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ACTIVE VS. PASSIVE FUND PERFORMANCE IN EUROPEAN LISTED REAL ESTATE

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EXECUTIVE SUMMARY

Key Takeaways

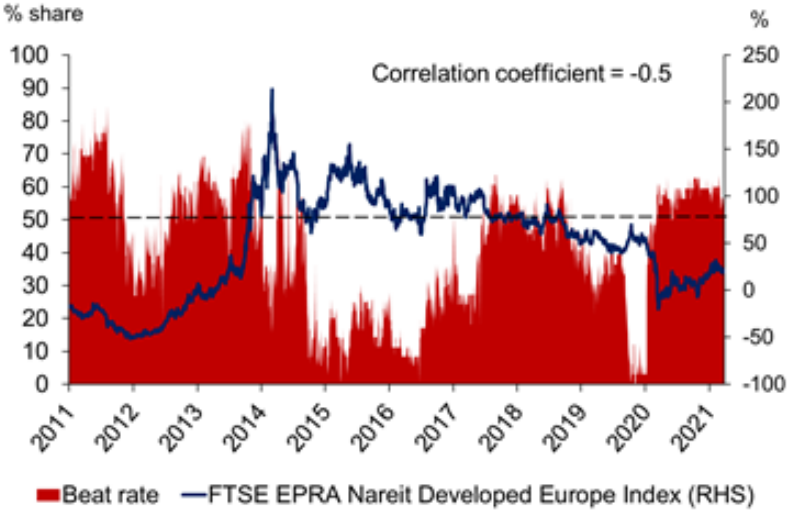
- **The success of low-cost passive funds has fuelled a heated debate about the future of active investing and whether active managers are able to justify their fees. This study contributes to that debate with an empirical analysis of fund performance in the European listed real estate market, contrasting the returns of active vs. passive funds.**

- **Our analysis and results reveal evidence that active management can generate superior returns in European listed real estate. Our results indicate that actively managed funds investing in this sector have produced annual returns net of fees that were, on average, 3.2% higher than their passively managed counterparts, after accounting for risk.**

- **Nevertheless, investors seeking to earn significant excess returns from actively managed funds still need to identify the 'top-performing managers' who are able to beat the market consistently. This necessitates significant fund manager due diligence and the flexibility to shift investment across active funds as opposed to following a buy-and-hold strategy within the same active fund.**

Our analysis and results reveal evidence that active management can generate superior returns in European listed real estate.

Real Estate Funds that beat the average passive fund, 5-year Risk-adjusted return



Source: Oxford Economics/Morningstar

Motivation for the research:

- Much of the empirical research on active vs. passive fund performance to date has focussed on the US market, with a common finding being that active strategies underperform market benchmarks after taking account of costs (management fees). While studies of non-US markets are less common, there is some evidence of cost-effective active management generating superior returns in markets that are under-researched and less efficient.

Just over a third (34%) of funds in our sample that survived across the past decade had average annual risk-adjusted returns in excess of the average passive fund.

- Real estate securities could be an asset class that lends itself to active management, as it is not well-covered by the analyst community (compared to broad equities) and the real estate sector is generally characterised by significant information asymmetries. But research on listed real estate fund performance is limited, with most studies focussing on REITs in the US market, for which results are mixed.

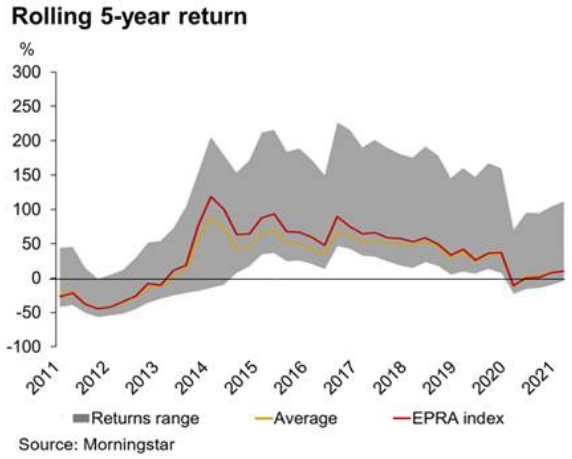
Research and analysis undertaken:

- We compiled a unique dataset of European listed real estate funds from Morningstar, with an extensive effort undertaken to classify, verify and clean the series. The final database for the analysis consisted of 114 funds, of which 93 were active and 21 passive funds (both open-ended index funds and exchange-traded funds), covering the period January 2006 to March 2021. This amounted to just over 11,000 observations.

- The analysis involved a review of the existing literature on the topic, comparative statistical analysis of returns and other key fund metrics, and finally the development of an empirical model to formally investigate relative performance of active and passive funds after controlling for a host of other unobserved factors (such as fund size or geographic exposure within Europe).

Main findings:

- *Initial descriptive analysis:* This analysis suggests that the average active fund does not appear to consistently outperform passive funds on a risk-adjusted basis, but there is a wide variation in performance across the sample. When viewed in terms of five-year returns, the variation in performance is also skewed to the upside – whilst the average fund performance may be close to the benchmark, certain funds appear to be generating substantial excess returns.



- *Share of active funds over-performing:* In order to more formally evaluate the share of active funds that consistently outperformed passive funds, we examined the sub-sample of funds that had survived[1] across the past decade (2011 – 2021) and compared their risk-adjusted performance to the average passive fund. Amongst the 35 active funds in this sub-sample, we found that just over a third (34%) had average annual risk-adjusted returns[2] that were in excess of the average passive fund.

- *Features of top-performing funds:* Comparison of the outperformers and underperformers in this sub-sample revealed little difference in the average tracking error, number of holdings or net expense ratio. However, the successful funds tended to be larger in size, which is consistent with the general observation that when funds perform well, they tend to attract additional investors and are able to expand their investment asset base.

- Outperformers also tended to follow 'growth' (rather than 'value') investment strategies. This finding is perhaps not so surprising given that growth investing has been a successful investment theme over the past decade. But profit upswings typically correlate with turning points for value investing, so this style could see a revival as economic activity picks up in the wake of the pandemic. Fund managers and investors must therefore remain agile and responsive to shifting economic and market conditions.

- *Econometric analysis:* We also conducted an econometric analysis to more formally evaluate the causal impact of active management on excess returns using a more complete sample of funds spanning the entire sample period (2006-21) while controlling for fund characteristics including risk. Our results indicate that active funds earn 3.2% p.a. higher returns on average relative to

[1] These are the subset of funds that survived the entire period from 2011-2021 without being merged or liquidated

[2] Using Sharpe ratios

passive funds over the long run. However, we find that active fund outperformance varies significantly over time, reflecting how performance can be influenced by luck as well as skill, especially over short time horizons.

