



INVESTMENT POLICIES IN MUTUAL FUND

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Abstract- The purpose of this thesis is; "To find out whether a strategy based on accumulated stock recommendations are able to outperform mutual funds and/or index funds with similar holdings over time". During the past 30 years the interest for the financial market has been ever increasing. With the increased interest for the financial market, also an increased interest for the different investment alternatives have developed, thus also the amount of various financial products. Further there has been a discussion whether the different investment products actually add value to the investors. To be able to reach our purpose we have constructed a portfolio containing stocks based on recommendations. We have also come up with a method in order to decide the weights of the individual stocks in our portfolio. Further, we have used existing theories in order to estimate the return and the standard deviation. We have also benchmarked our portfolio against popular funds on the market. We have seen that our portfolio during the six years running have performed better than the existing funds and also resulted in a lower standard deviation i.e. risk. Thus the results are applicable on our specific data, more research is needed in order to make any statements of statistical significance.

Keywords- Investment policies, Mutual fund, efficient market hypothesis, financial market

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Introduction

The basic theory about the stock market is the efficient market hypothesis (EMH). The security market has to be efficient in order to function correctly. According to Fama (1970), an efficient market is a market where the price of the securities fully reflects all available information. There are three different stages of efficiency; weak form, semi strong and strong. According to Claesson (1987), the Swedish market is not completely efficient. That means that there exists opportunities to earn abnormal returns. If the market is semi strong, there is no meaning to invest in anything else but index funds, because it requires access to inside information to actually beat index. One of the most important assumptions about market efficiency is that investors act rational. According to financial theories, this means that people behave like they "should". However, this is not always the case. If people do not act rational, there will be opportunities to earn abnormal returns. In an efficient market, there should be impossible to outperform the market continuously. However, some investors manage to do this on a regular basis. Well-known successful investors like Warren Buffet, Peter Lynch and Anthony Bolton have all showed the ability to perform better than index over time. An example from Scandinavia is the Norwegian stock guru Kristoffer Stensrud, also called the "stock hippie". Stensrud is the owner and founder of the mutual fund company Skagen funds. Since the start in 1993 their funds have been able to beat the comparable index every year. Skagen funds have three different funds and the annual average return since the start has

been over twenty per cent for all of them. Skagen's Kon-Tiki fund is ranked as number one in its category by Standard & Poor. The strategy behind the success seems to be pretty simple. The most important thing according to Stensrud is to use common sense. The head office is located in Stavanger, far away from the financial centers, so he will avoid to be affected by what is going on there i.e. the psychological effects will not play a part in the investment decision made. More technically, Stensrud makes a distinction between price and value and therefore continuously tries to find undervalued stocks. He also likes to buy stocks that are unpopular and stocks with low P/E ratios. The desirable investment horizon is two years and the philosophy is to buy an undervalued stock, keep it for two years and then sell it when it has reached its true value. Stensrud seems to be trustworthy in what he is doing because the majority of his private wealth is invested in his own funds.

Methodology

When choosing which data one should have in the research, primary and secondary are the once we can use. Primary data often consist of the collection of data from surveys, interviews, and focus groups. Secondary data uses data already at hand in order to improve products and services. In business research, both of the data can be used but they can also differ in various aspects. Secondary data is, as the name indicates, data that uses past periods of information. Primary data is on the other hand the latest information. Primary data is often projected for the specific research that the

researcher undertakes this in order to have data that to a large extent meet the objectives. Why then, is the use of primary data more solid, does we not always use the primary approach? The collection of primary data have some disadvantages, the money factor is one of them as is the impact of time. To collect primary data is time costly and expensive, and sometimes it is just not feasible for the researcher to collect. The secondary data on the other hand is easier to collect since the data already exist in some form, the back side of secondary data is that as mentioned above that it is not objective specific. Thus, if the research takes this into consideration, the noise will be under control [9].

Validity and Reliability

One aspect that researchers are concerned with during the process of research and after the process of research is the implications of validity and reliability. The researcher may ask them self up to what extent the research will be beneficial and utilized. This can be a crucial part of the paper due to the impact it may have on other researchers and the public at large. In order to assess the validity of the research there are two main things that one should use. First we should, according to Saunders (2009) asses the relevance and precision of the work. The second thing is to get an understanding as previously mentioned, how well we can generalize the result we have gained. If we can see that these two can be accepted, the validity of the research will be on a satisfying level. Reliability is the second parameter that the researcher should take into consideration in order to gain as high credibility as possible. Saunders (2009) has three questions that will answer how credible the work is. The first the researcher asks is if the results will be consistent on all actions? The second is if the same observations could be reached by others? The third and final is whether there is transparency from the raw data collected. Those questions will be answered and if they are consistent the credibility of the report is high and thus if they are not, the credibility will be low.

