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ICADE

**Active Management versus Passive
Management:**
*An Analysis of Equity Investment Funds
Performance within the European Market*

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Abstract

The objective of my paper is to assess the ongoing debate between Active Portfolio Management and Passive Portfolio Management. Within my paper I have simply conducted a practical analysis of the performance of six active investment funds operating within the European Market and six passive investment funds operating within the European market. I have covered a range of different areas such as emerging markets and developed markets to help me gain an overall understanding of which type of portfolio management is superior within the European market as a whole and if Active portfolio management has advantages in certain areas of Europe.

We have discussed within our literature review that overall Active portfolio management usually fails to perform within the long-term and in most cases fails to perform within the short term as well. We will test if this is true for European investment funds. We have also discussed market efficiency within this thesis and on a smaller scale this paper will provide a broad answer to whether the European market can be described as efficient or inefficient within a five-year period. Finally, we have also discussed the dangers of closet index investment funds and we have used two examples of such investment funds within our analysis to show why they are worthless to investors.

Our results showed that active portfolio management has high potential within emerging markets however in the grand scheme of things passive portfolio management tends to usually outperform active portfolio management. The fees of active portfolio management create a difficult situation for investors as within our net return section it is clear to see that the fees generally take away from the returns of active portfolio management hence passive portfolio management would be the best option within the European market.

Key Words: Active Funds, Closet Indexers, Market Efficiency, Emerging Markets

Resumen

El objetivo de mi trabajo es evaluar el debate en curso entre la gestión activa de carteras y la gestión pasiva de carteras. En mi trabajo me he limitado a realizar un análisis práctico de la rentabilidad de seis fondos de inversión activos que operan en el mercado europeo y de seis fondos de inversión pasivos que operan en el mercado europeo. He cubierto una serie de áreas diferentes, como los mercados emergentes y los mercados desarrollados, para ayudarme a obtener una comprensión general de qué tipo de gestión de carteras es superior dentro del mercado europeo en su conjunto y si la gestión activa de carteras tiene ventajas en determinadas zonas de Europa.

En nuestra revisión de la literatura hemos debatido que, en general, la gestión activa de carteras no suele dar buenos resultados a largo plazo y, en la mayoría de los casos, tampoco a corto plazo. Comprobaremos si esto es cierto en el caso de los fondos de inversión europeos. También hemos debatido la eficiencia del mercado en esta tesis y, a menor escala, este documento proporcionará una respuesta general sobre si el mercado europeo puede describirse como eficiente o ineficiente en un periodo de cinco años. Por último, también hemos debatido los peligros de los fondos de inversión basados en índices cerrados y hemos utilizado dos ejemplos de dichos fondos de inversión dentro de nuestro análisis para demostrar por qué carecen de valor para los inversores.

Nuestros resultados mostraron que la gestión activa de carteras tiene un gran potencial en los mercados emergentes, aunque en general la gestión pasiva de carteras tiende a superar a la activa. Las comisiones de la gestión activa de carteras crean una situación difícil para los inversores, ya que en nuestra sección de rentabilidad neta queda claro que las comisiones suelen restar rentabilidad a la gestión activa de carteras, por lo que la gestión pasiva de carteras sería la mejor opción en el mercado europeo.

Palabras clave: Fondos Activos, Indexadores de Armario, Eficiencia de Mercado, Mercados Emergentes

1. Introduction

One of the more interesting topics I have had the pleasure of studying throughout my time in college was the age-old debate of what type of investment is more prosperous for investors. These methods of investments are of course Active Portfolio Management and Passive Portfolio Management. However, there are a vast array of different factors that play their impactful role within this historical debate and as a final year student this is a topic that has piqued my interest significantly.

As someone who is a novice within the investing world, I have noticed the meteoric rise of the popularity of mutual funds and equity investment funds as opposed to saving money. This dramatic shift in the general populations' behaviour created a curiosity within me.

Within this paper you will find an in-depth analysis into each type of portfolio management as well as key concepts within the topic. I will determine what the key performance indicators are to illustrate an investment funds performance and then select a multitude of active and passive funds to compare. The overall aim within this thesis is to establish simply what the better type of portfolio management would be within the European market.

2. Purpose and Justification of Thesis

The debate between active and passive management is always present within investment management and the overall world of finance and within my thesis I will pay close attention to the equity market within Europe with close attention to emerging markets. My thesis simply aims to provide a concise and comprehensive analysis into the performance between active and passive equity funds within the European economy. Investors usually come up against the challenge of choosing between these two different types of portfolio management. I will aim to provide an analysis of a group of selected investment funds within the European market and from my findings I will provide a recommendation for investors for the short-term as well as the long-term. One of the central aspects of my thesis is the market efficiency theory. The practical analysis of my thesis will allow me to test the viability of the market efficiency theory within the European market and help me derive whether the European markets are efficient within the short term or long term as well as showing us if there are more opportunities for active fund managers to add value within this market. Overall, my general justification for my thesis is to simply provide insights and guidance within a market that is growing strongly but is not as potent and covered as the US market for example. Therefore, we must investigate deeper into this market to determine whether there are areas for active funds to exploit the European market or whether passive funds remain the superior option. One of the key focuses within this thesis is to evaluate the potential of emerging European markets and test the efficiency within those regions to see if it is an area for active funds to thrive. Another justification for my thesis is to discover the viability of “Closet Indexers” which are portrayed as active funds however are no different in terms of strategy to index funds therefore it is essential within this analysis to understand the usefulness of these funds.

The purpose of my thesis is to provide an extremely detailed analysis of the performance of active funds and passive funds within this European market through using a multitude of different variables we will be able to judge the overall returns performance, risk-adjusted performance, and cost efficiency of these funds and within those findings relate it to the general findings within our literature review to then provide an overall conclusion to the debate between Active Management vs Passive Management.

3. Key Concepts

Now that we have addressed and defined the two types of portfolio management, we can now focus on other key concepts we must understand to help us derive our conclusions. We will also be deriving sets of investors with specific traits and characteristics which we will later conclude with what type of portfolio management best suits them. These key concepts will include a multitude of different funds as well as key terms that will be used throughout the duration of the paper and as well to show aspects of different basic concepts I have learned throughout researching literature for this paper.

3.1 Investment Funds:

Since the practical part of our research will largely depend on the selection and analysis of investment funds, it is essential we know what they are. Investment funds simply collect capital from a vast array of investors to garner a large pool of money. With this large pool of money, they are now able to invest in a diverse array of securities. One of the biggest reasons investors choose to place their capital within investment fund is due to the lack of knowledge they possess themselves which is not an issue when investing in a fund as managers will have the expertise that your average investor simply does not. The major advantage of investment funds compared to investors investing on their own is the access to a larger variety of securities which helps create a more diversified portfolio. Another key advantage of investment funds is the lowered risk the investor takes on rather than investing himself due to the risk being spread out to all investors within the investment fund. With that in mind the investor will also pay less when it comes to fees as they are spread out between all investors which is much cheaper than investing on your own and facing the brunt of all the fees. There are different types of investment funds such as mutual funds, hedge funds, and exchange traded funds. It is important to note that these different types of investment funds differ due to factors such as investment strategy/style, maturity, underlying assets, etc (Reborado, 2019). First, I will discuss the different types of investment funds.

3.2 Mutual Funds:

It is clear that the main advantages of mutual funds include diversification across different securities which helps mitigate risk in the case of one security performing poorly. Mutual funds are extremely accessible and convenient for investors due to the fact they are able to enter or

exit the fund by buying or selling the shares at the fund's net asset value at the end of the trading day which makes them very liquid. The prior reason is why Mutual Funds are also called open-end funds as they are obligated to buy back shares from shareholders at the fund's net asset value (Mobious, 2007).

There is no doubt that mutual funds play a monumental role within the investment market and landscape as their main objective is to optimize the value of assets under management. These investment bridges act as an intermediary that collects capital from a diverse array of investors which is then expertly invested into a broad variety of different securities. The main goal is to simply maximize the value and growth of the assets they oversee by investing in securities such as stocks, bonds, and other financial instruments (Covachev, 2023).

Mutual funds have a vast array of benefits and one of their distinguishing factors is the fees they charge investors. Unlike hedge funds where they generally charge performance fees mutual funds have a different approach as they typically charge a fixed percentage of the funds' assets. This is a fee model which is in unison with the performance and growth of the fund (Covachev, 2023).

It is clear that one of the biggest pros of mutual funds would be the fact they invest in a wide variety of different securities which offers investors with a diverse portfolio and this diversification also helps mitigate risk as the fund would not be bound to a poorly performing security. This offers investors a safety blanket and more confidence within the mutual funds as risk is being controlled by the managers (Covachev, 2023)

Additionally, mutual funds are deemed to be very accessible and convenient for investors. As they are also often referred to as open-end funds, they give investors the opportunity to buy or sell shares at the fund's net asset value at the end of each trading day which makes mutual funds very liquid which is a huge benefit for investors (Mobious, 2007).

Overall, we can see that mutual funds are a staple within the investment world within this large sector we have different types of funds such as:

- *Equity Funds:*

Equity funds are easily the most popular type of mutual funds. These funds simply invest in stocks. Mutual funds offer a low-cost way for investors to build a diversified and varied portfolio. There are generally three ways for investors to earn money from equity funds. These are dividends, capital gains distributions, and share price appreciation. The accumulation of all three earning scenarios is called total return of the fund. (Mobious, 2007)

- *Fixed-income Funds:*

These generally are less volatile than equity funds however, it also results in them being less popular than equity funds due to the lower returns but serve as the perfect investment option for investors with low risk tolerance and a conservative mindset. Bond prices have an inverse relationship with interest rates meaning if interest rates increase the prices of these bonds fall. Interest rates are not as volatile as company news hence bonds are more stable than stocks. Longer term bonds usually see higher return than shorter-term bonds because they experience greater price decline when interest rates rise however the longer the maturity of a bond the more riskier they are for the investors but that is the trade-off (Mobious, 2007)

- *Index Funds:*

These are mutual funds with a portfolio weighting which replicates a specific index in order to mirror performance (Mobious, 2007).

- *Fund of Funds:*

A very basic concept where a mutual fund simply invests in other mutual funds (Alexander & Mobes, 2004).