- Digging deeper into the underlying drivers of active fund performance, we find that excess returns are positively related to tracking error (a measure of the degree of active management). Our results indicate that for every 1 percentage point increase in tracking error, active fund excess returns increase by 0.3%, on average. Putting this into perspective, tracking errors across all active funds in our sample range between 1.3% and 13.8%.

1. INTRODUCTION

One of the most debated issues in the investment world concerns the relative merits of active and passive investment management strategies. In simple terms, active strategies give portfolio managers the discretion to select securities with the objective of outperforming the wider market; conversely, passive strategies aim to match the market return, often tracking an index benchmark by holding a representative sample of its constituent assets. Although active managers have the potential to add value for investors in multiple ways, this typically comes with the trade-off of higher fees (reflecting the sustained efforts of investment advisers managing the portfolio), greater volatility (higher returns are often associated with increased risk) and less liquidity (managers may choose to invest in smaller, less liquid stocks if they have high growth potential).

Given that large and mid-cap equities in developed markets are so widely researched, it is particularly difficult for active managers to spot opportunities that others have missed across these broad investment universes. Indeed, a significant body of research finds that the average actively managed fund focussing on broad US or European equities does not outperform a passive investment strategy after taking account of differences in risk exposure and fees. On the other hand, there is some evidence to suggest that active managers have greater capacity to generate superior performance in areas of the market that are under-researched, such as smaller companies or emerging markets.

Real estate securities may be an asset class that lends itself to active management, as it is not well-covered by the analyst community (compared to broad equities) and the real estate sector is generally characterised by significant information asymmetries. With few previous studies having examined the market from this perspective, this study contributes to the debate by examining the relative performance of active and passive investment strategies in European listed real estate. The study was commissioned by the EPRA to provide an independent perspective of this research question and provide useful insights to asset managers and investors in Europe's rapidly growing listed real estate market.

The report is organized as follows:

- **Section 2** provides a brief review of the active-passive debate and relevant empirical literature.
- **Section 3** describes the unique European listed real estate dataset we created for this study and provides a comparative descriptive analysis of relevant fund performance metrics.
- **Section 4** introduces the empirical methods used to examine the fund data and presents the results of this analysis.
- **Section 5** presents a short conclusion

A bibliography and additional detail on methodology are presented in the Appendix.

2. BACKGROUND

2.1 OVERVIEW OF THE ACTIVE-PASSIVE DEBATE

The Stiglitz-Grossman paradox implies that the difference in returns between those who expend resources to gather information and those who do not will be greater in more inefficient markets.

Over the past few decades there has been a significant shift from active to passive investment strategies across the fund management industry. In the US, passive funds currently account for 41% of assets under management in long-term funds, having roughly doubled from 21% in 2010. In Europe, index-tracking funds currently account for around a fifth of the market, with this share also having doubled over the same period[3].

The strong growth in passive funds likely reflects the relatively low cost of passive investments, together with evidence of underperformance of many actively managed funds. For example, S&P Global (2020) report that just over a third (37%) of European-focussed active equity funds underperformed the benchmark S&P Europe 350 index in 2020, but this share rises to three quarters when viewed over a five-year timeframe and 86% over ten years.

The failure of most active funds to generate sustainable alpha (abnormal returns) over long time periods appears consistent with the Efficient Markets Hypothesis. Developed in the 1960s, the theory states that asset prices should reflect all available information. A direct implication is that it is impossible to "beat the market" consistently on a risk-adjusted basis, as market prices should only react to new information. Any individual fund's outperformance therefore reflects mostly luck rather than manager skill.

But perfect efficiency is an unrealistic benchmark that is unlikely to hold in practice. As argued by Stiglitz and Grossman (1980), information is costly, so prices cannot perfectly reflect all the information that is available, as otherwise there would be no reason for anyone to collect information and trade assets. The Stiglitz-Grossman paradox implies that the difference in returns between those who expend resources to gather information and those who do not will be greater in more inefficient markets. This suggests that alpha generation may be more achievable in areas of the market that are under-researched.

Building on this theme, David Swansen (2000), the Chief Investment Officer for the Yale University Endowment, suggests there are major differences in efficiencies across asset classes. His highly influential book, *Pioneering Portfolio Management*, argues that there is limited scope for outperformance in very liquid markets such as the S&P 500; but **investors with long horizons and sufficient resources can obtain superior performance by careful selection of managers in alternative asset classes, such as private equity, venture capital and real estate.** Supporting this theory, Swensen notes that the dispersion in manager performance for these markets is much higher than for others. The approach worked well for the two decades after Swensen took over as manager of Yale's

[3] https://www.ft.com/content/0b5325da-585f-41ad-8267-0741e9693a7a

endowment in 1985 — with a 16.1% annualized return compared with 12.3% for the S&P 500[4].

In the next section we review the available empirical evidence on the relative performance of active and passive investment strategies.

2.2 LITERATURE REVIEW

One popular hypothesis is that investors are willing to tolerate underperformance because active funds outperform in recessions when investors' marginal utility of wealth is highest.

Much of the empirical research on active vs. passive fund performance has focussed on US equity mutual funds, mainly due to data availability. Relative to US equity data, the available data on actively managed positions in non-US equities are quite sparse.

A common finding from studies of US equity mutual funds is that active strategies outperform or match market benchmarks on a gross basis but underperform after taking account of fees. For example, using a data sample spanning 1962-2006, Fama and French (2010) find that active management adds around 30 basis points to annual gross returns, although this is not found to be statistically significant. After accounting for fees, however, they find that active mutual funds *underperform* their benchmark by 85 basis points on average each year. This finding is also supported by the earlier study by Wermers (2000), who finds that mutual funds outperform the S&P 500 on a gross basis but underperform on a net-of-fees basis.

One popular hypothesis is that investors are willing to tolerate underperformance because active funds outperform in in recessions when investors' marginal utility of wealth is highest. Kosowski (2011) analyses the period from 1962 to 2005 and finds evidence in favour of this argument, but a recent study by Pastor and Vorsatz (2020) focussing on the COVID-19 crisis finds that the average active fund underperformed passive benchmarks during this period, albeit with substantial heterogeneity across funds.

