.

In the class of commodities the annual return from investment in gold was 11.72% annually 2004-2014. The annual return for this period is remarkably higher than what could be expected based on historical price appreciation.

In conclusion the previous results mostly are similar to those obtained in this study. Deviations from previous research may be occurrences from temporary shifts in economy that behaves cyclically and after time returns to norm. It can be expected that the results generally remain at the same level on average in the long run, even though there can be no certainty of it in advance.

5 SUMMARY

5.1 Conclusions about results

The return for each relevant class of assets was formed through example portfolios and estimated change in their value during the course of the 10 year period. The highest returns were found in real estate, commodities, and stocks, while index fund and bond were the lowest, while them as well were higher the inflation.

The reason for variation in returns between portfolios comes from the underlying assets varying ability to produce value to the invested resources it has, but also the outside factor of return-draining fees springing from trading and managing the investment. The effect of fees is evident when averages of returns from fund groups and direct investments are compared, the first ranging from 3.90% to 8.77% annually while highest of the latter reaching up to 15.65% (Table 18; Table 19). A comparison of stock portfolio that does not have annual costs to the average of funds shows the difference in returns that can be brought by trading and managing costs.

Real estate had the highest return of investments, but when compared to others there is a lot of uncertainty involved in the assessment. Return is calculated at the end of the 10 year period, but it may not be the final received by an actual investor. At the end of the period it is still partly financed by a loan so investor would not actually receive the total reported return at the end of the 10 year period. Additionally the annual return up to the point where loan has been totally paid of remains to be seen.

The higher return of real estate compared to all the other investments is surprising, while stocks, the case considered having highest risk when invested directly, did almost equally well, which was more expected. While stock prices waver a lot, real estate has potential problems in financing, maintenance expenses, and collecting rent payments. However, in the case of real estate investment return can partly be expected to be more certain, because at least in the situation of owner-occupied housing the side of rent revenue is highly secure and there is no bad-tenant issue.

When an investor lives in the property invested in, rent can be thought of as an income stream of the money not spent living somewhere else, and the example consumer of the study is expected to be living somewhere and affording to pay rent, otherwise investing would not be currently possible. Although rent income is guaranteed the use of leverage makes for an additional risk of losing the value of the investment and a roof over your head at the same time. In the investments that do not have leverage investment can be sold without the investor encountering additional housing costs at the same time.

In the example case of real estate investment the return is much higher than the average return from real estate funds in the same period. It should be taken into account that in order to receive positive earnings from rental cash flow a seriously long term loan has been negotiated. Over half of the total investment is still funded with a debt in the end of the 10 year period, so it could not be sold just as easily as other assets such as funds investing in real estate, without having to pay additional costs from debt arrangement and selling.

Another class with high return was direct investment in stocks, although the 10 years in question were especially good considering what kind of return stocks have generally produced. Some stocks of the OMXH25 selection over the years have not produced profit to pay dividends or even have gone bankrupt. Actual examples include Elcoteq that was part of the index in 2003 filed for bankruptcy in 2011 and Talvivaara that in 2014 was in the index but has been suspended from trading pending bankruptcy proceedings and having been previously trading with a price of couple of cents. Stock owners of these two have practically lost all the principal they invested.

Although stocks had a good return, receiving a similar return in future may be difficult. The intend of value investing was to choose lower priced stocks which has been a

successful method previously, but for an investor the trouble is that the low pricing of those stocks may last for years. If stocks need to be sold before the price inflates investor would be left with an unsatisfactorily low return.

Value stocks could be appreciated in low prices for long periods of time, maybe 10 years or more: however, when considering how well stocks did in previous 10 years studied while it included one of the steepest drops of the last 100 years and the investment period started well before the decline, results much worse in a 10 year period can be considered unlikely.

A mediocre case was stock funds, where the lower return when comparing to stocks can be taken as an indication of the costs of active trading. In the market funds are competing against each other to make better returns, and when someone has the best of it in a trade other loses and on the aggregate returns are on a moderate level due to expenses.