3.3 Closed-End Fund:

Closed-End Funds are similar to open-end funds in the sense that they also collect money from investors to create a pool of capital to invest however the difference between both comes as close-end funds only issue shares to the public once and has a set number of outstanding shares. Close-end funds can trade at a discount, premium or rarely equal to their NAV. Close-End funds have a more niche investing pattern and trends opting for specialized sectors and foreign securities as they opt for illiquid assets then what is seen on the stock exchange. Closed end funds are generally not as popular as open-end funds due to the fact that mutual funds have more money to invest giving them a chance to diversify their portfolio more when the opportunity arises (Mobious, 2007)

3.4 Exchange Traded Funds (ETFs):

ETFs can offer a cheaper way for investors to diversify their portfolio. The main objective of an ETF is to achieve similar return as a specific market index which is similar to what an index fund does. Similar to close-end funds ETFs can also be traded on the secondary market which means they can have a market price higher or lower than their net asset price. The main difference between ETFs and close-end funds are that ETFs can be bought or sold at any time during the trading day. ETFs have been extremely popular in recent years as they cater to the needs of both passive and active investors due to their ability to be traded like stocks and instantly diversified in the form of an index fund (Grande, Grande, & Grande, 2009).

The main advantages that ETFs provide for investors are diversification as previously mentioned. When you purchase a unit of ETF you have now invested in a vast variety of different securities. Price Transparency aswell due to the fact that ETFs are traded like stock therefore they are subject to price change every minute and when looking at mutual funds they are priced once a day after the trading day is closed meaning investors can only buy or sell at the close. ETFs are more tax efficient than traditional mutual funds due to the way they are structured and designed. Mutual funds realize capital gains on an annual basis which would be a taxable event for non-retirement account while on the other hand ETFs realize capital gains if there find changes made to the index funds. The lower turnover ratio makes ETFs ideal for taxable accounts (Grande, Grande, & Grande, 2009).

The main disadvantages that ETFs provide for investors are that ETFs are a generally new phenomenon within the investing world and that could give us limited historical information

and data in terms of evaluating performance. Limited selection is another issue as ETFs lack diversity within fixed-income assets which might be frustrating for investors who want to diversify their portfolios with bonds. Investors use ETFs for minimizing volatility which will in the end reduce risk however does not allow you to maximise profits but more so control the highs and lows of the investments and not make it extreme. When prices of assets and bonds decline subsequently reducing the value of an ETF. ETFs are designed to replicate the performance of indexes however due to factors such as fund expenses it may not be able to identically replicate the index (Grande, Grande, & Grande, 2009)

3.5 Hedge Funds:

Hedge Funds just like mutual funds and close-end funds are pools of capital provided by investors which is then used to invest in diverse set of securities. Hedge funds generally cater more so to institutional investors and highly wealthy investors and is not a fund that is accessible to your average citizen. A key feature that distinguishes hedge funds from other types of funds is their active and aggressive approach to investing as well as highly leveraging their funds (Eichengreen and Mathieson, 1999 as cited in Varotttil, 2009).

One of the main reasons hedge funds have become so popular is due to their construction. Hedge funds are structured in a way that helps them avoid strict regulations and hedge funds in general would not be as highly regulated as mutual funds are. This structure has led to their investment strategies being more calculated and even complicated in comparison to regular mutual funds (Varotttil, 2009).

3.6 Benchmark:

A benchmark when referring to portfolio management is a reference point for funds to analyse how they are performing. In the early days when coining the term, benchmarks were just used for understanding the general direction of the market however in modern times, they have become an essential part of portfolio management as they have impacts on active management, passive management, asset allocation and tend to be used as performance indicators. Some examples of benchmarks are the S&P 500 and the MSCI World Index (Siegel, 2003).

3.7 Efficient Market theory:

This theory is key when understanding investors psyche as many investors will consider markets to be efficient or inefficient which can heavily influence what investment strategies they prefer using.

Markets are efficient when prices reflect the available information (Fama, 1970). The main characteristics of efficient markets is how fast new information can be reflected by the stock price and there is no potential advantage to be gained when leveraging already available information (Dias, Hota, Chambino, 2023). The information provided on this theory makes us assume that investors have upmost trust within the market. However, we know investors do not all act rationally and some do not trust the market and believe it is inefficient and this is when they attempt to take advantage of the market.

4. Literature Review

Now that we have our key concepts established, we can now move into the actual discussion of Active Portfolio Management vs Passive Portfolio Management and analyse the multitude of different literature available to us and outline the key takeaways from them. In simple terms one method of portfolio management investors aim to achieve a superior return while on the other hand we must accurately track the performance of the index. Now this entails to us that one of the substantial differences between both these investment strategies is the risk taken on by the investor.

The second difference would be the different theoretical frameworks they follow. When we mention passive management, we believe that the market is efficient which would indicate no fund manager can beat the benchmark consistently while an actively managed fund believes that the market is inefficient and there are higher returns to be earned above the benchmark (Koyengo, 2007).

The first problem we encounter is that many followers of the market efficient theory believe that active portfolio management cannot outperform the benchmark in the long run when adjusting for risk and it also cannot beat the benchmark in the long run even if markets are somewhat inefficient (Jones & Wermers, 2011). With this being the case, we must ask ourselves does active portfolio management itself add any value to an investor. When we also consider the expenses and fees associated with them, they even tend to bring upon negative returns in many cases (Carhart, 1997). In general, the main consensus when looking through historical literature is that Actively Managed portfolios do not outperform the market. A critical part of active portfolio management is asset allocation and weighted holdings within the portfolio. Wermers (2000) conducted analysis on the components of mutual funds' performance with heavy detail on the skill of fund managers. The study suggests that active fund managers generally have higher stock picking skills compared to passive fund managers and stocks held by these active fund managers outperformed the market by 1.3% however underperformed after fees were considered. Wermers (2000) has suggested that there is value to be found in active portfolio management when managers frequently and rigorously adjust portfolios to capitalize on the market inefficiencies.

When assessing the viability of both investment strategies in Emerging Markets we can actually see the value of actively managed funds. In a study conducted by Kremnitzer (2012) actively managed mutual funds within emerging markets benefit greatly from the inefficiency found in

emerging markets within the short-term thus resulting in active funds outperforming the passive funds in the short term (Kremnitzer, 2012). More research has also suggested that this is accurate as a study conducted by Dyck et Al. (2013) shows us that there is more alpha to be achieved by active funds within emerging markets and in general they tend to outperform their passive counterparts significantly within these markets. One key aspect that we must consider is that these returns are especially fruitful within the long term as active mutual funds tend to outperform passive funds such as ETFs in extremely short time periods. For example, within three months active mutual funds tend to have higher pre-cost and post-cost returns compared to ETFs suggesting there is high potential for active funds within emerging markets (Boganes & Olesen, 2019).

From a global perspective many studies such as Chang and Lewellen (1984) which have analysed up to 200 mutual funds have all come out with the similar conclusion that within the long term, passively managed funds do indeed outperform their active counterparts and that most mutual funds fail to outperform the benchmark. There is no doubt within the research shown that in general the average actively managed funds fall short and underperform compared to a low-cost index funds even when taking into consideration the fees and expenses. However, the popularity of Active Mutual Funds has skyrocketed the past decade far more than Passive Mutual Funds which leads me to believe that investors have become far more “fast returns” orientated throughout the years (Gârleanu, N., & Pedersen, L. H. (2022)

However, in our study we take a deeper look into the European market and one of the standout features within the European equity market is the size difference of the market compared to the US and Asian markets. One of the more interesting findings within this study is the success that active mutual funds have within Europe. The small and mid-cap funds tend to outperform their market which would indicate that smaller sized markets tend to be an area active portfolio management can excel at especially in the European market. When the study analysed the larger cap funds, they were still underperforming the benchmark but not by much. (Otten & Bams, 2002).

Given the vast array of studies that indicate that passive portfolio management is the superior investment strategy we must discuss if this is shown in the number of people investing this way. The last five years the proportion of assets under management represented by passive funds has increased from 16% to 26%. (Elton, Gruber, & de Souza, 2019). The overall size of passive funds at this moment has reached \$8 trillion and a big reason for this growth can be

attributed to the rise of ETFs as well. The ETFs share of a passive fund is near to 50% which is a substantial increase from almost a decade ago (Sushko & Turner, 2018). The rise of passive investing has put pressure on active management as the main reason for the popularity in index funds and ETFs is due to the fact it is a more efficient way for broad diversification at a low cost (Ferri, 2010).

Now that we have established the prior research and different studies gone into both strategies, we can clearly define both and provide the advantages and disadvantages of each one.

4.1 Active Portfolio Management

Active Portfolio Management in its simplest terms can be described as managing a portfolio by consistently and actively altering your portfolio based on benchmarks. Active portfolio Management is concerned about the outperformance of the estimated return of a target benchmark portfolio (Browne, 2000, as cited in Kerkhof, 2009).

The basic functionality of active portfolio management is when an individual/investor chooses to give their capital to a portfolio/fund manager or financial advisor who in turn will charge costly fees to invest their capital, organise and manage investments. This in turn would create the perception for investors utilizing this strategy that markets are inefficient due to the fact they are paying these fund managers fees to figure out ways to earn more than what the market can normally give back. This tells us these investors using this strategy do not necessarily trust the stability of the market and believe there are instances where greater returns can be made when hiring a highly skilled active fund manager to exploit these opportunities within the market which in general is subject to instability at times (Cox, 2017).

So, it is evident that this strategy is very opportunistic and in general does carry a strong essence of risk due to the fact it places a lot of emphasis on external factors such as opportunities within the market as well as the added trust you need to have in your fund manager being adequately skilled to outperform the benchmark. It is clear one of the biggest factors influencing the success of Active Portfolio Management is the skill of your chosen fund manager which in turn dictates how successful you can be with this strategy as some of the tasks they must be tracking at all times are trends within the markets, changes within the market, and in a sense anticipating and forecasting what the future market situation will hold which will then lead them into either buying securities when the market is undervalued or selling the security when the market is overvalued which is clearly more prosperous than replicating the index as passive management

does. Now as we have gone through the basic concept of Active Portfolio Management I will now layout some advantages and disadvantages.

