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Performance assessment of enhanced equity mutual funds by Nordea Funds Ltd. during the COVID-19 pandemic

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I declare that I have compiled the paper independently
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ABSTRACT

There has been a considerable increase in the amount of money invested in mutual funds in Finland over the past decade. This and the new trend of low cost ETF's has made mutual fund companies to think of new ways to manage funds. Nordea has developed their own style of smart beta fund management, which is called beta plus. The idea is to blend the benefits of both active and passive fund management. This paper looks at the performance and activity of these beta plus strategies and compares them to their benchmark indices and a competitors passive index funds. Since we are living in the middle of a pandemic, this paper also looks at the past performance and activity of these funds and compares them to previous years to gain understanding of what kind of effects has COVID-19 had on these funds. We find evidence of active management and better risk-adjusted returns for Nordea's enhanced funds. The returns on the funds are diminished by the pandemic when compared to previous years. Nordea's enhanced funds were able to get additional gains against their rival funds but had overall worse returns than their benchmark indices.

Keywords: Equity mutual fund, Smart Beta, Performance, Pandemic

INTRODUCTION

The amount of money being invested in equity mutual funds in Finland has increased in the last 10 years by over 100% from 61 billion euros to almost 131 billion euros (Bank of Finland, 2021). This shows that these equity mutual funds have an increasing responsibility in the wealth accumulation of Finnish investors. The increase in the amount of money funneled into the funds has also impacted the variety of funds offered to investors (Bank of Finland, 2021). The increase in the number of mutual funds means that the consumers will have more options to choose from and the competition between financial intermediaries has grown.

At the end of year 2019 scientists found a virus in Wuhan, China that quickly spread around the world and was announced as a global pandemic in the March of 2020. This caused equities to plummet and volatility to rise high around the world. Few reasons for this are forced business closures, other restrictions on commercial activity, and voluntary social distancing, including the powerful effects of these policies and behaviors in a service-oriented economy. (Baker, et al. 2020) After the initial plummet, the securities prices have taken a sharp turn upwards and risen above the levels before Covid-19 crisis started.

The author is working as an investment specialist for Nordea Bank, specializing in savings and investment products and offering these products to our customers. He has personal experience with Nordea Funds Ltd's funds because a substantial part of the job description is to give out financial advice in the form of mutual equity funds to entry-level customers and to customers that have existing investments at Nordea Bank and this way to get an investment portfolio to the customer that reflects Nordea's assesment of a well diversified portfolio in order to lower the risks assosiated in investing. His personal experience reflects that even though most Finns are affluent, their knowledge of investing is still on a relatively low level and Finns tend to go for the product that is cheap. The recent emergenace of low cost index funds and ETF's (Exchange Traded Fund) has made a lot of people understand the impact costs have on funds returns. Nordea has seen the need for new types of funds while still trying to beat their benchmark indices to keep up with

competitors. These funds are called enhanced funds that use Nordea's own investment strategy called Beta plus. The aim of these funds is to largely follow their benchmark indices while still giving the fund managers freedom to exclude companies that stock prices are too high in their own view, quality of the stock doesn't meat Nordea's standards or companies that cash flows are believed to diminish.

The study aims to find out how five Nordea Funds Ltd. Enhanced equity mutual funds have faired in the pandemic time against their benchmark indices, similar mutual funds from competitors and how has the pandemic year affected these funds returns and overall performace from the beginning of 2020 until April 2021. The funds will be compared after the costs of the funds have been deducted from the return figures. The funds chosen are Nordea Global Enhanced, Global Enhanced Small Cap, European Enhanced, North American Enhanced and Emerging Markets Enhanced. These funds were chosen to give us an insight on Nordea's funds management performance around the globe and from different size companies. In order to research the performance of these funds from different angles, the following three research questions were formulated:

1. Have enhanced equity funds managed by Nordea funds ltd. been able to produce better profits after costs than their benchmark indices?
2. How are enhanced funds managed by Nordea funds Ltd. comparing against competitors funds?
3. How has the pandemic affected these funds performance?

This thesis is divided into three segments. The first chapter of this study, theoretical overview, is to give an overview on the subject and discuss the most crucial literature regarding this topic. This chapter is divided into four subtopics discussing history of mutual funds, fund management, market efficiency and modern portfolio thory. The following chapter introduces us the methodology and data that has been used in this study in detail. Third and last chapter covers the analysis and results of the study. Finally in this stage we will sum up the study with conclusions and discussion on the subject.

1. Theoretical Overview

In this chapter we look at the most substantial theoretical background and literature regarding the studied subject. The chapter begins with an overview of funds and their history. The next subchapter will be in regards to fund management and the most common ways of managing funds which are active and passive fund management. The chapter finishes with an introduction to efficient market hypothesis and modern portfolio thory.

1.1. About Mutual Funds

Mutual funds have been existing for over 200 years. The first records of a mutual fund have been found in 1774 in Holland. Since then mutual fund market has grown to 23 trillion dollars worldwide and 11.8 trillion dollars in the United States of America. Funds themselves differ from one another by the types of securities they hold, the services they hold and what type of fees they charge. Data, transparency and analysis become major factors when choosing a fund. (Elton and Gruber, 2011)

Mutual funds can be divided into four main types: 1. Equity funds, which invest mostly or solely on stocks, 2. Money market funds that buy securities mostly in the form of short term bonds and currency. 3. Fixed income funds which may contain all sorts of debt securities and lastly 4. Hybrid funds that mix different securities. Other types of funds are hedge funds that try to gain by using derivetatives, alternative funds that invest in real estates, cryptocurrencies, and other assets. Funds can also invest in other funds which are called funds of funds. Closed-end mutual funds are funds that can be traded at any time during the trading hours of a particular exhange and their price vary continously during the tradeing day whereas an open-end mutual funds price is calculated at the end of each trading day even though the fund can be bought any time of the day. ETS's are a good example of close-end funds. (Sijoitusrahasto-opas, 2015; Eltom and Gruber, 2011)

Mutual funds can also divided into growth and income funds. Growth funds also known as accumative funds, re-invest the dividence paid out by companies back into the fund. This means that the funds market value isn't only determined by the apprcetiation of the held securities but also the dividends paid out by the equities. Income funds also known as distributing funds on the other hand pay out the dividence they get from the held securities in cash back to the investors.