An interesting alternative approach to the debate asks whether active management should be entirely rejected when constructing a portfolio. Baks *et. al.* (2001) consider the issue from the perspective of an investor choosing from a risk-free asset, passively managed index funds and actively managed mutual funds. They show that **zero investment in active managers can only be supported by extreme scepticism about the probability of manager skill, implying that virtually all investors would use at least some active management.**

Indeed, findings in the literature regarding the average underperformance of active funds does not preclude the existence of skill amongst a subset of managers. For example, Cremers and Petajisto (2009) examine the "active share" of fund managers and find that those with a higher active share generate stronger positive performance. More recently, Anton *et. al.* (2021) examine the largest holdings of active managers to identify stocks where managers have the greatest conviction

[4] https://hbr.org/2010/04/why-the-yale-model-of-investin.html

and find that these stocks outperform the market. They argue that investors would benefit if managers held more concentrated portfolios.

Focussing on possible sources of managerial skill, Kacperczyk and Seru (2007) find that managers who rely less on public information have better performance. And Baker *et. al.* (2010) find evidence that mutual fund trades forecast earnings surprises, concluding that mutual fund managers are able to trade profitably in part because they are able to forecast earnings-related fundamentals.

A number of studies have also found evidence of superior returns for active managers in markets with lower efficiency and thus greater opportunities for arbitrage. For example, Dyck *et. al.* (2013) support the benefits of active investing in emerging markets, showing net-of-cost outperformance of 251 basis points per year relative to passive strategies.

Meanwhile, research on real estate funds has been rare and results are mixed regarding the performance of active managers. While Rodriguez (2007) and Lin and Yung (2004) find no evidence in US data of manager skill in Real Estate Investment Trust (REIT) mutual funds, this contrasts with the findings of Gallo *et. al.* (2000) for an earlier period. Similarly, Cici *et. al.* (2011) find that REIT mutual fund managers can generate significant positive alpha, but Chou and Hardin (2014) find that real estate mutual fund returns generally match benchmark returns after expenses.

These previous empirical studies of listed real estate have all focussed on the US market. The remainder of this study helps to address the lack of evidence on non-US listed real estate by shifting the focus to European listed real estate.

3. OVERVIEW OF FUND PERFORMANCE IN EUROPEAN LISTED REAL ESTATE

This section of the report introduces the unique dataset used for the study, compares active and passive performance metrics, and examines how the characteristics of active and passive funds have changed over time.

3.1 FUND DATA

The primary research question evaluated in this report concerns the relative impact of active and passive investment strategies on investor returns in the European listed real estate market. In order to perform our analysis, a dataset of equity-only funds was gathered from Morningstar, with an extensive effort undertaken to classify, verify and clean the series.

The study is based on a unique dataset of funds with over 70% exposure to listed real estate and over 90% of assets invested in European equities.

The list of funds in our sample was initially compiled using the Morningstar categories of 'Property Indirect Europe[5]' and 'Property Indirect Eurozone'. As the objective of the study is to compare the performance of funds that primarily invest in European listed real estate, the sample was further refined to include only funds with over 70% exposure to listed real estate and over 90% of assets invested in European equities. This helps to ensure that differences in performance between funds are not explained by geographical differences in their investments. The composition of each fund in the sample was examined to ensure they meet these criteria, with any funds that fell outside these parameters excluded from the sample. Most funds in the sample followed the FTSE EPRA Nareit Developed Europe or Eurozone index – a few funds with alternative benchmarks that deviated widely from these indices were also excluded from the sample to ensure performance could be measured against a consistent benchmark.

The initial dataset also represented individual funds multiple times according to different share types. These fund classes indicate the type and number of fees charged for the shares in a fund. In order to avoid overrepresenting certain funds in the sample we included only the primary share class data.

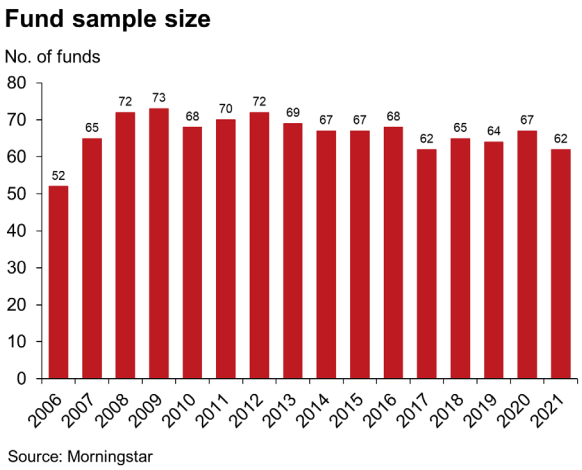
All funds were considered, regardless of whether they survived the sample period or not. This helps to reduce the potential impact of survivorship bias in the sample, which can overstate good performance and understate bad outcomes. This potential bias occurs because the most common reason to liquidate or merge a fund is underperformance.

The final database for the analysis consisted of 114 funds, of which 93 were active and 21 passive funds (both open-ended index funds and exchange-traded funds),

[5] Morningstar Property Indirect Europe: Property Indirect Europe funds invest principally in the securities of European real-estate companies, including those of real-estate investment trusts (REITs). Funds in this category may hold a portion of their assets in direct 'bricks and mortar property', but this will typically not exceed 30% of the total. These funds invest at least 70% of their total assets in equities, at least 50% of equity assets in real-estate securities, with at least 75% of equity assets invested in Europe.

covering the period January 2006 to March 2021. The chart below shows how the number of funds in the sample varies over time.

Fig. 1: Number of funds in the sample over time



Source: Morningstar

Several key fund characteristics including fund size, expense ratios, holdings, risk and tracking error were analysed whilst comparing active and passive fund returns.

We extracted data on fund returns (net of fees) as well as fundamental characteristics of the funds. These included:

- *Fund size:* The total amount of money managed across share classes of a given fund in millions of Euros.
- *Net expense ratio:* The percentage of fund assets used to pay for operating expenses and management fees, including 12b-1 fees, administrative fees, and all other asset-based costs incurred by the fund, except brokerage costs.
- *Number of stock holdings:* Number of holdings in a fund investment portfolio.
- *Morningstar Risk:* An annualized measure of the funds volatility in percentage terms.
- *Tracking error (relative to the relevant benchmark index):* Measures the volatility of excess returns relative to a benchmark, in percentage terms.
- *Price to book ratio (P/B ratio):* The weighted average of the price/book ratios of all the stocks in a portfolio. The P/B ratio of a company is calculated by dividing the market price of its stock by the company's per-share book value.
- *Price to earnings ratio (P/E ratio):* The weighted average of the price/earnings ratios of all the stocks in a portfolio. The P/E ratio is calculated as the current share price of a stock relative to its per-share earnings.