Furthermore, part of the return of the direct stock investment illustrates how well passive value investing can succeed. The return from the portfolio is better than the aggregate of all the stocks in OMXH25 when invested passively or the return of the total market index (Table 8, Table 9). Based on this finding there is a benefit in choosing stocks based on information gathered from their financial statements. Maybe the index's wider selection of stocks includes some that are of companies currently performing weaker, going through change that demands earnings or otherwise looking to grow the business in order to have higher earnings for owners in some future time.

Even though bonds are considered to be safer than the other asset classes and had smaller return, direct comparison to others can be made. The main risk that is involved in bonds, the insolvency, did not occur during the 10 years in this market, and in any case assessing likelihood of such an event is very difficult. Therefore a realistic general average return is difficult to assess, other than what has been recorded previously. In most cases disastrous-looking situations in the world occur from time to time, but often actual loss happens only for investors who give up their investments when their value has fallen.

On the other hand, even in the last few decades multiple countries have defaulted on their loans. So of the security which the investor pays by missing an opportunity to earn a better

return from something else can also be questioned going forward. A different situation would be where the investment period is shorter, for example a year. Then along with return key thing to consider would be how highly the price of such an asset fluctuates in a time period, since some assets such as stocks can lose large part of their value inside a year. When investing for shorter periods than 10 years, bonds, or bank deposits may be the most sensible option.

In last decades gold has had a lot better annual return than in previous eras, but this trend may not continue going forward. It is possible that value of gold drops in some future period, and return for longer term return to closer to the one evidenced over longer stretches of time. Latest rate of price increase could be affiliated with other issues going on in the economy, and if gold is not needed as a safe investment in a time of upswing in economy return could turn out to be poor.

All in all benefits of passive investing can be seen in the investment classes. Returns are above the inflation, even for an investment such as gold that might not expected to appreciate so much in value. But if gold or the other assets were traded multiple times during the period it could have a negative effect on the return and with a bad timing result in a loss.

The trend in fund returns in all asset classes excluding bonds is that they had lower returns than a direct investment in the same class, and in the only exception bonds the return was similar both in direct investment and in funds. Funds offer good diversification through having a large portfolio, but even still costs weaken the return down from passively holding the same assets, and expert trading in most cases is not able to overcome that fact. Although if the funds are doing worse than direct investments they are sold in a lot smaller unit sizes than some assets and certainly offer the benefits achieved from diversification.

One thing to note about the fund returns is that the order from highest to lowest is different than in the actual investments cases studied that included direct investments. What it indicates is that investment to an asset class through funds may not provide as good of a return as could be thought of based on the research, such as in real estate where the asset class invested in directly had a high return but the funds did not, or stocks where stock funds also had decent return but index fund did not in this research.

In summation when compared to previous researches results are mostly similar. The biggest difference is in the return of gold that contradicts most severely from previous longer spans of time, and thus can be considered doubtful as continuing similarly as it has done the previous 10 year period. Another uncertain one is real estate due to the requirements of large single investment and its difference of how it is traded in comparison to financial assets.

The differences in returns between asset classes mainly are what could be expected from existing studies, but regardless the results are not final. In next years some classes may have seriously higher or lower returns and the order from better to worse may alter. In next 10 year periods gold may have lowest return of the bunch equaling that era's inflation while also stocks can have periods of returns even below inflation. Real estate has its own problems, while prices tend to follow general price levels trouble can arise if costs increase above the rent income. Generally returns of 2004-2014 might not repeat in the next 10 years but similar levels of returns can be expected.

5.2 Suggestions for investing

For an average consumer the best option out there might be stock funds that received a middling return in the 10-year period amidst all the classes. The average return from the stock fund class was good and clearly preserving the value of investment and even producing a decent return above inflation. Furthermore, the investment into funds can be made by allocating in to multiple subjects without accruing much extra costs, so the average return measured in the research could also be obtained in a real situation.