The distributing of the cash is paid out in proportion to the number of fund units owned. This allows the investor to gain passive income from the funds held. (Sijoitusrahasto-opas, 2015; Barclays, 2020)

1.2 Fund Management

The two classical styles of mutual fund management are active and passive fund management. These two management styles differ mainly in their relation to benchmark indices. Actively managed funds have fund managers and/or management teams that make investment decisions on how to invest the funds cash while trying to beat their benchmark indices. Positive side of actively managed funds is that they have the opportunity to beat their benchmark indices (The Balance, 2020). According to Sharpe (1991) this unfortunately doesn't happen that often and benhmark indices tend to beat their actively managed counterparts. This is one of the negative sides of actively managed mutual funds. Actively managed funds also have fixed management fees that are usually a certain percentage of the funds annual value. This fee directly affects the funds performance in the same percentage amount, and this fee is why investors expect a greater return from actively managed mutual funds (Goetzmann, et al. 2014). Two main ways an actively managed fund can differ from benchmark are stock selection and factor timing (or both). Factor timing means varying bets on systematic risk factors, such as entire industries, sectors of economy or more overall any systematic risk invovlved to the benchmark index. Mutual funds that tend to make more individual stock pickings are more likely to beat their benchmark indices (Cremers & Petajisto, 2009).

Passive management also known as indexing, begins with studying and replicating the benchmark index as closely as possible. This is appealing for many investors due to the usually lower management fees and higher diversification than actively managed funds (Rudd, 1980). This might not be as simple as it sounds. According to Frino and Gallagher (2001) there are several challenges in following the benchmark index. The biggest one are transaction costs that accure when the underlying index changes it's composition. Index itself is calculated as "paper" portfolio with the possibilityof unlimited transactions without costs. The fund managers have to follow this change while trying to keep their transaction costs as low as possible. Furthermore the passively managed

funds have these transaction costs, this ensures tracking error between benchmark indices and passively managed funds.

Smart Beta, also known as an alternative equity index strategy is a mix of active and passive fund management. The goal of these types of funds is to largely follow their benchmark indices but still make active moves that would gain an edge over the underlying index. There are different strategies when constructing a smart beta portfolio, but the usual way is to analyse firm fundamentals or risk-return parameters to try and find additional information in order to beat the benchmark index (Amenc, et al. 2012). On the basis of previous research, these funds performances are directly related to a variety of weighting strategies, which produces outperformance by tilting toward value and size factors. (Chow, et al. 2011) These diversifying strategies are shown to have more importance to the funds performance than a pure stock picking strategy (Amenc, et al. 2012).

1.3. Modern portfolio theory

Modern portfolio theory (MPT) by (Markowitz, 1952) is seen as one of the most important literatures regarding portfolio management. This theory suggests that an investors should focus more on the portfolio as a whole, rather than looking at individual securities and their profits and risk figures. This theory takes into consideration the covarience among securities in similar industries, which means that stocks in similar industries are more likely to perform in the same direction, thus portfolios should be diversified among sectors. Efficient frontier is an essential concept of MPT, that consists of porfolios that offer the highest level of return for any given level of risk. This means that an investor can either specify the level of risk (Standard deviation) they are willing to take or define the return expectations and choose an according porfolio from the efficient frontier that is suited for their needs. Efficient frontier has two endpoints, which are the minimum variance (lower risk) and maximum return (higher risk). The best risk-adjusted return (Sharpe figure) in efficient frontier is gotten from Tangency portfolio, which is the portfolio most profit-seeking investors should pick. (Markowitz, 1952)

Modern portfolio theory, which is often referred as mean-variance analysis has had it's biggest impact in investment and portfolio management. It is a normative theory that describes a standard that investors should pursue when constructing a portfolio. This is crucial when compiling a fund that holds a variety of different equities or other securities. One of the theoretical methods to build a portfolio by using this theory is being developed by institutional investors together with asset managers and the idea is to allocate the risks across active managers. The key is the implicit relationship between active managers and the deviations from their portfolios. This way investors could maximise their profits for the level of risk taken. (Fabozzi, et al. 2002) This is one of the many models derived from modern portfolio theory which are trying gain maximal profits in regards to the risk.

Does modern portfolio theory work in financial crisis as well? Since the COVID-19 pandemic is a financial crisis. Financial crisis is a period where there is a large downward movement in the market. All asset classes are going up and correlations are going up. It sometimes said that because of this modern portfolio theory fails in financial crises. This means that during these types of times systematic risk swamps the unsystematic risk of the portfolios. Accoding to (Markowitz, et al. 2009) these are the times why the modern portfolio theory should be used. Future will always be uncertain and investors should make their own estimations about the future and choose an appropriate point from the implied risk-return trade-off curve.

1.4. Efficient market theory

Efficient capital markets are a fundamental, but still very controversial subject in the field of financial research. According to (Fama, 1965, p. 56) efficient market is defined as a market where there are large numbers of logical people trying to maximize profit by constantly competing, with everyone trying to foresee future market values of individual securities, and where important current information regarding the securities is almost freely available to all participants. In an efficient market, competition among the many intelligent participants leads to a situation where, at any point in time, actual prices of individual securities already reflect the effects of information-based both on events that have already occurred and on events which, as of now, the market expects

to take place in the future. In other words, in an efficient market at any point in time, the actual price of a security will be a good estimate of its underlying value.

Efficient market theory includes simplifications and assumptions. First one being that markets allocate capital efficiently, which means that the sectors that have a better return on capital relative to the industry will get more funding than sectors with lower return on capital. Secondly, operational efficiency guarantees that transactions are carried out efficiently (minimal to no costs). Thirdly, information flows efficiently, and all available information is reflected immediately on the market prices. There are three forms of market efficiency: weak, semi-strong and strong. The type of the market is reliant on the data, which the stock prices indicate. The weak form is that stock prices contain all information about the historical market trading data, such as stock prices, trading volumes, etc. The semi-strong form utilizes that in addition to the historical data, the stock prices also reflect all public information – quarterly company reports, stock forecasts by analysts among with economic data. In semi-strong form the investor cannot gain excess returns by conducting fundamental analysis, because all of the information is already related on the price of the stock. The strong form suggests that along with historical data, and public information, the stock prices also reflect insider information (Fama, 1970).

If this theory would be completely true, then active portfolio management should not be able to create any additional gains. Therefore, the smartest strategy would be to minimize costs and the best way to do this would be to invest in a market portfolio (passive index fund) or simply selecting random stocks because all the information is already reflected, and no stock is undervalued and thus could not create excess returns. Nonetheless in an inefficient market there would be a chance for active fund managers since all the information is not reflected on the prices and therefore an advantage could be created.

2. Methodology and data

In this chapter we take a look at the primary methodology used in this study. Firstly, the two main performance measures of funds are described, then we overview some methods of tracking fund activity since this important in finding out the differences between our sample funds and passive index funds. Lastly we will dive into the data that thas been used in this study.