3.2 DESCRIPTIVE ANALYSIS OF ACTIVE AND PASSIVE RETURNS

We started our analysis by examining the returns of active and passive funds over time to compare and identify any patterns in relative performance.

Figure 2 presents average annual (net of fees) returns of active and passive funds over the full years 2006-2021. As may be expected, the correlation between passive fund returns and the benchmark index is high at 0.95, although not perfect. This tracking error can result from a number of factors:

There are a number of factors due to which passive funds do not perfectly track the benchmark index resulting in a small but persistent tracking error.

- Although passive funds seek to replicate index returns, they often do so using a representative sample of the most liquid stocks in the benchmark index, meaning that this replication is not perfect.
- Unlike indexes, passive funds also have some cash holdings due to the the time lag between receiving cash inflows and reinvesting it, which can again also cause variance in returns.
- Changes in index composition require the fund to follow suit, but this incurs transaction costs that lower returns.
- The treatment of dividend payments – both by the fund and the index benchmark – can also influence tracking errors.
- A passive fund tracking an international index may incur currency hedging costs. Interest rate differentials and market volatility can affect hedging costs.
- Our measure of passive fund returns is net of fees, which will weigh on returns (especially earlier in the sample, when the average fees for passive investing were relatively higher).

Focussing on the relative performance of active vs. passive funds, the table does show a (small) positive differential for active fund returns in most years. This outperformance is particularly strong during the financial crisis years of 2007-08, implying that active managers were able to successfully shift asset allocations to limit losses during this period of market stress. Outperformance also picks up in 2020, although the differential is fairly modest, suggesting that managers were less successful in timing the market and exploiting price dislocations during the COVID-19 crisis.

Fig. 2: Annual average total returns (net of fees)

Annual returns (%)				
Year	FTSE EPRA Nariet Dev Eur Index	Passive Funds*	Active Funds **	Active - Passive
2006	49.4	45.5	45.9	0.4
2007	-31.9	-33.0	-27.5	5.5
2008	-48.6	-48.8	-46.7	2.1
2009	36.1	33.2	34.3	1.2
2010	16.8	15.4	13.7	-1.7
2011	-9.4	-12.1	-12.8	-0.7
2012	28.7	28.3	23.7	-4.6
2013	11.2	11.3	9.1	-2.1
2014	25.7	23.6	22.5	-1.1
2015	18.8	17.8	17.3	-0.5
2016	-4.5	-5.3	-5.3	0.0
2017	13.4	12.4	13.6	1.2
2018	-7.7	-8.5	-6.5	2.0
2019	29.7	28.4	28.4	0.0
2020	-10.0	-11.0	-9.1	1.8

Note: Table e xcludes funds in the sample tracking the Eurozone index

* Based on a representative passive fund

**Average active fund returns are calculated on an equal-weighted basis

Also notable is the period between 2010-15 when active strategies consistently underperform passive funds, with the differential being especially stark in 2012-13.

It is unclear why average returns for the average active fund are so poor over this period, although it appears that managers were left behind by the strong rebound in the market in 2012 as the Eurozone crisis came to an end.

However, it is not sufficient to compare headline returns between funds without also taking account of their risk profiles. Risk-adjusted returns allow us to compare the performance of a high risk, high risk investment return with less risky and lower investment returns. As shown by Figure, 3, when viewed on this basis, average risk-adjusted returns of the active funds are very close to passive funds throughout the sample period. This implies, for example, that the relatively high headline returns of active funds achieved during 2007-08 were at the expense of increased risk exposure, whereas the underperformance of 2012-13 was compensated by lower overall risk.

Average risk-adjusted returns of the active funds appear very close to passive funds throughout the sample period.

Fig. 3: Relative performance – Risk-Adjusted Returns[6]

Risk-adjusted return (%)				
Year	FTSE EPRA Nariet Dev Eur Index	Passive Funds*	Active Funds	Active - Passive
2006	4.9	5.0	4.8	-0.2
2007	-2.4	-2.3	-2.4	0.0
2008	-2.4	-2.4	-2.4	0.0
2009	2.0	2.1	2.1	0.0
2010	2.3	2.4	2.1	-0.2
2011	-1.4	-1.5	-1.6	-0.1
2012	3.8	4.0	3.9	-0.1
2013	2.2	1.6	2.2	0.6
2014	4.3	4.3	4.2	-0.1
2015	4.6	4.1	4.1	0.0
2016	-1.5	-1.1	-1.3	-0.2
2017	3.4	3.6	3.2	-0.4
2018	-2.6	-2.6	-2.2	0.4
2019	5.3	5.5	5.2	-0.2
2020	-1.0	-0.9	-0.9	0.0

Note: Table e xcludes funds in the sample tracking the Eurozone index

* Based on a representative passive fund

**Average active fund returns are calculated on an equal-weighted basis

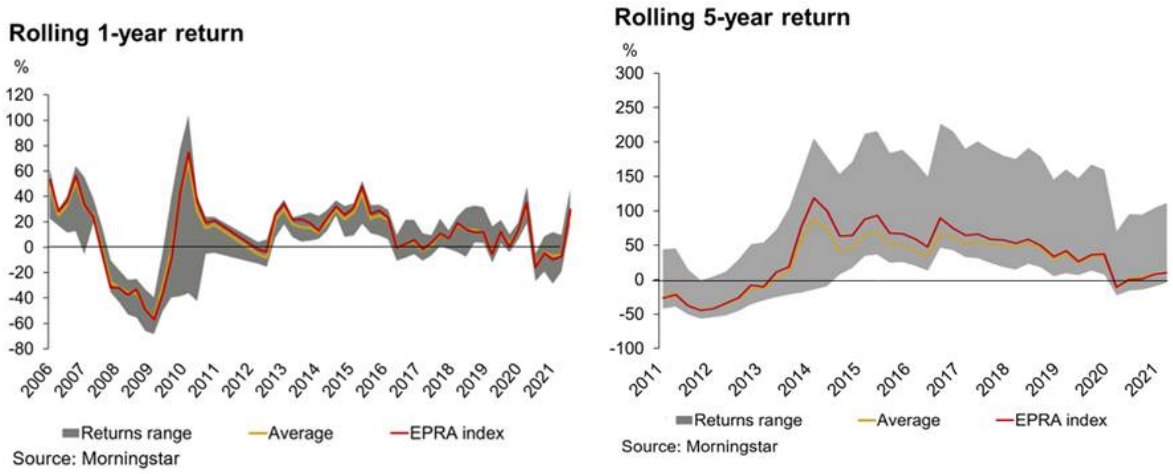
Although active funds on average do not appear to significantly outperform passive funds or their benchmark index, there is a wide variation in performance across funds in the sample. This is illustrated by the rolling return[7] charts in Figure 4, which examine the dispersion in returns over one-year and five-year horizons. The dispersion in performance is significantly larger when viewed across the five-year window, reflecting the compounding effect of persistent over/under performance on returns by a sub-sample of funds over time. It is also notable that the variation in performance is skewed to the upside – whilst the average fund performance may

[6] Risk-adjusted returns are calculated as: (Return – Risk Free Rate)/(Average standard deviation of returns) over the period

[7] Rolling returns are calculated for each month in our dataset based on the specified historic horizon.

be close to the benchmark, certain funds appear to be generating substantial excess returns.