Although no results are certain, if above average returns are wanted the risk of receiving a lot lower return has to be also accepted. Even though the best returns in the study were received from real estate, stocks and commodities, similar returns from them are difficult to obtain in future. Additionally these classes are difficult investments due to uncertainty and particularly in real estate issue is liquidity, or difficulty of selling the investment if needed.

To be able to invest in real estate with small starting capital financing is needed and to be able to cover its costs, loan has to be made on a very long term basis. During the

repayment period of the loan the asset owned by the investor carry the liability of credit, and the return indicated by the current market value would not be fully received by the investor. Additionally, the market situation and extra financing costs have effect on the return received if the property were sold before the loan was fully paid back.

When directly investing into stocks of companies the burden lies on the consumer to understand how the companies owned are doing financially. It is difficult to know if and when stocks are needed to be sold to prevent from taking a loss, but funds have resources of professional managers, analysis and forecasts that may in some amount afford the possibility to anticipate economic changes both in the market and companies that have been invested in. Return for funds was lower than some of the classes in the study, but it is good and results can be thought to be dependable, while also fund shares are easy to sell.

With its high return in the 10 year period ending in 2014 gold also seems as a lucrative option. However in light of gold's return previously indicates that it could also be notably lower than other well-performing assets in future.

If consumer means to invest in period longer than 10 years and can invest more after a time diversification in to many asset classes would be advisable. The future returns may differ from the ones experienced now and some assets may produce losses in some periods even though 2004-2014 has been good across the selection. Way to insure against changes in the market would be to increase the portfolio from time to time using mainly direct investments and branch into multiple of the classes that had high returns to that way try to achieve return above mean of the returns presented.

A clear finding in the research is that to be able to receive returns resembling the higher ones portrayed in the study the amount of trading should be minimized. All classes had above inflation returns in 2004-2014 but they would have not have been achievable if there was more trading taking place during the period.

5.3 Ideas for further research

The standings of classes by returns reported in this study are mainly what were expected per previous figures, although a few classes, namely commodities and stocks, divaricated

positively above the rest. Correspondingly direct investments mostly performed better than funds.

For further investment comparison the research could be repeated in the next 10-year period or results could be combined from a longer span of time. It would be interesting to find out if there is a big change in a return of some class and whether their order from highest to lowest stays the same. It would also show how well a consumer would have actually done by investing to the assets that had highest returns in this assessment.

Passive value investing had better return in this research than passive investing to the whole index and active investing through funds. It is not a surprise considering that value investing has been used for a long time for picking stocks that are generally undervalued in the market and avoiding the ones valued too highly. Nevertheless, it still would be informing to repeat the same research on a larger group for example the whole Helsinki stock market to see if the difference in returns is similar and additionally how large a difference there is when previous financial information of multiple years is used when picking the stocks could be tested. Also, when looking at a much larger span of time, in how many 10-year periods value investing has failed in providing better a return could be researched. These findings could help solidify value investing as an investment of choice.

One subject for research would be the price of gold in coming years. It has major significance in the discussion whether gold constitutes a robust investment, shelter against economic downswing or neither. Usability of gold as an investment would be reconsidered if return in the next decade is similarly high or drops reducing the long term return to the level experienced in the 20th century.

The real estate investment case had the highest return which could imply that the class is very lucrative investment and produces the highest returns against other classes. The accuracy of this could be tested by surveying actual real estate investments by consumers, along with how high actual costs are and how often risks materialize to actual investors.

5.4 Discussion

Despite the fact that in economic downturns traditional financial assets of stocks and bonds become less intriguing and invested resources might migrate to ones that are considered safer such as gold or bank deposits, traditional investments classes of stocks, bonds and funds managed to produce real returns. An economic boom market could improve stock prices even more and simultaneously if central banks end up increasing interest rates to calm down growth it would result in better returns from bonds.