2.1. Performance measures of funds

One of the simplest ways to measure mutual fund performance is through the growth of the value of its NAV (Net Asset Value) over a certain period. The return figures used in this study are gathered directly from Nordea Funds Ltd and their competitors. The return numbers were received with the ongoing charges already deducted. To simplify which returns are discussed they are marked as Fund returns%, BM returns% (Benchmark returns), C returns% (competitor returns). The fund returns% measures the absolute returns of the fund after the ongoing charges are deducted and this will be measured against BM returns% and C returns% to gain the difference between them. These figures can be called BMAR% (Benchmark-Adjusted Returns) and CAR% (Competitor-Adjusted Returns). The funds used in this study are growth funds that invest their dividends back into the fund itself. The returns are based on arithmetic average rate of return which are gained from Nordea's Funds now and OP Banks monthly reports. (2021)

$$BMAR\% = Fund\ Returns\% - BM\ returns\% \quad (1)$$

$$\text{CAR\%} = \text{Fund Returns\% - C Returns\%} \quad (2)$$

The Sharpe-ratio was developed in 1966 by William F. Sharpe and it is used to understand the return of an investment compared to its risk. This figure describes the amount of return a shareholder receives additionally for a unit of increased risk. Therefore, the higher the Sharpe-ratio, the better the portfolio. The risk is measured by the fluctuation of the asset/portfolio price commonly known as volatility or standard deviation. This risk includes both systematic and non-systematic risks (market risk and company-specific risk), (Sharpe, 1994). In this study when we

are talking about an adjusted Sharpe-ratio the author means the difference between studied funds and its counterpart.

$$\mathbf{S} = \frac{\mathbf{R_P - R_F}}{\boldsymbol{\sigma}\mathbf{p}} \ , \qquad (3)$$

Where,

S = Sharpe-ratio of the portfolio

Rp = Return of the portfolio

Rf = Risk free return

$\boldsymbol{\sigma}$p = Standard deviation of the portfolio return

2.2 Activity measures of funds

Tracking error is one of the most used tools when comparing mutual funds with their benchmark indices. Tracking error is defined as the difference between portfolio returns and the benchmark portfolio returns. Evaluating past tracking error of a portfolio manager may give us an insight on the benchmark risk control and thus give us a chance to predict future behavior. Tracking error is calculated by taking the standard deviation between the portfolio and its benchmark performance in a certain time (Cremers & Petäjistö, 2009)

$$\text{T}racking\ error = Stdev(Rfund,t - Rindex,t), \qquad (4)$$

In the formula above the fund returns are marked with (Rfund,t) and its benchamark index with (Rindex,t). The higher the tracking error the more the mutual fund's returns have deviated from the benchmark indexes returns. Active fund managers will want to keep their tracking error relatively low to lower the risk of significantly underperfoming against the index, while still trying to gain additional profits. If a porfolio has a high tracking error, this will implicate a higher level of risk taken by the portfolio manager.

Active share is a measure of active portfolio management, it describes the share of portfolio holdings that differ from the benchmark index holdings created by Cremers & Petäjistö in 2009. Active portfolio managers can beat their benchmark index only by deviating from it and the usual ways were by stock picking and factor timing. Active share compares the mutual fund holdings to benchmark index holdings by different weighs they possess and how overlapping the investments are. Mutual fund with a high active share implies that the fund manager is changing the composition from the benchmark index and is trying to outperform it. If a mutual fund holds an overweight of a stock compared to its benchmark index, this is called a long position and vice versa, if a certain investment is underweighted or completely missing in a mutual fund portfolio compared to the benchmark index, this is called a short position. The range of active share is always between zero and 100 percent. Active shares weakness is that it does not look at systematic factors and weighs all investments equally regardless of whether the risk is diversified away in a portfolio. When active share is used together with tracking error it gives a more comprehensive picture of the fund management, giving us the opportunity to separate stock selection and factor timing (Cremers & Petäjistö , 2009)

$$\mathbf{AS} = \mathbf{0,5} \sum_{i=1}^{N} \left| w_{fund,i} - w_{index,i} \right| , \quad (5)$$

Where Wfund,i and Windex,i are the portfolio weights of asset i in the fund and in the in the index, and the sum is taken over the universe of all assets.

2.3 Other measures

2.3.1 Arithmetic mean

The arithmetic mean is better known as an average of something. The averages in this thesis were computed by Microsoft Excel's function =average. The standard formula of arithmetic mean is calculated as: a = s/n, where s = sum of the numbers in the set of interests (for example, the sum of fund returns over a set period) and n = number of terms (for example, number of years.)

2.4 Fund data

The funds compared in this study are offered by Nordea funds Ltd and must be semi-actively managed. Meaning that the funds by Nordea are managed by smart beta strategies. All of the return figures gathered have had their expenses removed. These funds performance is compared with their benchmark indices and with a Finnish competitor. Since smart beta funds are a relatively new investment style in the Finnish markets there were no mutual funds with similar strategies. The comparison will be made with four of OP Banks index funds that have a similar cost structure to Nordea's enhanced funds. The equity funds chosen in table 1, are all growth funds that invest dividends back into the fund itself. With the selection of these funds the author wants to get an idea of the performance of Nordea's fund management with smart beta strategies from all over the world. These funds returns are evaluated in the year of 2020, starting from 1st of January, and ending in 31st of December. Sharpe ratio and Tracking error only have data that goes back 12 months, so the author decided to use this data from the sources. This data is after the market crash of March 2020 and consists a period from 13 April 2020 to 13 April 2021. The funds managed by Nordea Funds Ltd are also compared to their previous years of being active to get an understanding of COVID-19 implications on the fund's performance.

Table 1. The studied funds, benchmark indices and rival funds.

Fund	Benchmark index	Competitor funds (OP Bank)
Emerging Markets Enhanced	MSCI EM NR USD	OP Asia Index
Europe Enhanced	MSCI Europe TR	OP Europe Index
Global Enhanced	MSCI World NR USD	OP World Index
Global Enhanced Small Cap	MSCI World Small Cap NR USD	
North American Enhanced	MSCI North America NR EUR	OP America Index

Source: Composed by the author based on data from Nordea Funds Now, 2021 and from OP Investment funds, 2021.

Regarding the Sharpe-ratio used in this study, there were no available data on Nordeas fund reports for the Sharpe-ratio of the benchmark indices. So the author decided to calculate the Sharpe ratios for the given time period. As a risk free rate, the Treasury Yield 10 Years (^TNX) montly rates averaged for a yearly rate for the period of 13 April 2020 to 13 April 2021 downloaded from Yahoo Finance was used, this rate was 0,98%. Volatility and yearly returns for this time period was gained from Nordea's fund reports. This is to have compareble results as the Sharpe ratio from the Nordea's own reports alone will not tell us a lot. Nordea's own Sharpe ratios are used when looking comparing them before and after the global pandemic started.

Tracking error data was gained from Nordea's fund reports for a period of 13.4.2020-13.4.2021. OP Banks fund data had active risk which is another name for tracking error imbedded in them for the same time period as the Nordea's enhanced funds.