4.1.1 Advantages

High short-term gains are a huge aspect of active funds. Using current data provided by **SPIVA** we can see that within the European market that the percentage of active fund managers that outperform the benchmark is **18%** and within the eurozone market itself **22%** percent of active fund managers outperform the benchmark. Now considering that markets within Europe are considered to be efficient historically this is a significant number of active fund managers who were able to outperform the market. Now this is obviously going to be more rewarding than a passively managed fund as they can never “beat” the market. Looking at another report called the **Morningstar active and passive barometer** which compared performance between active and passive fund performance halfway through 2023, We can see from the report that **36.6%** of European active equity managers in the chosen equity categories managed to outperform their passive counterpart. This success active equity fund managers find is within the mid-cap and smaller-cap segments within the emerging markets. This is due to the fact these smaller companies in general will have less information and attention around them which can lead to mispricing and wrong evaluations making it perfect for active managers to take advantage of. We must also mention how mid-cap and small-cap markets are more volatile than large-cap markets which is another area active fund managers can exploit.

As mentioned previously when active fund managers notice changes within the markets, they are able to make the adequate adjustments to your portfolio which can better help optimize it. They can account for variable factors within markets such as new innovations, changes in regulations, and emerging new trends. These are things which cannot be done in passive portfolio management as you are solely replicating the index hence you will not be able to adapt and be flexible with your portfolio.

Once again since there is no need for fund managers to follow a specific index they can cater to specific needs and wants to the investor which can include risk tolerance or specific areas to invest in for example if an investor wanted to invest in emerging markets and green stocks actively managed portfolios can do this as they are not restricted by any index they can have a variance in their portfolio which is much more investor friendly.

4.1.2 Disadvantages

Without a doubt the fees being paid to the fund managers are a massive deterrent for Active Portfolio Management. The most skilled fund managers are going to be expensive and with addition to high fees the fund managers will be taking a chunk of profits as commission in addition to that so overall it can be a frustrating factor. The high fees will largely be due to the tools necessary to help spot opportunities within the market to achieve that profit, so the biggest question is do the profits in the end justify all the fees and commission fund managers take.

High Risk and poor long-term performance are evident. Using the data we have from **SPIVA**, it is clear to see that historically actively managed equity funds simply do not perform well within the long term. The data shows us that within the European market the percentage of equity funds that underperformed the S&P Europe 350 in a 3-year period was 89.29%. Within a five-year period, the percentage of equity funds that underperformed in the S&P Europe 350 is 93.35%. Finally, within a 10-year period the percentage of equity funds that underperformed in the S&P 350 is 92.84%.

If we use another large European index and look at the Eurozone S&P Eurozone BMI. Within a three-year period, the percentage of equity fund managers that underperformed this index is 84.47%. Within a five-year period, the percentage of equity fund managers that underperformed this index is 88.87%. Within a 10-year period the percentage of equity fund managers that underperformed this index is 96.14%.

So, from the data we derived from **SPIVA** that analyses the two biggest European equity indexes we can abundantly see how lacklustre the performance of actively managed equity funds is within the long term. This makes active funds risky as the chances they fail are high and along with the fees it is quite a hefty commitment to make and with our data we can see it does not seem to be worth it in the long run.

4.2 Passive Portfolio Management

Now on the other side we have passive portfolio management which is almost the complete opposite of the previous. Passive portfolio management does not employ traditional security analysis or the fund managers assessment and analysis to relative asset valuation instead it is a much more stable and patient approach which is expertly constructed to match the long-term performance of one segment on the capital markets. The most common form of passive portfolio management would be the index fund for example the S&P 500 (Rudd, 1986).

In general, passive portfolios is managed without valuation of individual assets, analysis on emerging markets or trends within the economy, innovations, or any sort of changes on the market as a whole which obviously is the complete opposite of active portfolio management as within passive portfolio management there is no incentive or initiative to take advantage of any changes within the market which could lead to higher earnings (Rudd, 1986).

As previously mentioned, investors who choose to invest in actively managed funds view the markets as inefficient, when relating it to investors who invest in passively managed funds, they would view markets as efficient therefore they do not believe there are worthwhile opportunities for an excess return to be found hence passively managed funds will simply just mirror and replicate market indexes. Investors using this strategy will get a fair return equal to that of the index without having to try to “beat” the market and they also do not need to spend extra money on fees hence it is much less costly than actively managed funds (Cox, 2017).

Now with a brief description of Passive Portfolio Management provided I can now list some of the advantages and disadvantages it entails.

4.2.1 Advantages

It is clear that since passive portfolio management simply follows the index there is no need for managers to require tools to help them predict and forecast trends, innovations, and market changes hence the fees of these managers will be much lower and passive strategies can benefit from tax advantages and lower turnover which is leads to more savings on cost (Kerkhof, 2009). One thing we must consider is the fact if markets are efficient then passive investors will be receiving the market index for minimal cost without encountering any high fees like actively managed funds which means the net fees return for actively managed funds would be lower than passively managed funds. Now if we were to consider if the market was inefficient the earnings made from taking advantage of predicting trends and other discrepancies must be enough to override the fees and commission taken from the investor so in the end the overall return for actively managed funds in an inefficient market may not even be worthwhile. Passive management seems more like a guarantee (Cox, 2017). Even when markets can be volatile and inefficient passive management is a long-term investment hence investor need not panic about dips in value (Kerkhof, 2009)

4.2.2 Disadvantages

Dispersion of value over time occurs since long term index investing is mostly market capitalization weighted, this simply increases the weight of the high market capitalization stocks and simultaneously decreasing the weight of the low market capitalization stocks. The more weight added means the more influence these high market capitalization stocks have within the index and the more your funds will be allocated towards them rather than the low-priced stocks. Traditional investing is based on buying low and selling high however within this type of portfolio management they end up doing the opposite by buying the overvalued stocks as it makes up the larger part of the index and decreasing the weight of undervalued stocks which overall defeats the purpose of “buy low and sell high”. This causes a dispersion of value within the portfolio over time (Edoardo, 2015).

It is obvious that when considering active portfolio management there is a lot more detail that goes into the overall analysis of the environment, economy, and market which leads to investors having greater knowledge and insights on the stocks they are investing in as well as the risk involved however within passive portfolio management since they only replicate the index there is a lot less critical analysis going into investors decisions which is not a good thing (Edoardo, 2015).

Dependency on Active Portfolio Management is one thing people do not consider about successful passive portfolio management is that in order for them to be profitable they are reliant on highly skilled active managers who correctly conduct their analysis and push security prices to their true value. If there were no active portfolio investors and everyone partook in passive investing there would no longer be active managers pushing security prices to their true value which would lead to the market becoming inefficient. Due to everyone going passive there would be no equilibrium in the stock market (Edoardo, 2015)

There is not nearly as much flexibility or customization within passive portfolio management as there is in active portfolio management and in theory passive portfolio management does miss out on a lot of possible earnings if the market is inefficient as they fail to identify these inefficiencies.

5. Research Objectives

Now that we have concluded the discussion as well as defining and comparing the advantages and disadvantages of both active and passive portfolio management. We must link this literature review to our overall analysis, and this will be done by setting objectives for our analysis based on our literature review. So here I have compiled a list of objectives our analysis aims to understand.

1. To find out whether actively managed European equity funds were able to outperform their respective benchmark indices in different time periods.
2. To find out whether actively managed European equity funds performed better as compared to passive (index) funds.
3. To find out whether Actively managed European Small-Cap and Mid-Cap (Emerging Markets) funds tend to outperform the market.
4. To determine the viability of closet indexers.
5. To find out if the European Market is Efficient.
6. To determine which investment strategy is the most optimal within the European Market.
7. Determine the best market to invest in between the emerging and developed European market.

6. Key Performance Indicators

6.1 Beta

Fliess and Join (2009) described Beta as an essential component of modern portfolio theory and investment risk management in relation to stocks and their behaviour within the market. Beta is a simple to understand as its function is to measure the volatility of stocks relative to the overall market. In short terms beta is the measure of systematic risk. It is calculated by the following formula below:

$$\text{Beta Coefficient } (\beta) = \text{Covariance } (R_e, R_m) / \text{Variance}(R_m)$$

- **Re:** Return of an individual stock
- **Rm:** Return of the overall market
- **Covariance:** This measures the relationship between the two variables. A positive covariance indicates the stock returns tend to follow the same trend as the market returns and a negative covariance would indicate that the stock returns do not follow the market returns.
- **Variance:** How far the market points spread out from their average value which basically gives us a gauge into the volatility.
- $\beta > 1$: This indicates that the stocks are more volatile than the market.
- $\beta < 1$: This indicates that the stocks are less volatile than the market.
- $\beta = 1$: This indicates that stock prices move along with the market.

A basic demonstration of how Beta Coefficient works:

Fund A: Beta Coefficient of 1:

This beta coefficient shows us that the investment fund moves with the market hence if the market were to move up by 1% the investment would also move up by 1% and the same would occur in market downturns. This would be ideal for passive investors who want to replicate indexes.

Fund B: Beta Coefficient of 0.5:

This beta coefficient shows us that the investment fund is less volatile than the market hence if the market were to move up by 1% the investment fund would move up by 0.5%. This would appeal to investors who want funds that do not overreact to market fluctuations. Safe but that comes with lower return as well.

Fund C: Beta Coefficient of 1.5:

This Beta coefficient shows us that the investment fund is more volatile than the market hence if the market were to move up by 1% the investment fund would move up by 1.5%. This clearly indicates a more aggressive and active type of strategy from investment funds, and this would cater towards investors who are looking for higher returns.

6.2 R Squared (R²)

The R² also known as the coefficient of determination indicates to us the amount of variation of a dependent variable is explained by an independent variable in a regression model. In relation to this R² tells us the percentage of investment funds movements which can be directly attributed to the movements of the benchmark. The formula is shown below:

$$R^2 = 1 - (\text{Unexplained Variation} / \text{Total Variation})$$

- R² range from 0-1 and is usually represented as a percentage. If R² is 100% then this means that all the movements of an investment fund are caused and explained by movements in the index.
- R² that are within the range of 85% - 100% show that the investment funds generally move in line with the index.
- R² that is lower than 70% indicates that the investment funds movement does not follow the movements of the index.