Validity and Reliability of our Study

The result received through our findings show interesting indications. However can one assume that the findings are reliable and valid? Thus, would others that research the same phenomenon come up with the same answers or would they find other observations? In order to answer this we use the knowledge of these things from the methodology part and try to establish the relevance and reliability of our findings. How we compare our findings with the findings done by other on the subject. The validity can be dealt with by assessing the precision of the work. This paper is as we have mentioned based on our assumptions and specific data and thus the work is valid from those specific assumptions. The implication on reliability, as was the second parameter, can be answered by answering three questions. First, is the actions taken applicable on all actions and the answer is as we have argued no. Further we can ask how easy we could generalize the result, which we have received. Concerning our accumulated stock recommendation model, the validity can be 13 discussed. Since the model together with the weighing process is something we by ourselves have invented, we are not sure how valid the model is, looking at it from a statistical point of view. To fully answer that question further research and more statistical models of Significance are needed. Concerning our theories that we use in order to correctly analyze our raw data and also to be able to ob-

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

Theoretical Framework

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

Weak Form

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

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

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

Semi-Strong Form

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

Strong Form

The strong form of EMH implies that all information, both public and private should be reflected in the current stock price. This means that it is impossible to earn 16 abnormal return, even though you

have access to inside information. However, this form of EMH is not realistic in reality.

Foundations of Market Efficiency

Rationality

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

Independent Deviations from Rationality

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

Arbitrage

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

Method

Data Processing

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

The Construction of the Portfolio

Our portfolio will be based on the average of the ten largest holdings in each of the respective banks mutual funds, called Swedish mutual fund. Thus, all stocks in the mutual funds will not be of interest to us when putting together our portfolio. The decision was to use ten stocks in our portfolio, since further diversification is not always preferable, though the benefits from diversifying get smaller and smaller [5]. The time period we will analyze is six years with 2003 as the start and 2008 as the end year. The recommendations we look at are always retrieved from the quarter before, e.g. the investment in January 2003 will be based on the recommendations during the fourth quarter 2002. As mentioned previously, the portfolio will be rebalanced every three month. The construction of our own portfolio will to some extent be based on a ranking system.

Treatment of Transaction Costs

Transaction costs are in this case associated with the cost of buying and selling stocks. In the administration fee paid to the index and mutual funds, the trading costs are covered as well. The fee in an mutual fund is approximately 1,3-1,5 per cent. During the construction of our portfolio the issue of transaction cost was treated in the following way; we searched the web in order to find the stock broker with the lowest transaction cost. To find the 35 cheapest one was essential in order for us to get as accurate result as possible. The choice of stock broker was Aktiedirekt, which is owned by the large brokerage Nordnet. The transaction cost there is 9 SEK or 0,15 per cent of the value traded, thus for one sell and one buy the cost is at least 18 SEK. However, Aktiedirekt does not provide the service of short selling. Therefore, we had to find another stock broker that provides this service. The cheapest one providing short selling is Avanza. Their price is 199 SEK in administration fee plus 99 SEK per transaction. Therefore each transaction will cost us $199+99+99= 397$ SEK. Further, the transaction cost for a short position is to some extent more difficult because both an administration fee and a loan are involved. When taking a short position, one borrows a specific security and the value borrowed must be paid interest on. Thus, we have made the assumption that the interest rate paid is equal to zero. This is because our portfolio will always be 100 per cent regardless of long or short positions. When taking a short position, the transaction will take place in the end of the period. That implies that there is money that is not invested during almost the entire quarter. This money could then be invested to the risk free rate for three months. The interest rate for taking a short position and the interest rate when investing are almost the same. Therefore we chose to let them cancel out each other and not calculate with any interest costs at all.

Treatment of Taxes

When we buy and sell stocks every quarter we make the assumption that we also pay taxes every quarter. Therefore we have a specific tax account where we cumulate the taxes for every quarter. If the underlying quarter results in a positive return, the tax will be withdrawn from the profit during the period in order for us to not reinvest money back into the portfolio which actually belongs to the tax authority. Though if we another quarter during the same year experience a negative result we are allowed to offset that loss with the tax paid earlier during the year. In the end of the year, we check that the tax paid for the whole year is correct. The funds do not have the same problem due to the fact that one only has to pay tax when realizing the capital. However, to have comparable figures, we chose to realize the profit/loss in the end of every year. In that way we pay tax for the funds once every year and 36

Investments Performance Return

The empirical findings will display the result, i.e. the return of our portfolio and the other securities we have chosen to compare during the six-year time period. Also the result achieved from the usage and appliance of the Sharpe Ratio and Jensen's Alpha. Primarily, we will show the performance of our portfolio and how it has developed manually during the time from the beginning of 2003 to the end of year 2008. Secondly we will compare the performance of our portfolio, the mutual funds, the index fund, and the risk free rate during these years. The return is calculated after tax and the

tax shield used is 30 per cent. Due to the fact that mutual funds reinvest their returns to 100 percent while we in our portfolio have to pay taxes once a year because we are realizing securities four times a year. In order for the result to be as relevant as possible, the mutual funds and index funds are also in our example realized once a year. This is done in order to have the same tax effect on the return as our portfolio.