When moving from stable and government guaranteed investments such as bank deposits and bonds to more complex investments it is important to have plan that is followed rigidly. Investments should either be assets that are stable and not fluctuate much in value such as bonds or commodities, or otherwise have a be well-diversified portfolio so that the possibility of a big loss is not tied in to a single asset. Funds do have best of both situations with professional risk management, although highest possible returns are probably not achievable due to high costs.

How should a consumer behave after investment has been made? Further study in to the assets or economy could be performed as much as wanted, but generally for above inflation returns a simple path can be laid out. No changes after first investment are required, since passive holding can clearly produce real returns in the long run, the economy cyclically moving between better and worse withstanding, while all fund returns suffer from the management fees. Generally investor should act calm facing bad news and concentrate on the long term return possible from holding the asset class.

In some investments short-term changes cannot be made cost-effectively, so analyzing the disturbances in the current economic situation might at the most end up being upsetting to the investor. New issues, investment instruments and different kinds of interesting opportunities get publicized all the time, but the consumer generally should just ignore and keep to the selected plan.

Developments in the economy vary continuously, but the actual threats to investors' returns such as bankruptcies and defaults are rare and the effect of one instance of that kind can be diluted by differentiating in to multiple individual subjects. However, it is typical

for the public market to react to these situations and news proactively and maybe excessively.

Doing too many trades can hinder any investor be it professional fund manager or small time consumer. This makes it one of the major threats against getting adequate return on one's equity. Realistically for a beginning investor only good reasons for deviating from passively holding the investment would be a critical need of cash money or a possibility of trading into another investment that offer substantially higher return even with excluding the extra costs.

In the medium long-term all the common invested in this study seemed to be able to offer protection against inflation, although results may vary depending on the method used. To a beginning investor the key factors are choosing the right investing time and on the basis of that a suitable investment target, try to minimize costs and avoid excessive trading.

Finally, coming back to the purpose of the thesis and the thesis question set about finding best return available to consumers in Finland, an accurate answer suiting everyone probably cannot be found. Individuals have different needs and go about investing in separate ways. On top of it returns perceived may not always give a totally accurate answer concerning what is going to have best return going forward.

Real estate was found as an answer to the question about best return. In addition suitability of different investment classes for consumers were considered, where stocks with almost as high return arose as an alternative option. Funds were also mentioned as a third possibility due to their all-around easiness, practicality and intermediate return, which maybe also puts them as best choice for consumers in general, when all things are considered.

Granting that real estate had the best return from all the investments and thus is one of the best investments for consumers, it may not most suitable for every consumer due to the long term debt commitment involved. Also it may not make sense to allot to a single piece of property when stocks can offer almost as high return and investment can always be sold and money withdrawn in few days. Nonetheless, real estate can offer highest possible investment to a consumer.

In the study the second highest return was in the stock portfolio, which would indicate it the best choice for consumers that want to manage the portfolio themselves, acquire high return and also to be able to quickly liquidate when necessary. Although stocks did the best of all the financial assets in the research, the requirements used in the research would have to be filled for this to be the case. From the example cases it could be determined that for having excessive return in passive investment in stocks they would have to be invested in directly, diversified into multiple companies, held passively with a long term commitment in mind, and use value investing in picking opportune stocks. All in all, when considering the relative easiness of stock investing to the good liquidity of the assets, of financial assets the stock class offers the best return to consumers.

For the writer thesis has brought improved abilities for collecting information regarding assets, understanding investing related texts such as prospects and financial statements, and assessing returns of different investment types based on past information. Additionally, research done on the latest results in the local market compared to findings from previous researches from other markets have given insight into what can be expected about investments in general. The perspective gained has helped in filtering information flowing from media and the whole culture that due to its short term persuasion is partly distracting in practice.

Moreover, the writer has gained knowledge about investment market and assets traded in it that surely will be of use in coming years. Personally, purpose is to invest as savings for rest of the life by starting with small amounts of few thousands and adding regularly for the next decades. In future along with investing in stocks intention is to also invest in real estate after collecting capital for few years.

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