6.3 Sharpe Ratio

The Sharpe Ratio was first introduced by William F Sharpe in 1966 and it was made to be a measure of comparison of mutual funds' performance. It was originally called the reward-to-

variability ratio. This ratio garnered a lot of popularity and even today it is a hallmark for financial analysis of mutual funds (McLeod & van Vuuren, 2004).

The Sharpe Ratio was in fact built on the Markowitz mean variance paradigm. This means the Sharpe Ratio assumes that the mean and average variance of return also known as the standard deviation over a period of time is sufficient to evaluate the prospects of an investment fund/mutual fund (Anelli, 2023)

“The Sharpe ratio is indeed the ratio of the excess realized or expected return of an investment versus a benchmark portfolio or a risk-free rate (numerator) to its return standard deviation over the same period of time (denominator).”(Anelli, 2023).

The Sharpe Ratio simply compares the return of its investment to its risk. It is an extremely popular measuring tool for the performance of mutual funds. What this ratio shows us is the historical or projected returns relative to the benchmark with the historical or expected variability of the returns (Pav, 2016). The formula is as follows:

$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

- **R_p** – Return of Portfolio
- **R_f** – Risk Free Rate
- **σ_p** - Standard Deviation of Portfolio Excess Return

The Sharpe Ratio is useful for comparing risk-adjusted returns of different investment funds. It gives investors an idea as to the excess returns generated for the extra volatility endured over a risk-free investment. A higher Sharpe Ratio would indicate good investment fund performance given the associated risk hence the higher the Sharpe Ratio the better the performance in general.

6.4 Jensen Alpha

The Jensen Alpha is another way we can rank the performance of investment funds. This method was developed by Michael C Jensen in 1998 and it follows the Capital Asset Pricing Model. It evaluates the performance of a portfolio, considering the risk involved and the expected market return based on the overall market performance. In simple terms it shows us the excess returns that an investment fund achieves over the return of the market. The Alpha measure shows us if an investment fund has outperformed the benchmark. This means that passive investment funds technically cannot earn an alpha due to the fact they replicate the

benchmark. So Alpha is generated by Active Portfolio Management. The Jensen Alpha measures if an investment fund is earning the required return for its level of risk.

$$\text{Alpha} = R_i - R_f + \beta * (R_m - R_f)$$

- **R(i)** – The Realized Return of the Portfolio Investment
- **R(f)** – The Risk-Free Rate of Return for that time period
- **B** – The Beta
- **R(m)** - The Realized Return of the appropriate market Index

The Alpha can be greater than, equal to, and less than zero and what the figure calculated indicates is the following (Verma & Hirpara, 2016):

- If the Alpha (α) is greater than zero, this means that the investment fund has earned a return that is greater than the expected return of the market or in other words the investment fund has beaten the benchmark.
- If the Alpha (α) is equal to zero, this means that the investment fund has earned an equal return to the expected return of the market or in other words it has matched the benchmark.
- If the Alpha (α) is less than zero, this means that the investment fund has earned a return that is less than the expected return of the market or in other words the investment fund has underperformed.

6.5 Tracking error

The tracking error is the standard deviation of differences between portfolio returns and benchmark returns observed at a given frequency over a given period of time (Vardharaj, Fabozzi, & Jones, 2004). The tracking error is calculated by the following formula:

$$\text{Tracking Error} = \text{Standard Deviation of (P-B)}$$

- **P** – Portfolio Return
- **B** – Benchmark Return

An investor with a low average return paired with a high tracking error indicates to us he is massively underperforming compared to the benchmark. The lower the tracking error the more a fund manager follows the benchmark. One of the disadvantages of this measure is that it does not directly tell us if a manager is outperforming or underperforming from the benchmark. If a

fund manager has an extremely high benchmark and if we have no prior knowledge of his returns, we would not be able to tell if he is overperforming or underperforming. This formula is simply a guide to show us the deviation of returns compared to its benchmark (Vardharaj, Fabozzi, & Jones, 2004).

Now considering our previous analysis of Active and Passive portfolio management we can assume that the Passively Managed investment funds would have a low tracking error as they plan to replicate the index hence their returns would not deviate from the benchmark while on the other hand, we have actively managed investment funds who would tend to have higher tracking errors as they plan to beat the market.

7. Methodology

I will now select six Active and Passive European investment funds. I believe having a wide range of mutual funds to compare will give us the best possible analysis of the European Market. I must also reiterate that these mutual funds will be investing in equities rather than fixed income. First of all, I believe that there is a larger quantity of available data for the equity market as well as more transparent data which will allow for more simple analysis of fund performance. Equity markets also deploy unique and modern strategies which allows them to beat the benchmark and achieve alpha which is a key performance indicator we will be using. The final reason we will not be using the fixed income market is due to the diversity and complexity of their markets makes it challenging to decipher the appropriate benchmark. The next substantial measure I will take is to ensure the investment funds selected are of course based in Europe but are also denominated in euros. This should remove any currency implications as converting returns back to funds base currency through currency fluctuations can significantly alter these returns and this would be led to an inaccurate comparison of funds in this analysis.

To ensure a fair and non-biased selection of investment I utilized a number of selected Mutual Funds from different investment fund companies to ensure different strategies and structures are represented in our analysis. I have also included Small-Cap and Mid-Cap (Emerging Markets) investment funds in our selection so we can collect a variety of different investment approaches and also analyse whether actively managed funds perform better at certain Cap sizes. Here we will have a short description of each selected fund to show a clear overview of the funds we are analysing.

I will then use Refinitiv Eikon to find the figures for each key performance indicator I have identified in my previous section referring to them. I will detail small insights about each key performance indicator and then find out which method of portfolio management is better for different types of investor profiles. I will be analysing the performance for these mutual funds on a five-year time period. Refinitiv Eikon also identifies whether the investment approach of an investment fund is active or passive hence I will identify the investment style of the funds using what Refinitiv Eikon provides me with firstly

Then the next important measure I have implemented is that when selecting my investment funds, I will identify any fund that has a tracking error between 0-2% as a passively managed fund and any investment fund with a tracking error between 2-4% as closet indexers and any

investment fund with a tracking error over 4% will be considered a true actively managed investment fund.

8. Selection of Investment Funds

*****All information presented in this section was derived through Refinitiv Eikon*****

8.1 Active Mutual Funds

iMGP Sustainable Europe C EUR 2

This is a mutual fund provided by iM Global Partner. This is a sub fund, and it has a specific goal of maximizing long term growth through investing more than 75% of its assets in equities domiciled in member states of the European Union. It is a fund that is extremely active according to morning star the perceived risk of this mutual fund is very high. This is the first active mutual fund chosen that focuses on the Large-Cap European market.

GVC Gaesco Europa, FI

This is a mutual fund provided by GVC Gaesco Gestion. This aim of this fund is to invest the majority of its asset in European equities provided by public and private issuers. The investment strategy taken by this fund is to deploy their assets in equities of companies which are of low, medium, and high capitalization. According to Morningstar this fund is perceived to have high risk however the return considering the risk within the short term is exceptional showing that they are able to beat the market at times showcasing the active approach of the fund.

Thematics Europe Selection RC

This is a fund provided by Thematics Asset Management. Their goal is to seek outperformance net of fees over its minimum investment period of five years. It achieves this by investing in European equities that prioritise consumer needs. This fund can be considered quite ethical and can be more popular between more socially conscious investors as the investment fund considers environmental, social and governance factors into their investment strategy.

Templeton Eastern Europe A (acc) EUR

This fund is a sub fund of the Franklin Tempelton investment fund. The main objective of this selected investment fund is to simply increase the value of their investments over the medium to long-term. The operations of this investment fund are predominantly within emerging markets of Europe which is countries within Eastern Europe. This fund utilizes an aggressive approach towards investment and is extremely active.

Schroder ISF Emerging Europe A Acc EUR

This is another active equity investment fund which aims to provide capital growth. This investment fund operates within the emerging markets of Europe and more specifically central Europe and Eastern Europe. It has an extremely aggressive and direct approach and strategy. The overall holdings of this European equity funds can be found within regions of Eastern Europe however there are also miniscule elements of the portfolio located within the Mediterranean area.

NESTOR Europa Fonds B

This investment fund operates within the entirety of the European market however invests within the European Small Cap equity market. They imply an aggressive approach within these markets as they believe there are higher possibilities for inefficiencies within Small-Cap markets. High substance European companies are the main components of this investment funds and potential and future growth is a key aspect of the operations of this fund.

8.2 Passive Mutual Funds

Lyxor Index Fund Euro

This is an investment fund provided by Amundi. It is an index fund hence the aim of this fund is to reproduce and replicate the same results as the “Euro Stoxx 50 Net Return”. The fund wants to minimise the tracking error between the performance of the fund and the benchmark indicator. It is extremely low risk to investors with relatively low fees.

Xtrackers Stoxx Europe 600 UCITS ETF 1C

This is an ETF provided by Xtrackers with a focus on replicating the Stoxx Europe 600. The main goal of this fund is to closely replicate the benchmark. This investment fund would be made up of Large, small, and mid-cap companies from developed European countries. The risk level on this investment fund is quite low however there still is a possibility of losses occurring.

SPDR MSCI Europe Small Cap UCITS ETF

This is an ETF provided by SPDR with a focus on replicating the MSCI Europe Small Cap Index. This investment fund primarily invests its assets into equities issued by smaller sized European companies located in developed markets not emerging markets. To help track the index the investment fund utilises an optimisation strategy which will help in building a portfolio that is representative of the index.

Deka MSCI Europe MC UCITS ETF

This is an ETF provided by Deka with a focus on replicating the MSCI Europe Mid Cap index. This investment fund focuses on investing in the largest stock companies in Europe by capitalisation. It in fact covers 15% of Europe's total market capitalization hence providing investors with diversification as well as low risk. This index is mapped with the same securities as the index hence they fully replicate the index.

Vanguard FTSE Developed Europe UCITS ETF EUR D

This is an ETF provided by Vanguard with a focus on replicating the FTSE Developed Europe ex U.K. Index. This investment fund consists of large and mid-sized companies within the developed Europe market. The fund aims to replicate the fund by deploying a full index replication method hence the risk within this fund is extremely low.