Active share was only calculated for two of Nordea's enhanced funds for a time period of 1.1.2020-31.6.2020 and this was found from Nordea's half year report (2020). The reason for this is the fact that only Global Enhanced and North American enhanced funds are registered in Finland. There

are no key metrics calculated in the yearly reports that come from funds that Nordea has registered in Luxembourg. All of the other data is collected from the Fund reports (2021).

Most of the data used in this study is collected directly online from Nordea's Fund reports and from OP Banks fund reports. The historical data on the Nordea's fund varies on the basis when that mutual fund was founded. Since most of the data is provided by Nordea Funds Ltd. And OP Bank fund management, instead of fully independent sources, there is a possibility of the results being biased.

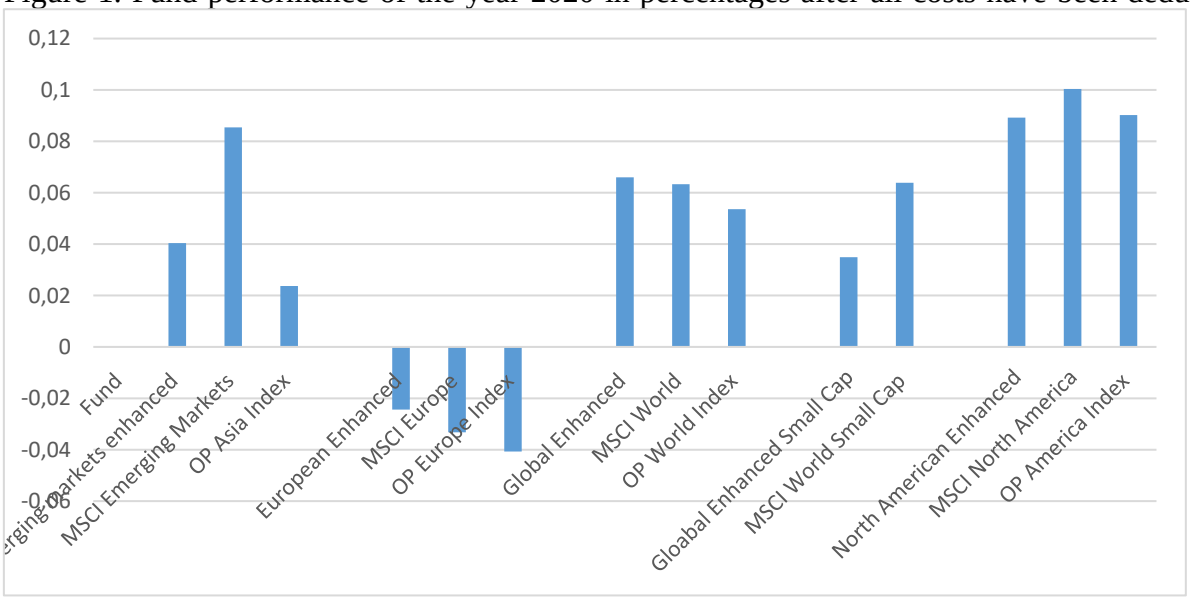
3. Empirical results

In this chapter we will look at the empirical results gathered from the data of Nordea Funds Ltd. and OP Bank fund management to get an overview on the funds performance in the pandemic time. This part of the study is purely statistical explaining the figures and tables the author has created from the source material. The results will be shown against their benchmark index and a competitors fund. Finally to gain some understanding on the COVID-19 implications on the funds performance we will be also assessing Nordea's funds against their past performance.

3.1 Performance measures of funds

As said before the returns of these funds were gained directly from Nordea Fund Ltd. and OP Fund management with the expenses already deducted. In figure 1, we can see that from all of the funds studied the best returns were gained by the mutual funds that had allocated their equities to North America and the absolute best gain was produced by MSCI World benchmark index with a return of 10,04%. Nordea's North American Enhanced fund was able to produce a return of 8,92%. The only mutual funds that had a negative performance were by funds that allocated their assets in Europe. The smallest loss was from European Enhanced -2,44% and the largest loss of -4,07% was received by OP Banks Europe Index. When looking at the global funds performance, the best fund was Nordea's global enhanced fund with 6,60% and out of three global funds, OP Banks World Index had the worst returns of 5,36%.

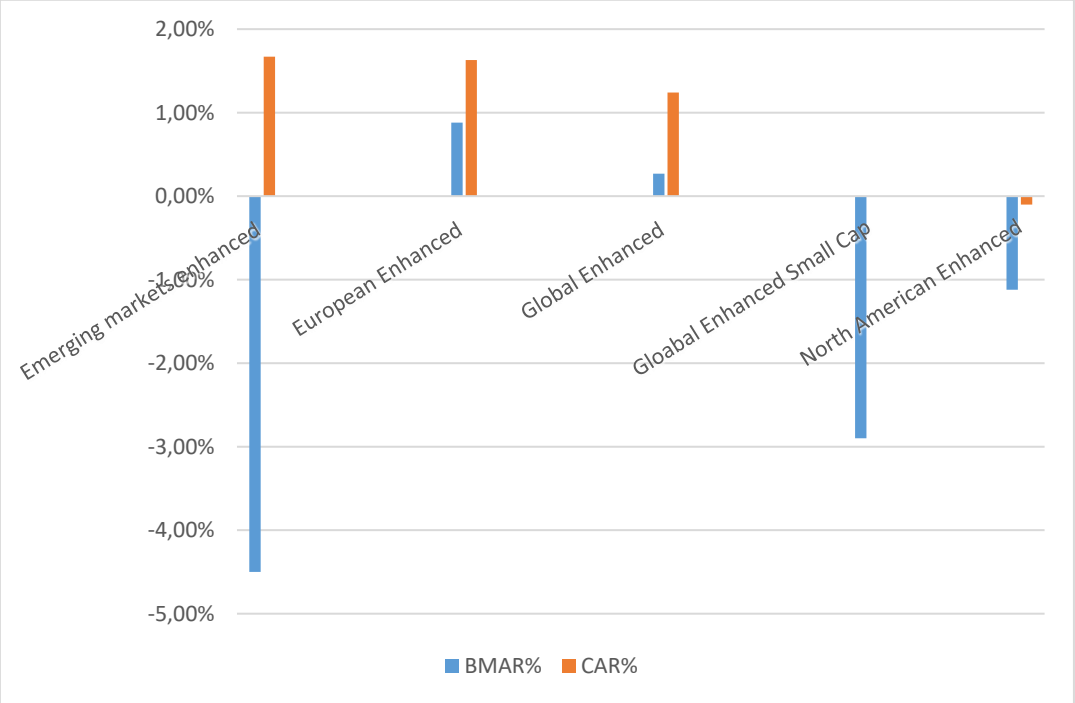
Figure 1. Fund performance of the year 2020 in percentages after all costs have been deducted.



Composed by the author from Nordea's and OP Banks fund reports (2020).