Analysis of our Empirical Findings

The analysis will be performed with the starting point within in the theoretical framework and its appliance on the empirical findings. Initially, the theories will be scrutinized individually. Our purpose is to find out whether a strategy based on accumulated stock recommendations are able to outperform mutual funds and/or index funds with similar holdings from 2003-2008. We previously pointed out that technology, along with possibilities, have moved forward and developed over the past years. This has made it possible to easily create your own fund-like portfolio. It has also brought the possibilities of facilitating information more easily. With these two "opportunities" at hand our belief lies in that accumulated knowledge from several stock analysts, collected from di.se, will be more worth than one stock analyst's or fund manager's single knowledge. The idea is as mentioned in the method that more valid accuracy are being received with a larger numbers of ecommendations, while few recommendations will have a larger room for errors and noise. From a statistical point of view this idea corresponds with the ideas that a large numbers on n recommendations will result in a lower standard deviation. The entire analyses during scrutinizing will have our approach as a guiding light. Thus, we will not argue that the findings will have any usage outside of our specific test, or with other assumptions other than the once made by us. So, the analysis will be conducted on our specific data during the specific timeframe and therefore also the result will become limited to the point that it will only apply to our own data.

Sharpe Ratio- Risk Adjusted Portfolio Performance

The significant differences in Sharpe ratios in total are a result of both a higher return and a lower standard deviation in our portfolio. The standard deviation in our portfolio is less than half of the others. The after tax return in our portfolio is also significantly higher than the other investment alternatives. The lower standard deviation can be assigned to the fact that the Swedish mutual funds have more than ten securities. The ten stocks we used are just the foundation of stocks in most of the funds we have used when we benchmarked 44 our own portfolio. The ten largest possessions in all the Swedish mutual funds are companies that are well established and have a more stable return and a lower relative risk. Thus, the Swedish mutual funds also have small possessions of riskier stocks with which they are trying to outperform the other competitive funds on the market. Secondly we believe that our idea of that many recommendations will result in a higher accuracy when it comes to the decision which stocks to hold have played a major part in the Sharp ratio performance. As we discussed in the theoretical framework and in the method, our approach that the more information gathered about a specific stock the higher will the possibility of success become. This is our approach, though we have in the empirical finding observed that this might well be the case as far as Sharp ratio is concerned. The biggest implication during the whole period was that our portfolio's standard deviation

was significant lower than the other alternative.

Jensen's Alpha: Generating Abnormal Returns or Not?

A positive Jensen's alpha indicates that abnormal returns have been attained. Two investments with positive alphas are Nordea and our portfolio. This means that the actual return is higher than the expected pre-calculated return, therefore Nordea and our portfolio both earned abnormal returns during this period. According to the EMH investors should not be able to earn abnormal returns when the market is strong efficient. However, we have found evidence that this is not the case, due to the performance of Nordea and our portfolio and this in fact is evidence of a not fully efficient Swedish market. This is in line with the arguments previously mentioned of Claesson's (1987) findings. One possible explanation for the generated abnormal returns by our portfolio might be the fact that stock analysts have access to other information than the public and therefore are able to provide more accurate analysis of the company than a private investor without that knowledge. More accurate information provided by the stock analysts makes the public more likely to make the right vestment decisions and therefore earn abnormal returns. Also the private investors sometimes do not have the skills to act on the specific information retrieved. Nordea's abnormal return might also be caused by the fact that the fund managers have access to better information. If fund managers have access to other information and the market is semi-strong, abnormal returns are possible to earn. If the market 45 is weak-form efficient, it is possible to earn abnormal returns by using public available inormation such as annual reports and press releases. Then it is not necessarily that the stock analysts and the fund managers have access to insider information to earn abnormal returns. Another explanation is that as long as the deviations from the expected return are somewhat random, the possibility of a semi-strong efficient market is still feasible. To explain this we can say that three investments perform better than the expected return while three investments underperforms, which in turn leads to that the actual market return equals market expected return. the market, one of them significantly. Four of the investments performed worse than the expected. Therefore it is hard to draw any conclusions about the efficiency of the market. The market does not seem to be completely efficient, but not totally inefficient either. The interpretation of the alpha measure is that when there are positive numbers, the funds have been successful in generating value to their investors. Another explanation for that is that the fund managers have been successful in their management. If the alpha value is positive, the fund manager actually adds value to the fund and its investors. Over the entire period from 2003-2008, just two investments have been able to provide positive Jensen's alpha. The only actively managed mutual fund that was able to beat the index fund over time, when the return was adjusted for the administration fees was Nordea's mutual fund. This is in line with Govan's (2009) findings about actively managed funds. In the Nordea case, the fund managers have been able to actually add value to their investors. Some possible reason for the other negative alphas may be the high administration fees which lower the return. This means that the fund managers job and abilities are not worth the additional cost you have to pay for the management of the fund. The fund managers have failed to find undervalued stocks that generate abnormal returns. The additional cost is only justified in the Nordea case. All other funds have a too low actual return compared to the

expected. Even, though the Swedbank fund does not have a positive alpha, it still performs better than the index fund.

Conclusion

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

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