AXA Indice Euro C

This is an index fund provided by AXA with a focus on replicating the Euro Stoxx 50 index. It aims to provide stability and safety for investors through different market conditions, reduced operating and management costs and possible taxes applicable to the fund. The replication method used by this fund is full hence completely replicating the index. This is an extremely low cost and safe fund for investors looking to add large sized European companies to their portfolio.

9. Practical Study: Analysis of Funds

****Note****

To differentiate between Active and Passive investment funds I will highlight the Active Management Funds BLUE and the Passive Management Funds GREEN.

Now that we have established our investment funds for analysis, we must decipher key measures that show us why an investment fund can be considered as active or passive. The first feature will be the fees that the investment funds charge. As previously mentioned in our literature review when discussing the disadvantages of actively managed funds fees was a large topic. Active funds charge generally high fees due to the higher risk they take as well and the multitude of different tools needed to carry out their work as well as the transaction costs being much higher within active funds due to the more frequent buying and selling aspect. While on the other hand passively managed funds tend to have lower fees due to their sole responsibility being replication of the index.

The second feature which will help us identify between active and passive funds is the tracking error. Vardharaj et al (2004) identified and established specific ranges that certain types of funds tracking error must be between. So, for an index fund we would expect the tracking error to be 0. For more modern passive strategies such as ETFs the tracking error would be around 2% and for *closet indexers* which are investment funds that do not associate themselves with being index or passive funds and portray themselves as actively managed however usually produce results that just about replicate the benchmark, they would have a tracking error range of 2-4% (Petajitso, 2013). Actively managed investment funds would have a tracking error of over 4%. Along with the tracking error which essentially shows us the difference between the earnings of the benchmark and the investment fund. Similar key performance indicators we identified are the beta and R2. As we established that tracking errors above 4% signify active management, we can also assume the further the beta is from 1 the more active the fund as it means the fund does not follow the trend of the indexes. The final measure is R2 as a range within 85%-100% can be considered passive as it shows the fund moves in line with the index. A range below 70% can be considered active as it does not follow the movements of the index as much.

9.1 Distinguishing between Active and Passive investment Funds

Table 1 (Fees and Charges) – Information Gathered from Refinitiv Eikon

Investment Fund	TER	Initial Charge	Max Annual Charge
iMGP Sustainable Europe C EUR 2	2.26	3.00	1.75
GVC Gaesco Europa, FI	2.39	2.25	2.25
Thematics Europe Selection RC	1.68	2.50	1.79
Templeton Eastern Europe A (acc) EUR	2.83	5.75	2.10
Schroder ISF Emerging Europe A Acc EUR	1.88	5.00	1.50
NESTOR Europa Fonds B	2.51	3.00	1.20
Lyxor Index Fund Euro	0.52	0.50	0.50
Xtrackers Stoxx Europe 600 UCITS ETF 1C	0.20	0.10	0.10
SPDR MSCI Europe Small Cap UCITS ETF	0.30	0.30	0.30
Deka MSCI Europe MC UCITS ETF	0.30	2.00	0.30
Vanguard FTSE Developed Europe UCITS ETF	0.10	0.10	0.10
AXA Indice Euro C	0.92	3.00	1.50

Table 2 (Investment Fund Benchmark Variation) – Information Gathered from Refinitiv Eikon

Investment Fund	Tracking Error	Beta	R2
iMGP Sustainable Europe C EUR 2	3.15	1.17	71.00%
GVC Gaesco Europa, FI	5.49	1.79	73.00%
Thematics Europe Selection RC	2.53	0.93	65.00%
Templeton Eastern Europe A (acc) EUR	17.20	0.23	7.00%
Schroder ISF Emerging Europe A Acc EUR	16.75	0.32	13.00%
NESTOR Europa Fonds B	4.38	1.36	65.00%
Lyxor Index Fund Euro	0.07	1.00	100.00%
Xtrackers Stoxx Europe 600 UCITS ETF 1C	1.19	1.10	94.00%
SPDR MSCI Europe Small Cap UCITS ETF	0.04	1.00	100.00%
Deka MSCI Europe MC UCITS ETF	1.18	0.86	96.00%
Vanguard FTSE Developed Europe UCITS ETF	0.12	1.01	100.00%
AXA Indice Euro C	0.12	1.00	100.00%

As we have mentioned fund characteristics, strategy and investment approaches play a heavy role in determining the overall costs that investors must pay. When analysing both our tables we can notice funds with a higher tracking error tend to have significantly higher fees and this is due to the fact these high tracking error funds are extremely active in their investment strategy. The average initial charge of our selected active funds is 3.58% while the average initial charge of our selected passive funds is 1%. With that we can determine to simply invest into an active fund it would initially on average be 2.8% more costly than investing into a

passive fund. When we discuss the total expense ratio of our selected investment funds, we can see that the average TER of the active funds is 2.26% while the average TER of the passive funds is at 0.4%. This supports our previous points in the literature review that suggests active funds require higher fees due to the extra analysis and trading taking place while passive funds who in general replicate the index do not need to charge fees as high as active funds due to less analysis and transactions taking place in their investment strategy style. When looking at the characteristics of my chosen active management funds a lot of them operate within emerging European market rather than established developed markets which means there is more risk and volatility that can be experienced within their respective market which could also lead to an increase in the fees and costs charged to investors. The reason the chosen active funds tend to operate within these emerging markets its due to more market inefficiencies which explains the extremely aggressive investment strategy which can be seen in the tracking error figures of Templeton Eastern Europe A (acc) EUR (17.20) and Schroder ISF Emerging Europe A Acc EUR (16.75).

Now when we look at Table 2 can notice a correlation between the higher fees and higher tracking error. When we specifically look at our active funds, we can notice that Thematics Europe Selection RC and iMGP Sustainable Europe C EUR 2 have a tracking error between 2-4% and also have an R^2 significantly higher than the other active funds. This would indicate that these funds are closet indexers suggesting that they are active funds that behave like passive funds. When analysing the Beta of these closet indexers we can notice that they are lot closer to 1 then the other active funds. Now when we look at the other active funds, they are true active investment funds and in fact extremely aggressive active funds as mentioned before when considering there tracking error but when we look at there R^2 they are below 70% unlike the closet indexers and specifically when we look at Templeton Eastern Europe A (acc) EUR and Schroder ISF Emerging Europe A Acc EUR they have an R^2 below 10% meaning they do not follow the movement of the benchmark whatsoever.

As expected from our literature review the TE of our passive funds would be between 0-2% with the average TE of our passive funds being 0.45. The beta of these passive funds are extremely close to one with the funds such as Lyxor Index Fund Euro, SPDR MSCI Europe Small Cap UCITS ETF, Vanguard FTSE Developed Europe UCITS ETF and AXA Indice Euro C having a Beta of 1 and an R^2 of 100% which means that all movements within the investment funds are explained by movement in the index which means that they are fully replicating the

index. While the other funds are not fully replicating the index they have a TE between 94%-100% which almost full index replication.

In essence we can clearly distinguish between the active and passive funds and notice the specific characteristics of the funds through analysing these specific performance statistics. As it stands, we have active funds with high fees, high tracking errors and a low R2 ratio. Now at this moment we have only distinguished the investment funds now we must compare the returns to see if the high fees charged are justified and if closet indexers are essentially a scam. We can also now determine whether emerging markets, small-cap, mid-cap funds are more profitable when being actively managed.

9.2 General Returns of Investment funds

Table 3 (Returns) – Information Gathered from Refinitiv Eikon

Investment Fund	Cumulative Return		
	1 Year	3 Year	5 Year
iMGP Sustainable Europe C EUR 2	-0.72	-0.39	4.24
GVC Gaesco Europa, FI	4.69	10.64	6.50
Thematics Europe Selection RC	7.79	2.56	2.01
Templeton Eastern Europe A (acc) EUR	41.41	-16.17	-8.57
Schroder ISF Emerging Europe A Acc EUR	38.72	-14.89	-7.11
NESTOR Europa Fonds B	3.06	1.13	6.83
Lyxor Index Fund Euro	18.03	13.11	10.86
Xtrackers Stoxx Europe 600 UCITS ETF 1C	10.39	9.74	8.62
SPDR MSCI Europe Small Cap UCITS ETF	1.45	1.16	5.62
Deka MSCI Europe MC UCITS ETF	4.27	3.63	6.37
Vanguard FTSE Developed Europe UCITS ETF EUR D	10.86	10.08	8.63
AXA Indice Euro C	17.28	12.31	10.12

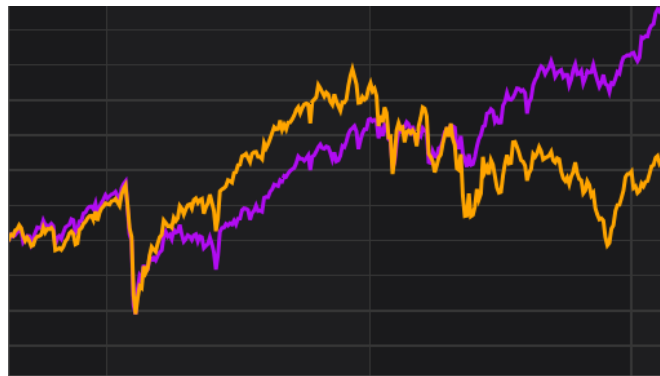
Here we have a general statistic showcasing the cumulative returns of all our selected investment funds. Regarding our active funds we can see that in general they tend to have years where their cumulative return is negative whereas for our passive funds, they all have positive cumulative returns. However, when we take into consideration our active funds with the highest tracking errors which is Templeton Eastern Europe A and Schroder ISF Emerging Europe, we can see in a one-year period they have the highest cumulative return at 41.41% and 38.72% which is significantly higher than any other investment fund. Within a five-year period, we can see that the level of cumulative returns for active funds generally begin to reduce suggesting that active portfolio management is not sufficient in the long-term. Out of our active funds two of the funds with the highest cumulative return in a five-year period are actually our closet

indexers with figures similar to our passive funds. The next thing we can notice with these figures is the volatility present within the active funds cumulative return. Passive funds tend to be far more stable and consistent in terms of return in the long term. Since in our overall statistics we are using a time frame of five years it is clear that in terms of return as expected from our literature review passive funds tend to perform better in the long term while active funds have potential to perform better in the short term and accumulate extremely high returns within a one-year period. Since these figures do not consider their benchmarks, I will provide the charts to show to true performance of these funds.