When compering statistics from figure 2, Nordeas enhanced funds by BMAC% and CAR% the biggest differences were found in the emerging markets that mainly focus their equitites in Asia. The Emerging markers enhanced fund underperformed the benchmark index by -4,50% while still being able to beat the competitors passive index fund by 1,67%. The two enhanced funds that were able to outperform their benchmark indices were European enhanced by 0,88% and Global enhanced by 0,27%, these funds also beat their rival funds with European enhanced beating OP Banks European Index with 1,63% anf global enhanced beating the OP Banks World Index by 1,24%. The only enhanced fund that underperformed against its competitor was the North American enhanced fund by -0,10%.

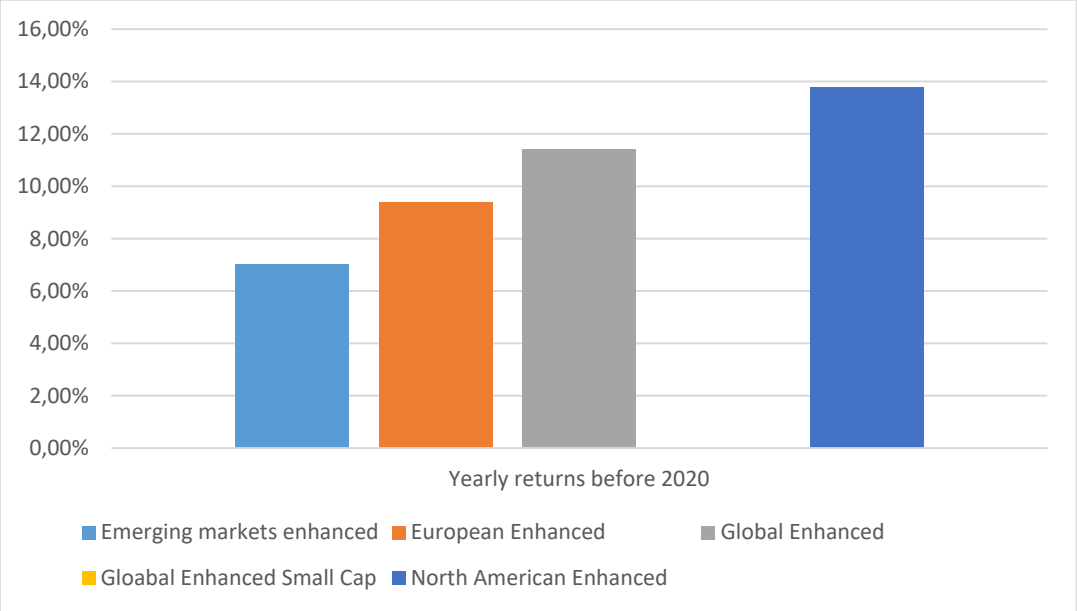
Figure 2. Benhmark and competitor adjusted returns in 2020.



Composed by the author from Nordea's and OP Banks fund reports (2020).

In figure 3, the global enhanced small cap was not included due to the fact that this fund didn't have a fully active prvious year before 2020 to compare it to. We can see that in the previous years/year of being active the best returns were gained from North American Enhanced 13,77% and the worst previous performance came from the Emerging Markets fund 7%. Global enhanced fund had a previous yearly return of 11,39% with a difference of -4,79% to the pandemic year. European enhanced had yearly returns of 9,37% before 2020 with a difference of -11,81% when looking at the pandemic year. The results were gained by using arithmetic mean from the starting day of the fund to 31 Decemeber 2019.

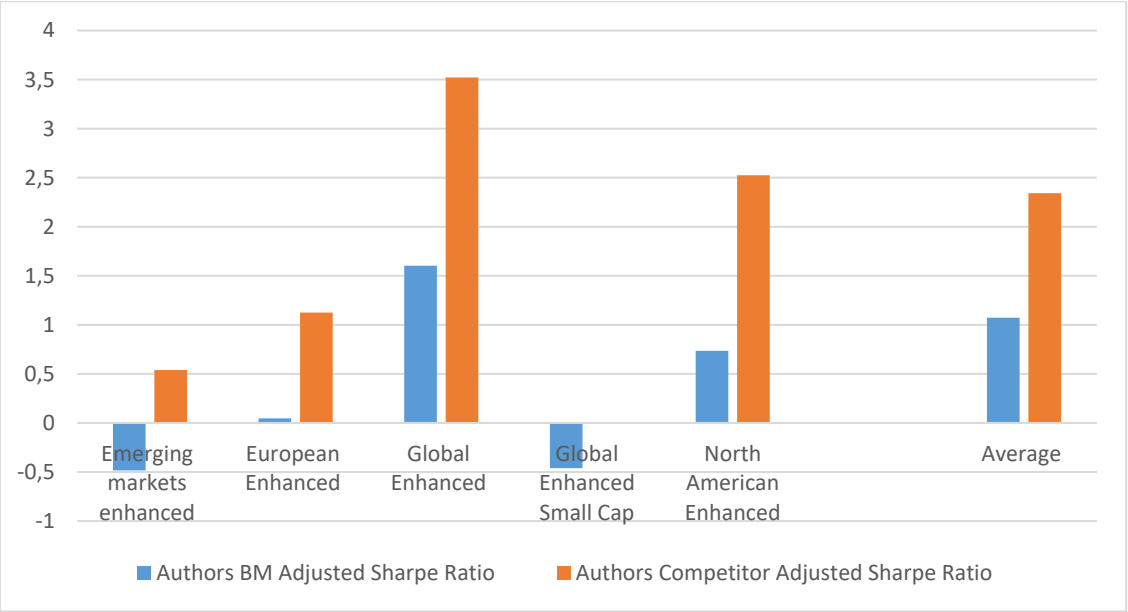
Figure 3. Yearly returns of Nordea's enhanced funds until 2020.



Composed by the author on data from Nordea Fund Ltd. Fund reports (2020)

The Sharpe ratio was calculated by the author using the available information from Nordea Funds Ltd. fund reports (2021), OP Banks Fund reports (2021) and from Yahoo Finance (2021). The adjusted Sharpe-ratio in figure 4, shows that Nordea has outperformed its competitors mutual funds when assessing risk and return. The best performing fund was Global Enhanced that had a benchmark adjusted ratio of 1,60 and a competitor adjusted return of 3,52. The worst performing mutual fund regarding its risk was Global Enhanced Small Cap by -0,46. The average adjusted Sharpe index against the benchmark was 1,07 and in comparison, to OP Banks mutual funds the average is 2,34. Emerging markets enhanced fund had a -0,48 benchmark adjusted Sharpe ratio and 0,53 competitor adjusted figure. European enhanced had a positive benchmark adjusted Sharpe figure of 0,05 as for the competitor adjusted ratio was 1,12. North American enhanced fund had a benchmark adjusted Sharpe ratio of 0,73 and a competitor adjusted ratio of 2,34.