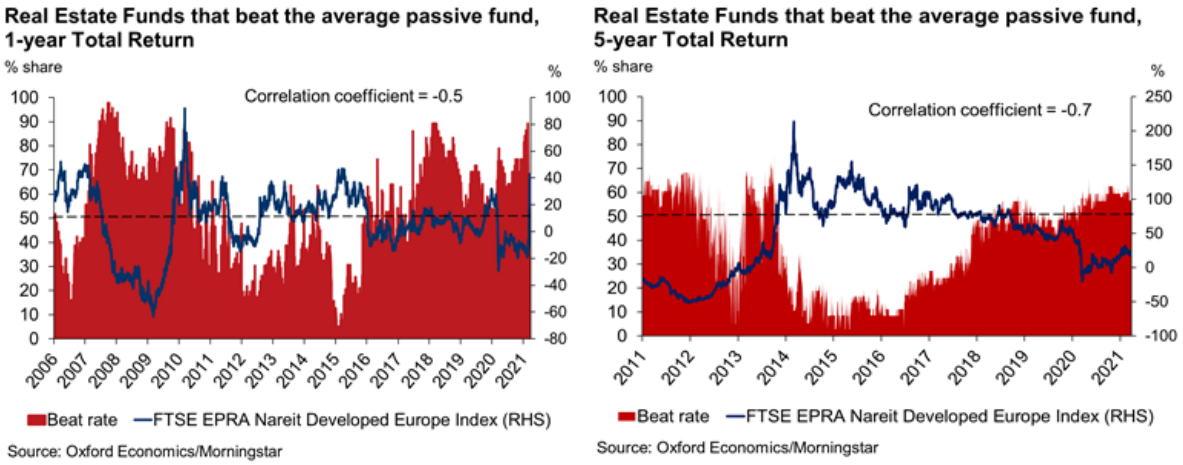
Fig. 4: Range of active fund returns



Although active funds on average do not appear to significantly outperform passive funds, there is a wide variation in performance across funds in the sample.

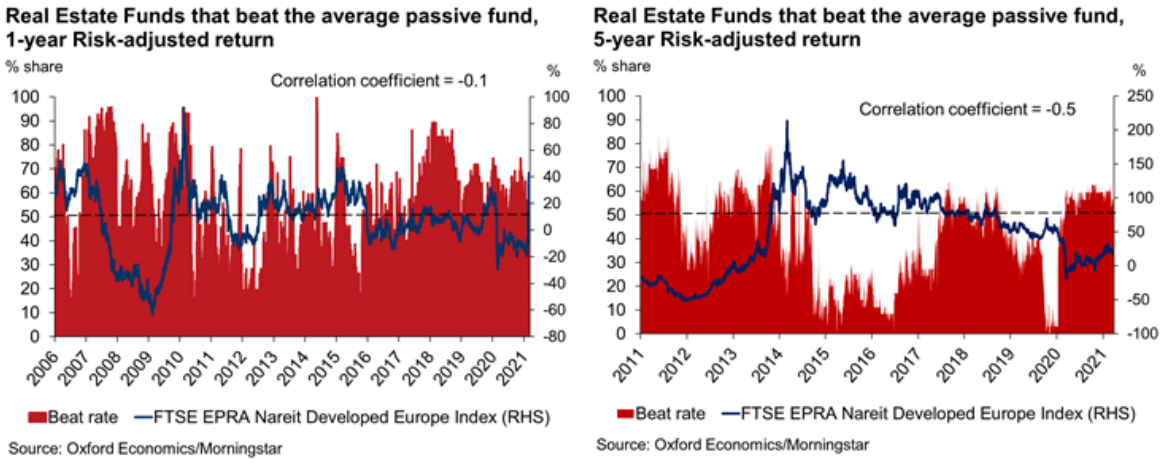
The dispersion in active fund performance can also be examined by calculating the "beat rate", i.e. the share of active funds that outperform the average passive fund. This metric is commonly used in fund management analysis to measure the success of active funds. Figure 5 again presents these calculations for rolling one-year and five-year returns. Not surprisingly, the beat rate is more volatile over a one-year timeframe, which is consistent with an element of luck in beating passive fund performance over a short time horizon. When viewed in terms of five-year returns, there appears to be a clearer trend of funds outperforming in the earlier years of the sample and also more recently. This does seem to imply that a lower share of funds successfully outperform when the market is rising strongly, as indicated by the negative correlation between share of active funds outperforming and total returns of the benchmark index.

Fig. 5: Share of active funds outperforming the average passive fund



Viewed on a risk-adjusted basis, Figure 6 shows that the share of active funds overperforming is more variable and the correlation with (risk adjusted) market returns is weaker. That said, there is still some evidence of a cycle in performance that is linked to market conditions, especially for five-year returns.

Fig. 6: Share of active funds outperforming the average passive fund



3.3 IDENTIFYING CONSISTENT OUTPERFORMERS

What share of active managers are able to persistently outperform the market? As a final test to more formally evaluate the share of active funds that consistently manage to outperform, we examined the sub-sample of funds that had survived across the past decade (2011 – 2021) and compared their risk-adjusted performance to the average passive fund. Amongst the 35 funds in this sub-sample, we found that just over a third (34%) had average annual risk-adjusted returns that were in excess of the average passive fund. A *t*-test was performed to validate this consistent outperformance at the 5% significance level.

Fig. 7: Share of active funds consistently outperforming passive funds

Period	2011-2021
Number of funds outperforming	12
Total number of funds in sample	35
Share of funds outperforming*	34.3%

*Outperformance tested for significance and validated at the 5% level using a t-test

We then examined the funds in this sub-sample to see if we could identify any common characteristics that investors could have used to identify top performing funds over the past decade. Comparing the 12 successful funds with the 23 funds that underperformed, we found little difference in the average tracking error, number of holdings or net expense ratio. However, the successful funds tended to be larger in size, with average AUM of €170m, close to double the average of €86m for the underperformers. This is consistent with the general observation that when funds perform well, they tend to attract additional investors and are able to expand their investment asset base.