9.3 Investment Fund and their Benchmark Comparison

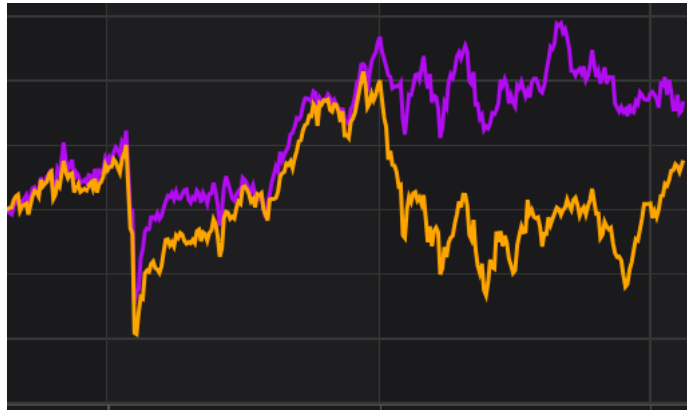
The source we are using to provide these charts is Refinitiv Eikon and to aid with the charts the orange line represents the investment fund, and the purple line represents the benchmark. The dates being used for these graphs are from the 31/December/2019 to the 29/December/2023. It is important to note that many of these investment funds have different indexes they follow however are all within the European market and all denominated within euro.

Chart 1: iMGP Sustainable Europe C EUR 2 Performance



(Source: Refinitiv Eikon)

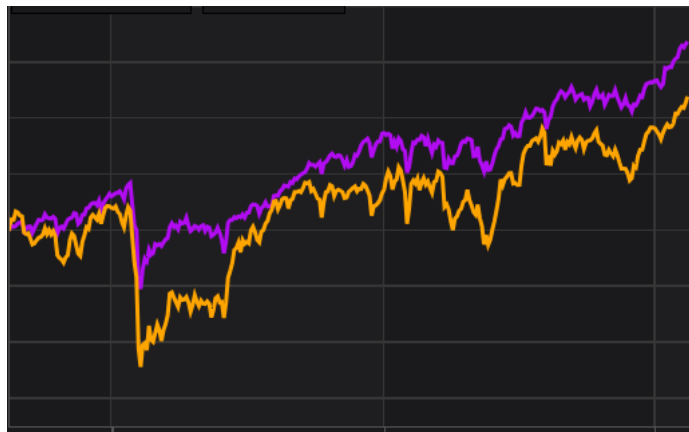
Chart 2: Thematics Europe Selection RC



(Source: Refinitiv Eikon)

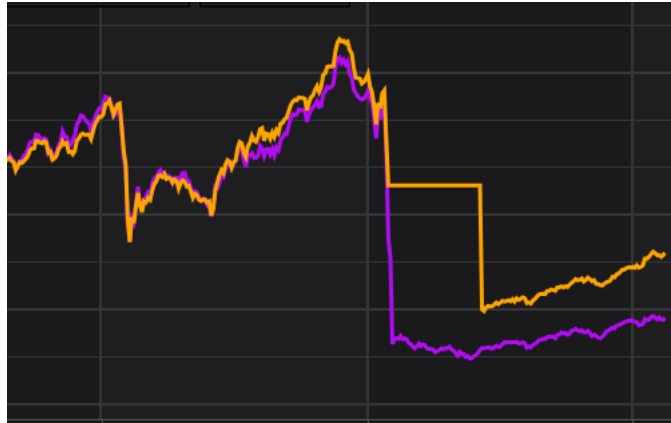
The first two graphics are our closet indexers. Referring back to our tracking error we can see that both had tracking errors between 65-70% which indicates they are somewhat active however their performance at times especially within a one-year and 3-year period is very similar to that off the benchmark. We can see that in a five-year period neither were able to outperform the benchmark. Now we will analyse our active funds with a tracking error above 4%.

(Chart 3: GVC Gaesco Europa, FI)



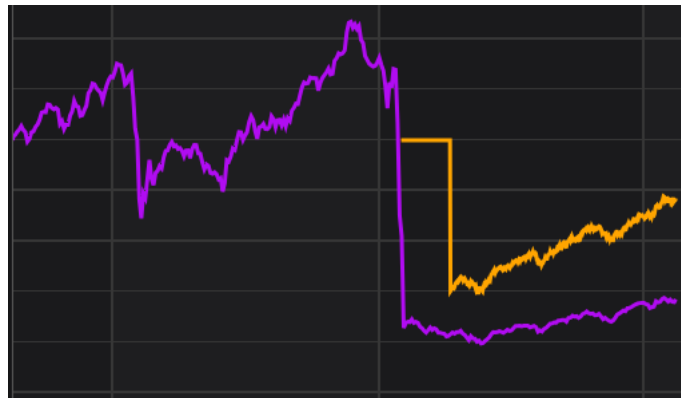
(Source: Refinitiv Eikon)

(Chart 4: Templeton Eastern Europe A (acc) EUR)



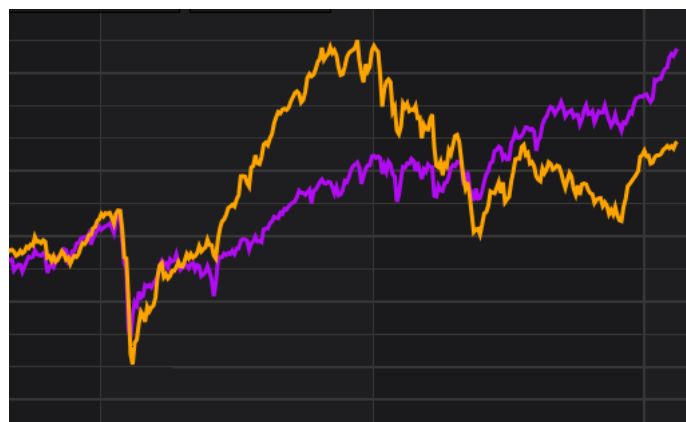
(Source: Refinitiv)

(Chart 5: Schroder ISF Emerging Europe A Acc EUR)



(Source: Refinitiv Eikon)

(Chart 6: NESTOR Europa Fonds B)

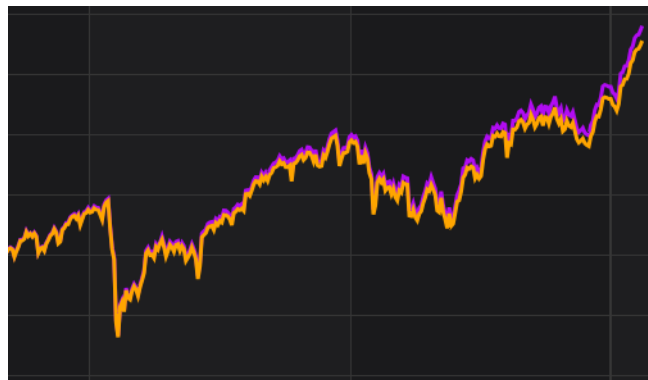


(Source: Refinitiv Eikon)

The previous four charts which we would consider as true actively managed funds show graphs much more representative image of the volatility of active funds and lack of assurance and risk that come with them as mentioned in our literature review. It is evident that these active funds generally perform well within the short-term period within these emerging markets in fact we could make the argument that markets tend to be inefficient even within the long term for emerging markets as funds such as Schroder ISF Emerging Europe A Acc EUR and Templeton Eastern Europe A (acc) EUR manage to outperform their index on a five year basis and when looking back at our literature review we discussed the market inefficiencies and higher opportunities to capitalise within emerging markets are extremely present and within these emerging markets it is clear that the active funds are significantly more lucrative for investors especially within the short term of one year to three years as proven in the graphs shown

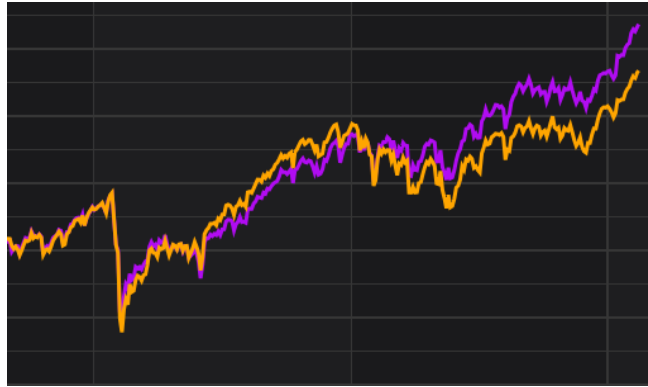
Now we can compare our passive funds with their respective benchmarks, and we should expect to see charts that are almost identical to the benchmarks and very little deviation from their respective benchmarks. Our selected passive funds have an R^2 of near to 100% so these graphs should be matching the benchmarks performance.