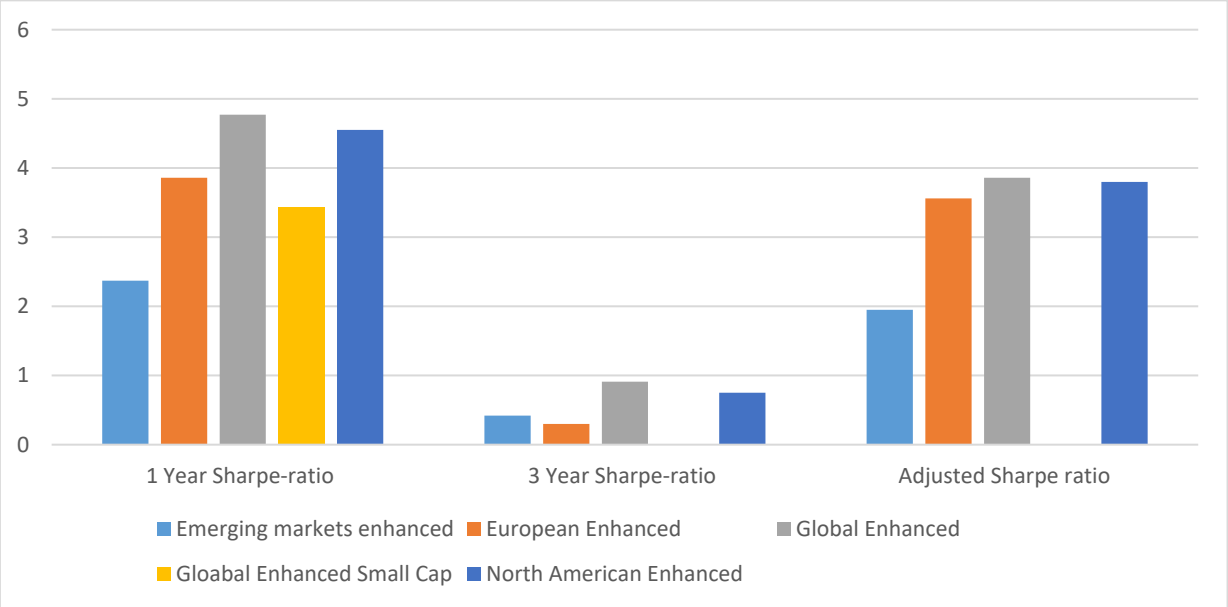
Figure 4. Adjusted Sharpe-ratios.



Created by the author based on data from Nordea Funds Ltd. fund reports (2021), OP Banks Fund monthly reports (2021) and Yahoo Finance (2021)

The one-year Sharpe index from figure 5. of Nordea's enhanced funds outperformed the three-year ratio in every fund, excluding Enhanced Small cap since this fund was founded in the summer of 2019. Highest one-year Sharpe figure was from Global enhanced with 4,77. The best adjusted ratio was also from Global Enhanced with a figure of 3,86. The worst risk adjusted figures were from Emerging Markets enhanced with a ratio of 1,95. North American Enhanced came second when assessing risk-adjusted returns from a year period of 4,55 and with a deducted three-year ratio of 3,8. European enhanced had a one-year Sharpe ratio of 3,86 and an adjusted ratio of 3,56.

Figure 5. Nordea's Sharpe ratios 1-year and 3-year sharpe ratios.

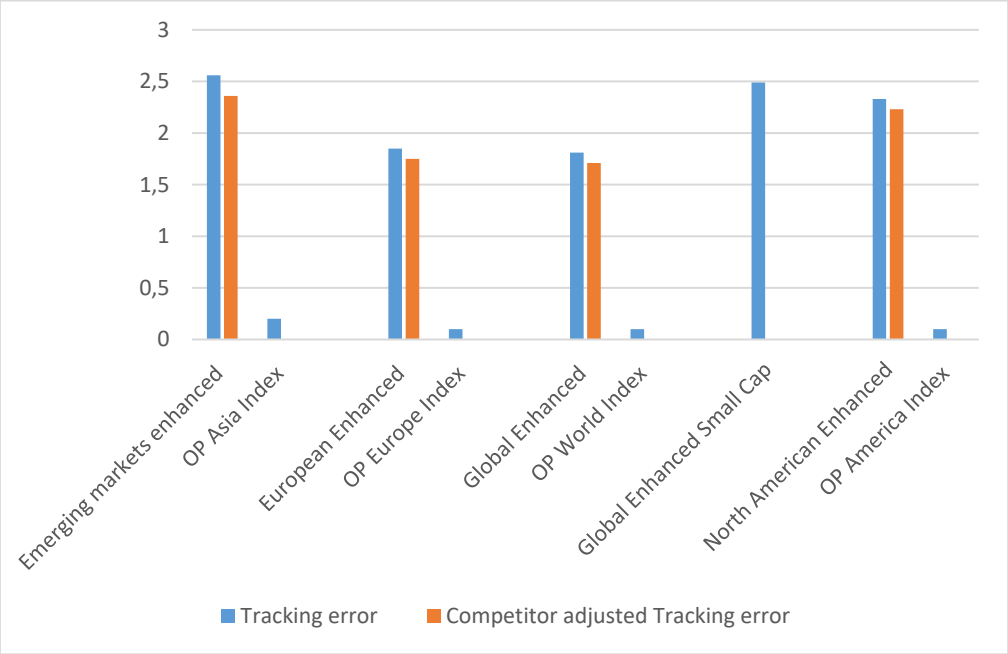


Composed by the author from Nordea's Fund reports (2021).

3.2 Activity measures of funds

During the studied period, the tracking error of Nordeas individual funds ranged from 1,81 to 2,56, which is not a notable difference in activity of these funds. As excpected the OP Banks tracking error ranged from 0,1 to 0,2 which is what you would assume from a fund that is trying to imititate its index. Competitor adjusted tracking error was largest with the Emerging markets fund with a figure of 2,36. Least active fund when put up against the competitors fund was Global Enhanced with 1,71. European emhanced fund had a tracking error figure of 1,85 and ancompetitor adjusted tracking error of 1,75. Global enhanced small cap had the second highest tracking error of 2,49 and lastly North American enhanced fund had this figure as 2,33.

Figure 6. Tracking error for the time period of 13.4.2020-13.4.2021.