We also looked in more detail at investment strategies by examining factsheets for the 35 funds in the sub-sample. These categorised the funds into three broad investment styles:

- **Value investing:** The fund manager seeks to invest in companies that are undervalued relative to the market.
- **Growth investing:** The fund manager seeks to invest in companies that are rapidly growing revenue, earnings and cash flow. These companies often appear overvalued based on traditional valuation metrics.
- **Blended funds:** The fund manager creates a diversified portfolio that invests in both growth and value stocks.

We found that amongst the 12 successful funds, over half (7 funds) followed a 'growth' strategy, with a third (4 funds) following a 'blended' investment style, but only one being a 'value' fund. In contrast, amongst the 25 underperformers, over half (14 funds) followed a blended investment style, while there were nine value funds and no growth funds. This implies that choosing a listed real estate fund with a growth strategy would have been the most reliable way to ensure outperformance over the past decade.

This finding is perhaps not so surprising given that growth investing has outperformed value in the broader equity market during this period. Over the past decade, the STOXX Europe growth index has returned 10.3% annually, while the STOXX value index has returned just 6.0%. In part, this may reflect the impact of low and falling real interest rates, which tend to benefit the prices of growth stocks relatively more than value stocks. Growth stocks are generally perceived to exhibit higher duration than value stocks, consistent with the explanation that a higher proportion of investor cash flows from growth stocks are expected in the more distant future. As such, they are more sensitive to changes in the discount rate used to value those future cash flows.

Although the outperformance of growth stocks has been a successful investment theme over the past decade, one consequence is that valuations of growth stocks are now stretched to levels that would normally foreshadow a style rotation towards value. Indeed, profit upswings typically correlate with turning points for value investing, so this style could see a revival as economic activity picks up in the wake of the pandemic. Fund managers and investors must therefore remain agile and responsive to shifting economic and market conditions.

These results indicate that achieving consistent outperformance through an active investment strategy may require careful fund manager due diligence and ongoing monitoring of fund performance. Investors should be prepared to switch away from underperforming managers rather than relying on an unresponsive 'buy and hold' investment strategy. In fact, it should also be noted that the 34% share of consistent outperformers probably overstates the manager success rate – while we provide a more robust test of outperformance than a simple 'beat rate' analysis, the 10-year sample is still likely to suffer from the problems of survivorship bias discussed in Section 3.1 (i.e. including only funds that survived for ten years in the sample will tend to overstate good performance, as poor performers are more likely to be liquidated and fail to survive the full ten years).

3.4 FUND CHARACTERISTICS

Some initial insight into why returns for the average active fund are so close to the benchmark may be gained by examining the degree of active management of funds in our sample. One measure of active management is the tracking error, which shows the fluctuation of returns of a portfolio relative to the fluctuation of returns of a reference index. Alford et al (2003) use tracking error to categories equity funds into three groups: "passive", "structured" and "active". They suggest that a passive fund can be defined as having an average tracking error of less than 1%[8], while a structured fund will display an average tracking error of between 1% and 5%. Structured funds are defined as funds where the active manager has tight controls on the extent of deviations from the benchmark. In contrast, a truly active fund will show a tracking error of between 5-15% over the full investment period.

Examining tracking errors, we find that only 43% of the funds in our sample are truly 'active funds' taking on a higher degree of portfolio management in search of excess returns.

Based on this criterion, over half (57%) of the active funds in our sample would be classified as 'structured funds' while only 43% are truly 'active funds' taking on a higher degree of portfolio management in search of excess returns. We examine the link between tracking error and outperformance of active funds in more detail in Section 4.

While tracking error provides one indicator of management style, it is also instructive to examine a broader range of characteristics of the funds in our sample. Figure 8 presents these descriptive statistics across the full sample period for both active and passive funds. It confirms that active and passive funds have

[8] The tracking error for passive funds in our sample may be larger than 1% due to the use of returns net of fees. It should also be noted that the estimates produced in Alford et. al. are based on the US equity market, where liquidity is high.

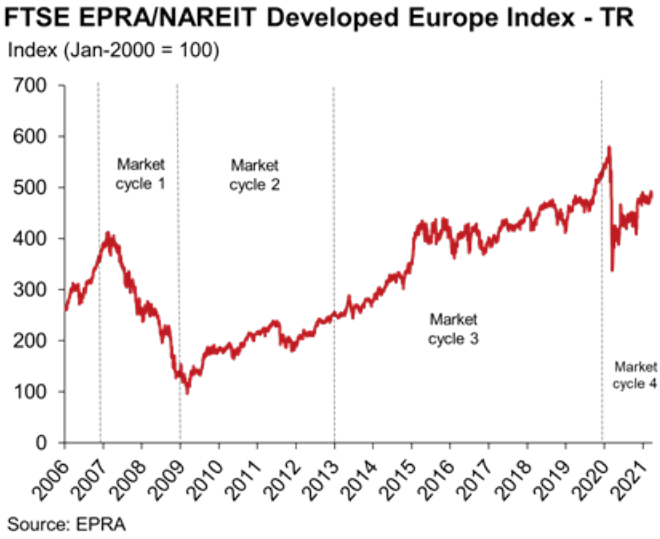
very similar returns on average, although active funds have slightly higher risk-adjusted returns (albeit with a fairly wide range). As one may expect, the average active fund has a lower number of holdings than the average passive fund, higher tracking error and a higher expense ratio. The average active fund also has higher assets under management.

Fig. 8: Key Descriptive Statistics[9]

Full sample				
	Passive	Active		
	Mean	Mean	*Min*	*Max*
Annual Return (%)	4.9	5.0	*2.3*	*8.1*
Risk-adjusted Return (%)	0.0	0.8	*-1.4*	*3.6*
Risk (%)	4.6	4.1	*2.2*	*5.2*
Fund Size (EUR mn)	169.5	126.2	*9.2*	*290.9*
Expense Ratio	0.5	1.9	*0.68*	*3.1*
Tracking error (%)	0.7	5.6	*1.30*	*13.8*
No. of holdings	50	39	*7*	*128*

It is likely that these descriptive statistics have shifted significantly over time across market cycles and with the maturing of the fund management industry in listed real estate. We therefore divided the sample into four sub-periods to assess relative performance over different cycles. As illustrated by Figure 9, these sub-periods correspond to the Global Financial Crisis (GFC), Post-GFC and Eurozone crisis years, post Eurozone Crisis years and the COVID-19 pandemic.