(Chart 7: Lyxor Index Fund Euro)



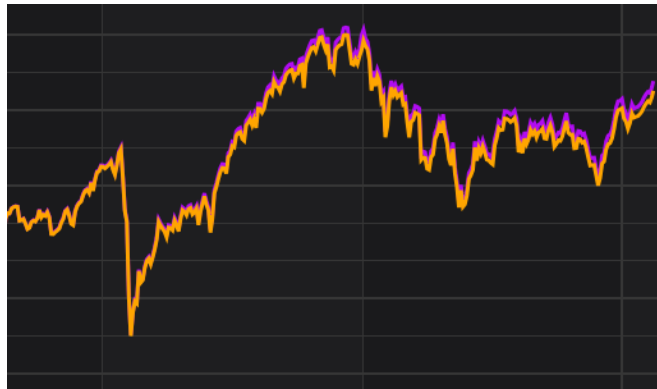
(Source: Refinitiv Eikon)

(Chart 8: Xtrackers Stoxx Europe 600 UCITS ETF 1C)



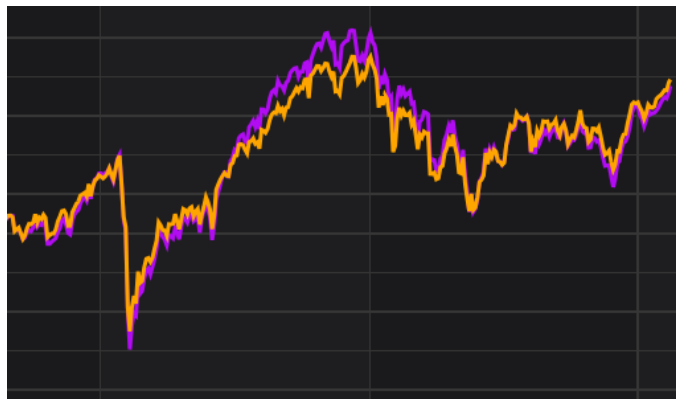
(Source: Refinitiv Eikon)

(Chart 9: SPDR MSCI Europe Small Cap UCITS ETF)



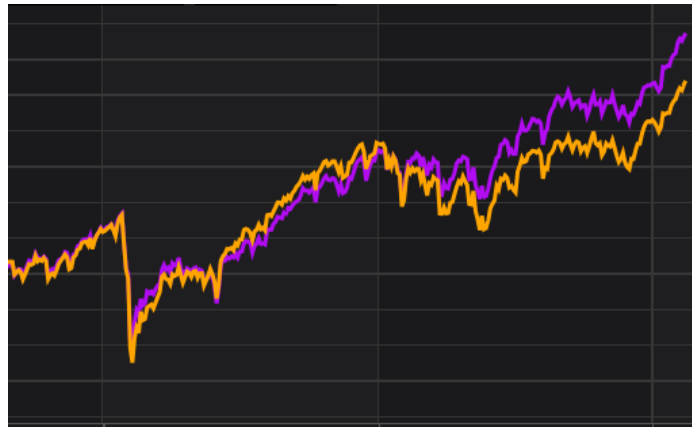
(Source: Refinitiv Eikon)

(Chart 10: Deka MSCI Europe MC UCITS ETF)



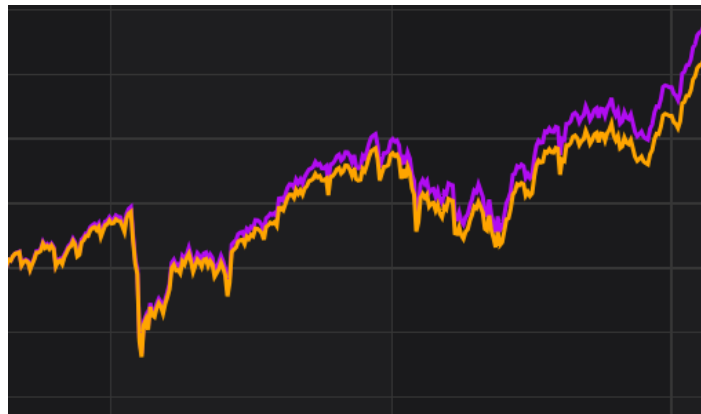
(Source: Refinitiv Eikon)

(Chart 11: Vanguard FTSE Developed Europe UCITS ETF EUR D)



(Source: Refinitiv Eikon)

(Chart 12: AXA Indice Euro C)



(Source: Refinitiv Eikon)

The passive funds are exactly what we would expect as they are extremely close to the benchmark which makes sense. So, our main concern with these graphs is the fact that there is no doubt at all that these passive funds which are using large cap indexes within Europe tend to easily outperform their active counterparts. Our literature review is proven right again when we consider the risk within these index funds. It is evident that there is no dip from these index funds from any benchmark. When investors look at this compared to our active fund graphs there is no doubt, we can identify extreme volatility which could be caused through higher risks and aggressive approaches.

Now that we have looked at the graphs compared to their benchmarks, we can analyse how these European investment funds perform compared to their relative risk. This is an essential part of our analysis because it is key to evaluate an investment funds performance on a fair and even playing field. At the moment it is evident that the main conclusions we can gauge from our graph analysis and returns analysis is that small and mid-cap markets (Emerging Markets) have extreme potential for active funds especially within the short term however their performance tends to dwindle after five years with some outliers which challenges the efficiency of markets in the long term.

9.4 Risk Adjusted Performance of Investment Funds

Table 4 (Risk Adjusted Performance (Alpha)) - – Information Gathered from Refinitiv Eikon

Investment Fund	Alpha		
	1 Year	3 Year	5 Year
iMGP Sustainable Europe C EUR 2	-1.71	-1.54	-0.64
GVC Gaesco Europa, FI	-1.09	-0.78	-0.96
Thematics Europe Selection RC	0.68	-0.24	-0.17
Templeton Eastern Europe A (acc) EUR	1.43	-1.26	-0.42
Schroder ISF Emerging Europe A Acc EUR	1.00	-0.81	-0.12
NESTOR Europa Fonds B	-0.99	-1.32	-0.59
Lyxor Index Fund Euro	-0.07	-0.04	-0.05
Xtrackers Stoxx Europe 600 UCITS ETF 1C	-0.34	-0.47	-0.24
SPDR MSCI Europe Small Cap UCITS ETF	-0.04	-0.02	-0.03
Deka MSCI Europe MC UCITS ETF	0.17	0.18	0.09
Vanguard FTSE Developed Europe UCITS ETF EUR D	-0.05	-0.06	-0.05
AXA Indice Euro C	-0.12	-0.1	-0.1

Table 5 (Risk Adjusted Performance(Sharpe)) - – Information Gathered from Refinitiv Eikon

Investment Fund	Sharpe Ratio		
	1 Year	3 Year	5 Year
iMGP Sustainable Europe C EUR 2	-0.06	-0.02	0.05
GVC Gaesco Europa, FI	0.02	0.12	0.06
Thematics Europe Selection RC	0.08	0.02	0.03
Templeton Eastern Europe A (acc) EUR	0.70	-0.11	-0.06
Schroder ISF Emerging Europe A Acc EUR	0.54	-0.09	-0.05
NESTOR Europa Fonds B	-0.01	0.00	0.07
Lyxor Index Fund Euro	0.3	0.19	0.15
Xtrackers Stoxx Europe 600 UCITS ETF 1C	0.17	0.16	0.14
SPDR MSCI Europe Small Cap UCITS ETF	-0.04	0	0.07
Deka MSCI Europe MC UCITS ETF	0.01	0.04	0.09
Vanguard FTSE Developed Europe UCITS ETF EUR D	0.22	0.16	0.15
AXA Indice Euro C	0.28	0.18	0.14

The Sharpe ratio quantifies the extra return earned for each unit of risk taken. Therefore, a higher Sharpe ratio indicates more effective fund management in the past. It is independent of any specific market, making it possible to compare different funds using a standardized measure which is essential for our analysis as the investment funds selected are within Europe however with different benchmarks. The highest Sharpe Ratios within a one-year period can be found in active funds such as Templeton Eastern Europe A (acc) EUR and Schroder ISF Emerging Europe A Acc EUR and within the short-term it is evident that these European emerging market funds tend to perform at a high overall levels. Whereas on a three-year period the Sharpe Ratios for the majority of these active funds tend to decrease showing worsened performance. Within a five-year period, the active funds tend to be just about matching the benchmark and, in some cases, making losses. This is in contrast to our passive investment funds where their Sharpe ratio is extremely consistent throughout the five years. The average Sharpe Ratio of our active funds in a one-year period is **0.21**, in a three-year period is **-0.01**, and in a five-year period is **0.02**. The average Sharpe Ratio of our passive funds in a one-year period is **0.15**, in a three-year period is **0.12**, and in a five-year period is **0.12**. These averages show the volatility and dangers of active funds as it is evident that even though active funds generate more extra income in the short term it is not significantly higher than that of the passive funds and in general passive funds massively outperform active funds in the long term.

With regards to the Alpha, it is clear to see that within a one-year period the active funds have the greatest alpha in the short term and have relatively outperformed the passive funds at first glance however when we look at the three-year period there is an evident shift in the alpha as the majority of the active funds experience a large decrease in alpha while the passive funds alpha now begins to increase and move towards zero. Within a five-year period, the majority of passive funds have a greater alpha than the active funds which indicates to us within the long term the passive funds perform better relative to their risk than the active funds do however it is important to note the average alpha of the selected active funds is **-0.48** and for the passive funds is **0.09**. In a one year period the average alpha of the selected active funds is **-0.11** and for the passive funds is **-0.08** so even though we established that there were certain active funds that do outperform the benchmark and passive funds when we look at it in totality within the short term passive and active funds perform at extremely similar levels while in the long term the passive funds significantly outperform the active funds which goes against some of our

points within the literature review which suggest active funds perform better within the short term.

With the relative performance of these funds analysed there are some major points we have discovered overall. It is clear that there is a high potential for emerging market active funds to enjoy success within the short term however their long-term performances are extremely poor compared to a traditional passive fund. When we discussed the advantages of active funds within our literature review, we derived that active funds do tend to bring about more short-term gains however when analysing the average Sharpe Ratios and Alphas of our selected investment funds there is no significant difference between the two figures indicating to us Active funds may not be a better short term option.

9.5 Cost efficiency and effectiveness of Selected Investment Funds

The last part of our analysis will show the true returns on these investment funds through deriving the net return from a one-year period, three-year period, and five-year period. As mentioned in our literature review one of the biggest differentiators between active funds and passive funds are the fees therefore it is essential we take these fees into account with the returns of the investment funds. To calculate the net return of the investment funds we will simply just subtract the Total Expense Ratio from the Annualized Return. To calculate the annualized return, we have used the following formula $(1 + \text{Cumulative Return})^{1/n} - 1$ where n is the number of years.