Composed by the author from Nordea's Fund reports (2021) and OP Banks monthly reports (2021)

When looking at figure 7. we can see that only the Emerging Markets fund has a positive tracking error when substracting the three-year tracking error from the one-year tracking error, which led to an adjusted figure of 0,49. All of the other funds hadn't been as active in the last 12 months as they were with in a three year period. The fund that had the biggest difference in tracking error was European Enhanced by -1,63. Global Enhanced small cap was the second most active in the studied group with in the last 12 months with a tracking error of 2,49. On average the one-year

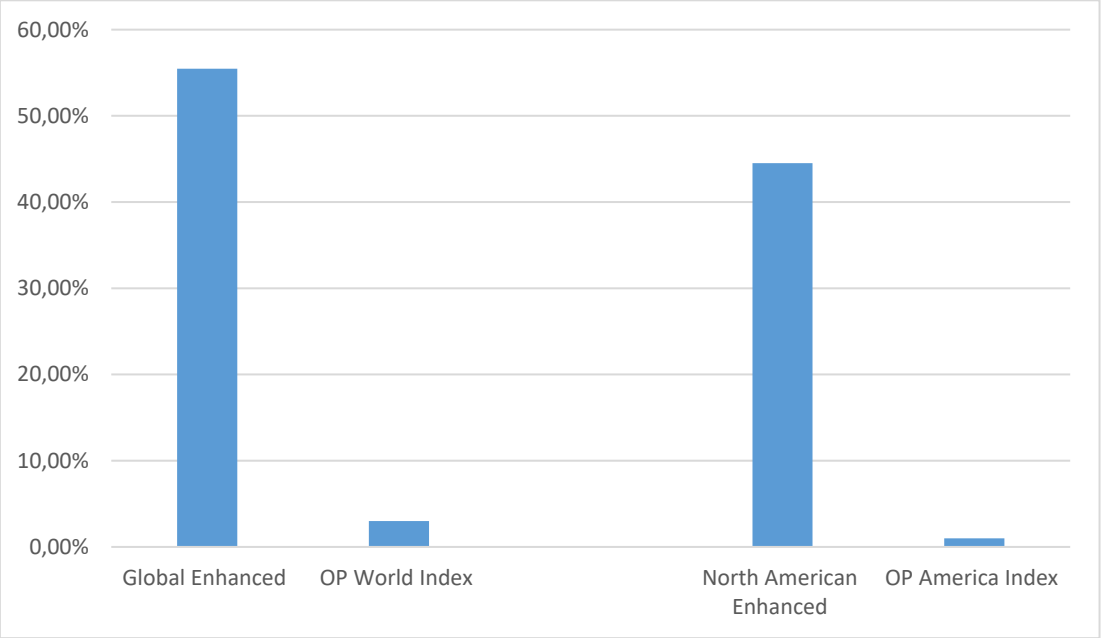
tracking error was 2,20 for all of the Enhanced funds and the three-year Tracking error was 2,75 with a difference of -0,54.

Figure 7. Nordea's 1-year tracking error compared to a three-year tracking error.

Composed by the author from Nordea's fund reports (2021).

As stated in the fund data, there was only data for two of the Nordea's funds in regarding active share figures. This data still shows that both of the enhanced funds are trying to seperate themselves from the benchmark indices, while the OP Banks Index funds are trying to keep the active share as low as possible. Global enhanced had an active share meaasure of 55,46% and the North American Enhanced fund had an active share of 44,52%. OP World Index had an active share of 3% and OP America Index had this figure down to 1%.

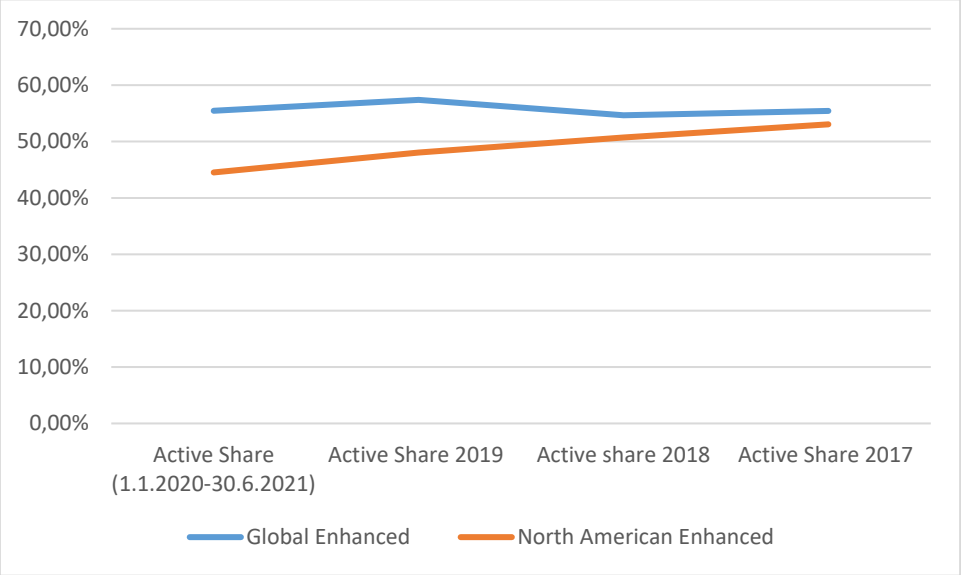
Figure 8. Active share on two of Nordea's enhanced funds and OP Banks Index funds.



Composed by the author from Nordea Funds Ltd. Half year report (2020) and from OP Banks montly reports. (2021)

The historical active share of these two enhanced funds has stayed relatively same for the past three years as can be seen from figure 8. Altough the American Enhanced fund has decreased it's active share every year. It started in 2017 from 53,05% and in 30.6.2020 the active share figure had dropped down to 44,52%. The Global Enhanced fund had it's highest active share in 2019 when it was 57,39% and it's lowest in 2018 when it was measured to be 54,66%. Active share figures for Global enhanced have stayed steady through out it's existence but North American enhanced has dropped it's active share figure through the years.

Figure 8. Historical Active share for two of Nordea's Enhanced funds.



Composed by the author from Nordea Fund Ltd. Yearly reports (2017-2019) And Nordea Funds Ltd. half year report. (2020)

3.3 Discussion

This first and second research questions were to find out how have Nordea Funds Ltd. Enhanced funds compared against their benchmark indices and a competitors fund which in this instance was OP Banks Index funds. In terms of pure returns for the year 2020, two out of the five enhanced funds were able to beat their benchmark indices. The average BMAC% was -1,47% which means that overall the benhmark indices were able to outperform Nordea's enhanced funds and these reults follow the efficient market theory. Against OP Banks funds the sample had an average CAR% of 1,11%, thus outperforming OP Banks Index funds after expences. Out of all the funds only those which allocated their equities in Europe had a negative performance for the year where OP Banks Europe Index had the worst performance of -4,07%. Overall the Nordea's enhanced funds lost to their benchmark indices but were still able to outperform the competitors index funds.