Fig. 9: Benchmark index and market cycles



[9] Given the homogenous nature of the passive funds on most metrics (except fund size), we present only the mean in the table.

Figure 10 below reveals a number of trends:

- Average returns for active and passive funds are quite similar across all the sub-periods, although there is a significant dispersion in returns of active funds, as noted previously. Average outperformance of active funds is most visible during the crisis periods of 2006-09 and 2020-21.
- Average assets under management for passive funds have increased sharply over time, while the size of active funds has remained fairly stable. This likely reflects the growth in popularity of passive investing in recent years.
- Average expense ratios for passive funds have declined over time, but they have remained fairly static for active funds. This has likely helped to encourage inflows to passive funds.

On average, active funds have lower holdings than passive funds, indicating a more selective approach to fund composition. Average holdings for passive funds have increased over time, however, reflecting the growth in number of stocks making up the FTSE EPRA Nareit Benchmark index.

Fig. 10: Key fund metrics – Sub-sample periods[10]

2006-09				
	Passive	Active		
	Mean	Mean	*Min*	*Max*
Annual Return (%)	-2.2	-2.4	*-10.2*	*1.0*
Risk-adjusted Return (%)	-7.5	-7.1	*-13.9*	*-3.8*
Risk (%)	5.3	4.5	*1.9*	*6.3*
Fund Size (EUR mn)	78.6	150.6	*6.8*	*683.0*
Expense Ratio	0.7	1.9	*0.68*	*3.5*
Tracking error (%)	0.8	6.9	*2.51*	*19.2*
No. of holdings	38	38	*7*	*70*
2010-12				
	Passive	Active		
	Mean	Mean	*Min*	*Max*
Annual Return (%)	12.5	11.1	*3.1*	*15.8*
Risk-adjusted Return (%)	5.6	4.3	*-5.0*	*8.8*
Risk (%)	7.4	6.8	*3.2*	*9.1*
Fund Size (EUR mn)	98.5	72.2	*3.6*	*514.3*
Expense Ratio	0.6	1.9	*1.13*	*3.2*
Tracking error (%)	0.8	5.2	*1.58*	*14.6*
No. of holdings	41	39	*9*	*71*
2013 - 2019				
	Passive	Active		
	Mean	Mean	*Min*	*Max*
Annual Return (%)	8.5	8.0	*4.4*	*12.9*
Risk-adjusted Return (%)	5.8	6.0	*2.7*	*10.5*
Risk (%)	2.2	2.0	*1.4*	*2.5*
Fund Size (EUR mn)	305.9	124.3	*4.6*	*549.9*
Expense Ratio	0.3	1.9	*0.71*	*2.5*
Tracking error (%)	0.7	3.7	*1.11*	*9.5*
No. of holdings	52	41	*7*	*135*
2020 - YTD 2021				
	Passive	Active		
	Mean	Mean	*Min*	*Max*
Annual Return (%)	-6.3	-3.6	*-16.6*	*7.9*
Risk-adjusted Return (%)	-13.4	-10.5	*-27.8*	*-0.3*
Risk (%)	7.2	6.7	*3.2*	*11.1*
Fund Size (EUR mn)	218.9	129.6	*2.9*	*719.4*
Expense Ratio	0.3	2.0	*1.49*	*2.5*
Tracking error (%)	0.2	5	*1.72*	*11.8*
No. of holdings	61	45	*25*	*173*

[10] The Mean, Min and Max are calculated by taking an average for a given fund over the relevant time period and comparing the averages across funds to arrive at the Mean, Min and max for each metric.

4. DOES ACTIVE MANAGEMENT ADD VALUE?

In this section, we undertake a more formal empirical analysis to analyse our research question of whether actively managed funds outperform passive funds after controlling for factors including risk and other potential drivers of returns.

4.1 ECONOMETRIC MODELLING RESULTS

Econometric modelling was used to evaluate the causal impact of active management on excess returns (net of fees). We used a panel regression to analyse drivers of excess returns in our sample of European listed real estate funds while controlling for a host of factors including risk level of the funds and other sources of heterogeneity that vary across funds and/or over time (such as fund size or geographic exposure within Europe)[11]. As such, this presents a more sophisticated approach to assessing relative fund performance as compared to simple metrics such as Sharpe ratios.

Actively managed funds produced returns net of fees that were, on average, 3.2% higher than their passively managed counterparts after controlling for risk and other factors.

The time horizon for the regression analysis was from January 2006 to March 2021. The sample period is sufficiently long to include more than one cycle in the European real estate market and wider economy, which should help to ensure that our findings are not skewed by any 'unusual' market conditions during a specific period. All funds were considered, regardless of whether they survived the sample period or not.

We first estimated a basic model with only a dummy variable to identify the active funds in our sample together with a control for risk as well as time and fund-specific dummy variables[12]. As shown in Figure 11, Model 1 indicates that that actively managed funds investing in European listed real estate produced returns net of fees that were, on average, 3.2% p.a. higher than their passively managed counterparts over the sample period (after adjusting for the aforementioned factors). This result is large in magnitude – when viewed over a ten-year timeframe, it implies that the average investor would achieve additional growth of 37%, taking into account the effects of compounding. The results also show that average excess returns increase with risk, as one would expect.

[11] More detail on the methodology is available in the Appendix.

[12] These time and fund dummies were included to control for unobserved or unmeasurable sources of heterogeneity.

Fig. 11: Regression results

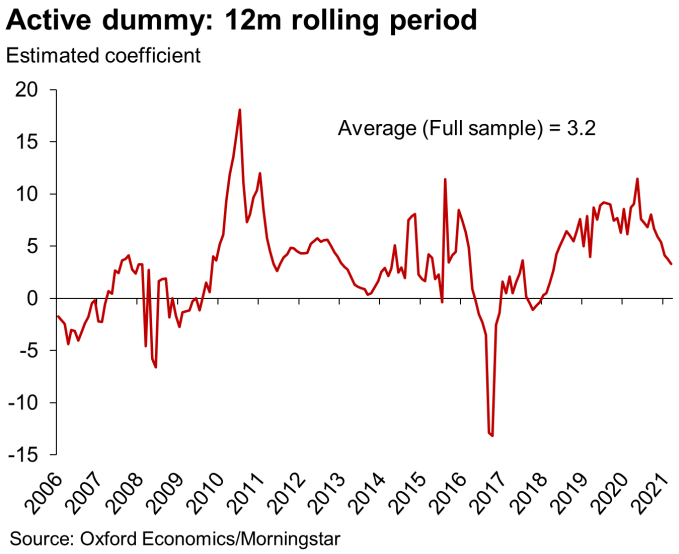
Panel regression Table (2006 - 2021)			
Dependent variable: 1-year Excess Returns (%)			
Independent variables	Model 1	Model 2	Model 3
Active dummy	3.23**	3.57**	1.95**
Risk	0.39**	0.41**	0.34**
Tracking error*Active dummy	-	-	0.30**
Time dummies	Yes	Yes	Yes
Fund dummies	Yes	Yes	Yes