Table 6 (Net Returns One Year Period) – Information Gathered from Refinitiv Eikon

Investment Fund	Annualized Return	TER	Net Return
iMGP Sustainable Europe C EUR 2	-0.72%	2.26%	-2.98%
Thematics Europe Selection RC	7.79%	1.68%	6.11%
GVC Gaesco Europa, FI	-1.80%	2.26%	-4.06%
Templeton Eastern Europe A (acc) EUR	41.41%	2.83%	38.58%
Schroder ISF Emerging Europe A Acc EUR	38.72%	1.88%	36.84%
NESTOR Europa Fonds B	-1.29%	2.26%	-3.55%
Lyxor Index Fund Euro	18.03%	0.52%	17.51%
Xtrackers Stoxx Europe 600 UCITS ETF 1C	17.54%	0.30%	17.24%
SPDR MSCI Europe Small Cap UCITS ETF	14.80%	0.45%	14.35%
Deka MSCI Europe MC UCITS ETF	15.29%	0.30%	14.99%
Vanguard FTSE Developed Europe UCITS ETF EUR D	10.86%	0.10%	10.76%
AXA Indice Euro C	11.38%	0.60%	10.78%

Table 7 (Net Return Three Year Period) – Information Gathered from Refinitiv Eikon

Fund Name	Annualized Return	TER	Net Return
iMGP Sustainable Europe C EUR 2	-0.13%	2.26%	-2.39%
Thematics Europe Selection RC	0.85%	1.68%	-0.83%
GVC Gaesco Europa, FI	0.35%	2.26%	-1.91%
Templeton Eastern Europe A (acc) EUR	-5.72%	2.83%	-8.55%
Schroder ISF Emerging Europe A Acc EUR	-5.25%	1.88%	-7.13%
NESTOR Europa Fonds B	-1.27%	2.26%	-3.53%
Lyxor Index Fund Euro	4.20%	0.52%	3.68%
Xtrackers Stoxx Europe 600 UCITS ETF 1C	3.95%	0.30%	3.65%
SPDR MSCI Europe Small Cap UCITS ETF	3.11%	0.45%	2.66%
Deka MSCI Europe MC UCITS ETF	3.26%	0.30%	2.96%
Vanguard FTSE Developed Europe UCITS ETF EUR D	3.25%	0.10%	3.15%
AXA Indice Euro C	3.08%	0.60%	2.48%

Table 8 (Net Return Five Year Period) – Information Gathered from Refinitiv Eikon

Fund Name	Annualized Return	TER	Net Return
iMGP Sustainable Europe C EUR 2	0.83%	2.26%	-1.43%
Thematics Europe Selection RC	0.40%	1.68%	-1.28%
GVC Gaesco Europa, FI	1.27%	2.26%	-0.99%
Templeton Eastern Europe A (acc) EUR	-1.78%	2.83%	-4.61%
Schroder ISF Emerging Europe A Acc EUR	-1.46%	1.88%	-3.34%
NESTOR Europa Fonds B	1.33%	2.26%	-0.93%
Lyxor Index Fund Euro	2.09%	0.52%	1.57%
Xtrackers Stoxx Europe 600 UCITS ETF 1C	1.87%	0.30%	1.57%
SPDR MSCI Europe Small Cap UCITS ETF	1.56%	0.45%	1.11%
Deka MSCI Europe MC UCITS ETF	1.67%	0.30%	1.37%
Vanguard FTSE Developed Europe UCITS ETF EUR D	1.67%	0.10%	1.57%
AXA Indice Euro C	1.73%	0.60%	1.13%

It is evident to see within a one-year period some of the highest performing funds in terms of net return would be Templeton Eastern Europe A (acc) EUR and Schroder ISF Emerging Europe A Acc EUR which are of course our selected active funds and due to this higher return within a one-year period the higher level of fees can be justified. However, once we start going past the one-year threshold we can see that in a three-year period all the selected investment funds have a negative net return while the passive funds have a positive net return, and this is the same case within the five-year period as well.

The long-term performance of our active funds showed underperformance in all aspects which reinforces our literature claim of Active funds performing poorly within the long run. The

passive funds on the other hand provide stability and greater returns overall in the long-term which also reinforces our points within the literature review.

10. Discussion

I will address the research objectives I have established after my literature review and derive my findings from my practical analysis just conducted.

Our first research objective was finding out whether Active European investment funds outperform their respective benchmarks within different timeframes. From our practical analysis it was evident that in general the European Active Investment funds were simply not able to outperform their benchmark. We had a mixture of extreme active investment funds such as Templeton Eastern Europe A (acc), EUR Schroder ISF Emerging Europe A Acc EUR and NESTOR Europa Fonds B with tracking errors over 4%. These active funds in general had strong performance within a one-year period with high net returns as well as high Sharpe ratios and alphas which measures performance relative to risk and excess earnings. There is no doubt that these extreme active funds do have potential to perform extremely well within the short term however when we look at the long-term performance of these funds it is evident that they are not stable, extremely volatile and in general end up severely underperforming from the benchmark. To derive a conclusion for this research objective I believe that it is evident that in totality active European funds do not tend to maintain their short-term performance and eventually will be beaten by the benchmark.

Our second research objective was to find out whether these active funds outperform their passive counterparts within these European markets. When we look at our practical analysis it is evident that active funds do not outperform passive funds within the short term and the long terms. Within our literature review we had assumed that active funds produce higher returns within the short term however in our practical analysis we seen that the average Sharpe Ratio of our passive funds were essentially no different to the average Sharpe Ratios of our Active funds with active funds only boasting a higher Sharpe Ratio by **0.05**. In terms of Alpha the difference between the average of the passive funds and active funds is only **0.03**. Therefore, we can conclude that active funds are not a better option than passive funds within the short term as they practically perform the same relative to their benchmarks. When we analyse the long-term performance of both active and passive funds within the European Market it is evident that passive funds significantly outperform active funds as the average Sharpe Ratio for the selected Passive Funds are **0.12** while the average Sharpe Ratio for our active funds is **0.02**. We must also consider the net returns of these investments funds which consider the fees. Within the long-term all our selected European active funds boast a negative investment fund

while our passive funds have a positive net return therefore, we can conclude that active European investment funds do not perform better than passive funds in the short-term or long-term. The risk is too high, volatility is too strong, and the fees charged in the end are not worth it and in fact diminish any returns the active fund could have possibly made.

Our third objective is to see whether our actively managed European Emerging Market investment funds tend to outperform the benchmark. I believe this is an area where Active funds can be extremely profitable, and this was discussed in our literature review and confirmed within my practical analysis. The two extreme active funds within our practical analysis which operated within the emerging European Market were Templeton Eastern Europe A (acc) EUR and Schroder ISF Emerging Europe A Acc EUR. These two funds had extremely high cumulative returns within the short term just as our literature review suggested and this is due to the fact that these emerging markets tend to be extremely inefficient within the short term hence there is chance for higher returns which these active funds managed to capitalize on. However, within the long term their return decreased significantly however there is no doubt that within these European emerging markets the active funds tend to significantly outperform our passive funds within the short-term, but it is not sustainable for the long term hence we can conclude that the European Emerging Markets is an area of high potential for active investors and active funds however is extremely risky.

Our fourth objective was to show the viability of closet indexers. We identified these closet indexers through their tracking errors. These funds claim to be active funds however their tracking error suggests they are no different to passive funds. In our practical analysis the closet indexers we found were iMGP Sustainable Europe C EUR 2 and Thematics Europe Selection RC. These funds had tracking errors between 2%-3.5% while our true active funds were higher than 4%. From my practical analysis I have concluded that “Closet Indexers” are funds that all investors must avoid. The average total expense ratio of these two Closet Indexers is **1.97** while the average total expense ratio of the passive funds is **0.39**. The performance of these Closet Indexers is almost identical to benchmark and their tracking error indicates to us that they are following the movements of the benchmark. The reason investors must avoid these type of funds is because they practically do what passive index funds do while charging much higher fees which could almost be considered as a scam for investors.

Our fifth research objective is to determine whether the European Market is efficient. From our literature review we have defined a market to be efficient if prices reflect the available information which will result in investors and fund managers unable to beat the market. From our practical analysis which is analysing European funds within the last five years I believe that within the Short-Term the European Markets especially the Emerging Markets tend to be Inefficient, and this can be seen as we have two of our selected funds outperforming the benchmark within the first year. However, the European Market becomes less inefficient as within the long-term as in our practical analysis we can see that none of our selected active funds outperform the benchmark.

With all the previous research objectives being analysed it is time to answer our final two research objectives. Our main goal of this entire thesis was to establish what method of portfolio management is best within the European Market. When we consider all our analysis, I believe the optimal investment strategy and approach within the European market would be passive portfolio management. Our practical analysis has proven that passive funds outperform active funds within the long-term as well as the short-term. The biggest advantage the passive funds possess for investors would be the extremely low costs. These low costs allow for a stable and consistent net return while with active funds the fees are extremely high and the funds in the long-term generally underperform as proven in our analysis. Even within our Emerging Markets where active funds do generally have potential to perform well within the short term the long-term prospects are extremely poor and end up with negative net returns. Therefore, I would recommend investors to invest within passive funds within the European market rather than active funds as they are more stable and do not incur as many losses as the active funds do.

We have also heavily analysed the potential of investment funds within these emerging markets and as seen within our graphs it is evident that emerging markets tend to be far more volatile hence active funds have potential to perform well within that environment however it is clear that within the long term it is highly likely that high losses will be incurred. Emerging market funds tend to have higher fees due to the higher risk and this in combination with poor long-term performance would lead me to recommend that most investors stay within investing in Developed Europe indexes as there is a blanket of security, stability, and consistency. Overall, my ultimate recommendation would be to invest within passive index funds within the Developed European market for cautious investors and for investors who have higher risk tolerance I would recommend small-cap and mid-cap passive funds as there is high potential

for growth within these European market but elements of stability which can allow for higher growth in the long-term.

11. Conclusions and Limitations

Without doubt this thesis has given the solution which strongly supports my literature review. Passive management is proven to be the better option within the long term due to stability and lower costs/fees. The European market within our analysis has shown to be inefficient within the short term and efficient within a five-year period. When considering our emerging markets within Europe there is no doubt that there is high potential for our active funds however within the long term they tend to fail and underperform.

Even though I used as many tools and literature as I possibly could for my thesis, I do believe that there are not enough studies done specifically within the European market and in fact there were not that many truly active funds with a tracking error of 4% to choose from. This left me with limited data, and I could only derive my conclusions with the use of a small sample size. Within the future as I plan to further improve my knowledge within the financial world I believe I can make an ever stronger analysis of this age old debate between passive portfolio management and active portfolio management.

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