The third research question aimed to look at differences between the funds performance and management in the pandemic time. When comparing Nordea Funds Ltd enhanced funds against their previous performance, there was an obvious gap between the returns. All of the funds underperformed in the year of 2020 when compared to their previous years of being active. The Emerging Markets fund was the closest to its past performance while underperforming by -2,96%. European enhanced lost the comparison by -11,81% which is a significant drop in yearly earnings. When looking at the returns from the past 12-months, there is a significant change since this data doesn't include the stock market crash that happened in March of 2020. Since April of 2020 the best returns have came from Global Enhanced Small Cap with a return of 54,43% and the smallest returns are from European Enhanced with 33,16%. With in these past 12 months the only enhanced fund that was able to beat their benchmark inde was European Enhanced by 0,51%.

Risk-adjusted returns were measured by the Sharpe-ratio that the author calculated. In this instance three out of the five Nordea's mutual funds were able to outperform their benchmark indices and when summed up all together Nordea's enhanced funds had an average benhmark adjusted sharpe ratio of 1,07. Thus implying that Nordea's beta plus management strategies would gain a better a risk adjusted returns for an investor. Against OP Banks funds the difference was even clearer with an average competitor adjusted Sharpe index of 2,34. The best ratio was by Global enhanced fund that beat its benchmark by 1,60 and Op World Index by 3,52. These results tell us that a logical

risk averse investor would choose Nordea's funds instead of the index funds that we had in this study.

The previous Sharpe-ratios imply that during the studied period the risk-adjusted returns have grown tremendously. All of the studied funds have a significantly higher ratios for the past 12-months than in the past three years. In this instance Nordea's Global Enhanced fund managed to rise from 0.91 to 4,77 with a difference of 3,86. On average Sharpe Index rose by 3,29 with in the last 12-months when compared to a three year ratio. When thinking about factor timing, the last 12-months would have been a great time to start investing due to the stock market crash.

This study also looked at the activity levels of Nordea's enhanced funds to ensure that these funds are not just closet indexes. When compared to OP Banks Index funds the difference is obvious. Tracking error measures the funds standard deviation returns against its benhmark index, Nordea's funds had an average tracking error of 2,2, while OP Bank's Index funds had an average tracking error of 0,12. These enhanced funds are trying make active moves to beat their benchmark indices despite the tracking error being relatively low, this is in accordance with the funds description. The most active fund was Emerging Markets Enhanced with a tracking error of 2,56 whilst the least active fund was Global Enhanced fund with a figure of 1,81 this fund also managed to gain the best risk-adjusted returns out of all the studied funds.

When looking at the average tracking error from the last three years the figure has gone down from 2,75 to 2,20, which might be intentional from the fund managers, in order to minimize the risks in a volatile market situation. The largest difference in tracking error between the years came from European Enhanced which lowered its figure from 3,48 to 1,85, that's a difference of 1,63.

In regards to active share, unfortunately the data was only available for Global Enhanced and North American enhanced. Global Enhanced had the larger active share with 55,46%, while the North American enhanced had it's share to 44,52%. This is adds to the tracking error data on active management in these funds. The Global Enhanced fund had it's active share stay consistent with in the time frame of being founded. North American Enhanced fund has been decreasing its active share for every year it has been active. Starting from 53,05% in 2017 to 44,52% in the middle of 2020.

Conclusion

This research was done to asses the performance of Nordea's beta plus equity mutual funds in the pandemic time. The results show that even though some of the funds beat their bechmark indices in respects to pure returns, the overall returns were won by the benchmark indices. This said Nordea's funds still managed to beat rival index funds which was a surpirse since previous studies from Cremers & Petäjistö (2009) showed that most of actively managed funds aren't able beat their passive counterparts. The return figures also showed a clear distinction between previous years and the pandemic year, where Nordea's fund returns were diminished by the start of the pandemic. From there on the NAV of these funds have risen over the level of pre-pandemic.

When assessing risk-adjusted returns Nordea's enhanced funds seem to have the upperhand against the benchmark indices and competitors funds. The overall difference between the funds was clear and for a risk averse investor Nordea's beta plus strategies would seem as a good investment for the studied period. Nordea Funds Ltd. has been able to create funds with a higher risk to reward ratio than their benchmark indices and competitors index funds.

Activity of the studied funds was to make sure that these Enhanced funds are actually semi-actively managed and trying to beat their benchmark indices which we confirmed through tracking error and active share figures. The funds are not overly active but there are still changes done by the fund management to gain an edge over the indices. The figures we got from this study fit the profile of these equity mutual funds.

The most significant limitations of this study are related to the sample and data that was used. These funds are relatively new in the Finnish markets and do not have a long history of being active and the number of these types of funds is very limited. Furthermore because this data was directly collected from Nordea funds Ltd. and OP Banks Fund reports with many of the factors pre-computed, therefore the correctness of these figures cannot be guaranteed.

Suggestions for further studies include studying a similar subject with a bigger sample size and a longer track record as this would lead to more confident results. Furthermore a study could be done regarding the factors that Nordea Funds Ltd. uses in their beta plus management to obtain information on this type of fund management and to gain further knowledge on what basic factors

are assessed when making changes in a portfolio and how much each of the factors contribute to the overall performance.

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APPENDICES

Appendix 1. Fund returns 2020

Table 2. Returns for the year 2020,

Fund	Return on 2020
Emerging markets enhanced	4,04 %
MSCI Emerging Markets	8,54 %
OP Asia Index	2,37 %
European Enhanced	-2,44 %
MSCI Europe	-3,32 %
OP Europe Index	-4,07 %
Global Enhanced	6,60 %
MSCI World	6,33 %
OP World Index	5,36 %
Global Enhanced Small Cap	3,49 %
MSCI World Small Cap	6,39 %
North American Enhanced	8,92 %
MSCI North America	10,04 %
OP America Index	9,02 %

Composed by the author from Nordea Funds Now and OP Banks Monthly reports (2021).

Appendix 2. Adjusted yearly returns

Table 3. Returns of 2020 compared to previous yearly returns.

Fund	Adjusted yearly returns
Emerging markets enhanced	-2,96 %
European Enhanced	-11,81 %
Global Enhanced	-4,79 %
Global Enhanced Small Cap	
North American Enhanced	-4,85 %

Composed by the author from Nordea Funds Now (2021)

Appendix 3. Yearly returns for 13.4.2020-13.4.2021

Table 4. Returns on the given period.

Fund	Returns for 13.4.2020-13.4.2021
Emerging markets enhanced	34,59 %
MSCI Emerging Markets	40,74 %
OP Asia Index	33,50 %
European Enhanced	33,16 %
MSCI Europe	32,65 %
OP Europe Index	33,70 %
Global Enhanced	36,69 %
MSCI World	37,91 %
OP World Index	42,26 %
Global Enhanced Small Cap	54,43 %
MSCI World Small Cap	59,49 %
North American Enhanced	37,78 %
MSCI North America	40,45 %
OP America Index	47,20 %

Composed by the author from Nordea Funds Now and OP Banks Monthly reports (2021).

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