** indicates the 5% significance level (Robust Standard errors)
Note: Model 1 and Model 3 are based on the entire sample of funds, Model 2 excludes active funds that didn't survive for at least 5-years

A common assumption of time series analysis is that the model parameters are time-invariant. In light of our earlier observations that active fund outperformance appears to vary across time, however, it is reasonable to question whether the coefficient on the active management dummy in our regression equation is stable across the sample period. One technique to assess the constancy of the model parameters is to compute the parameter estimates over a rolling window with a fixed sample size through the entire sample. Conducting this analysis with a 12-month window for Model 1, Figure 12 below shows how the coefficient on the active management dummy varies over time. It is perhaps not surprising to find that the active coefficient is fairly volatile, reflecting how performance can be influenced by luck as well as skill, especially over short time horizons (the average coefficient over the entire sample is 3.2, equivalent to our estimation results from Model 1 for the full sample period).

The active coefficient is fairly volatile, reflecting how performance can be influenced by luck as well as skill, especially over short time horizons.

Fig. 12: Model 1: Estimated coefficient on active dummy variable over time



Source: Oxford Economics/Morningstar

As discussed in Section 3.1, it is likely that short-lived active funds in the sample have inferior returns, as the most common reason to liquidate or merge a fund is underperformance. In order to check the influence of short-lived funds on the

average excess returns for all active funds, we re-estimated this equation only for the subset of active funds that survived for at least 5 years, with the results presented as Model 2. As expected, the coefficient on the active dummy is higher (3.6) than when we estimate the equation using the full sample, confirming that short-lived funds are dampening the average. However, the coefficient is not substantially different in magnitude, indicating that the results for the full sample are not being excessively skewed by the inclusion of short-lived funds.

We returned to using the full sample to dig deeper into the underlying drivers of active fund performance. Model 3 builds on Model 1 by also including tracking error (a measure of active management) only for the active funds in the sample. The aim is to disaggregate the influence of variations in tracking error across the active funds from the average excess return. Thus Model 3 is more flexible as it allows us to adjust for variation in tracking error among active firms. As shown in Figure 11, the results confirm that tracking error is positively correlated with excess returns for active funds, with a 1 percentage point increase in tracking error boosting average excess returns for the fund by 0.3%. Putting this into perspective, tracking errors across all active funds in our sample range between 1.3% and 13.8%.

A range of other explanatory variables were tested but were found not to be statistically significant. This may reflect the role of time dummies and fund dummies in the regression, which serve a proxy for unobserved time- and fund-specific factors. It may also reflect that variables such as P/E ratios and P/B ratios are less relevant for listed real estate, where net asset value is a more common valuation metric, as it relates stock values underlying real estate asset values. Unfortunately, this metric is not available in the Morningstar database, so could not be tested.

5. CONCLUSION

The empirical analysis presented in this report suggests a strong positive relationship between active management and superior risk-adjusted returns (net of fees) relative to passive management. Our results indicate that active funds on average earn 3.2% higher returns relative to passive funds over the long run. This result is consistent with the Stiglitz-Grossman observation that markets cannot be informationally efficient and the observation that the real estate sector is generally characterised by significant information asymmetries.

This finding is tempered by the observation that a significant portion of actively managed funds do not manage to outperform passive funds on a consistent basis. The challenge for an investor seeking to earn excess returns from actively managed funds is therefore to identify these ‘top-performing managers’ who are able to beat the market consistently. This necessitates significant fund manager due diligence and the flexibility to shift investment across active funds as opposed to following a buy-and-hold strategy.

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APPENDIX: METHODOLOGY

ECONOMETRIC MODELLING APPROACH

The basic panel regression equation used for our analysis has the following form:

$$Y_{it} = \alpha_0 + \beta_1(D_{1t}) + \epsilon_t$$

The dependent variable in the equation is excess returns net of fees (returns in excess of the benchmark index), α_0 is the intercept and D_i is a dummy variable indicating whether the fund is actively managed (where D_i =1 if actively managed). This regression essentially seeks to isolate the causal effect of active management on the excess returns of a fund.

Since this basic regression will suffer from omitted variable bias, we tested the significance of additional explanatory variables to control for other factors. The fund characteristics we evaluated included:

- **Fund size (AUM) and number of holdings:** these variables indicate the effect of scale and size on the performance of the fund and help investigate whether higher fund size and/ greater number of holdings erodes returns.

- **Net expense ratio:** The expense ratio of a fund is the cost of management fees per unit asset under management. A positive coefficient would indicate that managers are compensated for outperformance through higher fees, while a negative coefficient would indicate that high fees undermine returns.

Tracking error: Tracking error measures the volatility of the difference in returns of a fund compared to its benchmark. It can serve as a proxy for the degree of active fund management. The formula to calculate the tracking error is as follows:

Tracking error = $\sqrt{Var}(rp - rb)$

where r_p= Returns of the portfolio
r_b= Return of the benchmark index

We also considered using turnover as a measure of active management, but Morningstar data was incomplete.

- **Morningstar risk measure:** This is an annualised measure of a fund's volatility. Active manages may achieve higher returns at the expense of increased risk, so it is important to control for risk when comparing performance across funds.

- **Price-to-Earnings and Price-to-Book ratios:** P/E ratios and P/B ratios were also examined to control for any systematically different ways in which

funds invest in stocks based on these factors. To the extent that active strategies are found to outperform, this could help to explain how this is achieved.

- **Time dummies:** Time dummies were included to account for potentially unobservable factors that drive returns in specific years. For example, the relationship between active management and returns could be affected by the performance of the wider market, e.g. active funds may be more or less exposed to market downturns due to their lower diversification or better hedging strategies.

- **Fund dummies:** These are included to account for time invariant fund-specific characteristics such as fund size or geographic exposure within Europe.

Thus, the full estimation after controlling for the fund characteristics would be:

$$Y_{it} = \alpha_0 + \beta_1(D_i) + \beta_2(X_{1it}) + \ldots\ldots + \beta_x(X_{xit}) + \epsilon_t$$

where $X_1 \ldots\ldots X_x$ represent the various fund characteristics.

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