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Does Active Management Add Any Value?

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Abstract

The question as to whether active management adds any value above that of the funds investment policy is one of continual interest to investors. In order to investigate this issue in the UK real estate market we examine a number of related questions. First, how much return variability is explained by investment policy? Second, how similar are the policies across funds? Third, how much of a fund's return is determined by investment policy? Finally, how was this added value achieved?

Using data for 19 real estate funds we find that investment policy explains less than half of the variability in returns over time, nothing of the variation across funds and that more than 100% of a level of return is attributed to investment policy. The results also show UK real estate fund focus exclusively on trying to pick winners to add value and that in pursuit of active return fund mangers incur high tracking error risk, consequently, successful active management is very difficult to achieve. In addition, the results are dependent on the benchmark used to represent the investment policy of the fund. Nonetheless, active management can indeed add value to a real estate funds performance. This is the good news. The bad news is adding value is much more difficult to achieve than is generally accepted.

Keywords: *Investment Policy, Added Value, Real Estate Funds*

Does Active Management Add Any Value?

1. Introduction

The question as to whether active management adds any value above that of the funds investment policy is one of continual interest to investors. For instance, the influential study by Brinson, Hood, and Beebower (BHB) (1986) concludes that "investment policy dominates investment strategy (market tactical asset allocation and security selection), explaining an average of 93.6% of the variation in total plan returns." A sequel by Brinson, Singer, and Beebower (BSB) (1991) puts the figure at 91.5%. Blake et al (1999) also find that asset allocation decision accounts for most of the time series variation in pension portfolio returns in the UK. The success or failure of a fund over time is largely determined by how the assets were divided among the various asset classes rather than which securities were bought or sold. The results of these studies led some to deduce that active managers are not able to add any meaningful return and, as such, fund managers should be more focussed on the investment policy decision. A conclusion subject to much heated debate, see *inter alia*, Hensel et al (1991), Jahnke (1997), Surz et al (1999) and Ibbotson and Kaplan (2000).

Essentially, the controversy results from a misunderstanding of what the BHB/BSB studies were intended to examine and the results being applied to questions the studies were never intended to answer, Surz et al (1999) and Ibbotson and Kaplan (2000). The BHB/BSB studies were trying to examine how much of the *variability* in a typical pension funds return over time is explained by the investment policy decision of the fund. As Jahnke (1997) points out some have taken the BHB/BSB studies to mean that over 90% of a pension funds *return* is determined by the investment policy decision, which is clearly incorrect. What the BHB/BSB studies did not tell us is whether active management ended up benefiting or hurting investors. To answer that question, you need to use a different approach, and later studies did so.

In particular, Ibbotson and Kaplan (2000) studied three interrelated questions in order to examine the extent to which investment policy explains a fund's return. First, how much return *variability* is explained by investment policy, second how *similar* are the policies across funds and third how much of the *level* of returns is attributed to investment policy. Ibbotson and Kaplan (2000) concluding that investment policy explains 90% of the variability of a funds returns, only 40% across funds but 100% of the level of returns. Accordingly, there is no single answer as to what proportion of fund performance can be explained by asset allocation as it depends on the specific focus of the question being asked. These issues however have not been investigated in the real estate market. Thus, we follow the same approach as Ibbotson and Kaplan (2000) using quarterly return data for 19 real estate funds over the period 1994 to 2003. In addition, we ask a further question, what investment strategy UK real estate fund managers follow to add value?

Unlike to Ibbotson and Kaplan (2000) we find that investment policy explains less than half of the variability in returns over time, nothing of the variation across funds and more than 100% of a level of return due to investment policy. The results also show UK real estate fund focus exclusively on trying to pick winners to add value and that in pursuit of active return fund mangers incur high tracking error risk.

Consequently, successful active management is very difficult to achieve. In addition, the results are dependent on the benchmark used to represent the investment policy of the fund. Nonetheless, we conclude that active management can indeed add value.

The paper is structured as follows. The next section sets out the questions that need to be answered to discover whether active management can add value to real estate fund performance. Section 3 presents the data and discusses the construction of the fund's investment policy benchmarks against which active management is to be assessed. Section 4 presents answers to the questions set out in section 2. Section 5 concludes the paper.

2. Questions

We use three terms in this paper: investment policy, tactical asset allocation, and security selection. The BHB/BSB studies used the term "investment policy" to indicate the pension funds strategic asset allocation (i.e. their holdings in stocks, bonds, and cash). The investment policy of a fund is based on the long-term attitude the fund's managers to the trade-off between expected returns and risk. Consequently, although managers might change their investment policy if they revise their estimates of expected returns or risk, historically managers have been reluctant to greatly vary their allocations from period to period. Investment policy, therefore, is founded on an acceptance of current market valuations, not a challenge to them. In contrast, tactical asset allocation, or what BHB/BSB call "market timing", challenges current market valuations. It involves shifts in allocations, relative to the long-run investment policy, in an attempt to benefit from the divergence of current values from equilibrium levels. Here, the term 'tactical asset allocation' is used to indicate deviations from the investment policy allocation across the various segments of the UK real estate market[1]. Finally, security selection is used here as in the BHB/BSB study. It involves the selection of particular real estate investments from a market segment in the belief that the selected properties have higher values than others' in that same segment[2]. Investors who restrict themselves to the same investment policy are "passive" investors, while investors who deviate from their investment policy for tactical asset allocation or security selection reasons are "active" investors. Thus, the extent of active management can be measured by deviations from the fund's investment policy.

Following Ibbotson and Kaplan (2000), in order to estimate the added value due to active management relative to investment policy we need to answer a number of questions:

1. How much of the *variability* of returns across time is explained by policy?
2. How *similar* are the policies across funds?
3. How much of the *level* of returns is explained by investment policy?
4. How was this added value *achieved*?

Questions 1 to 3 have been the subject of a number of studies of pension funds and mutual funds, see *inter alia* Brinson et al (1986), Brinson et al (1991), Hensel et al

[1] The Investment Property Databank (IPD) in their standard performance analysis reports to investors call this activity "*structure*".
[2] IPD call this activity "*property*".

(1991), Jahnke (1997), Surz et al (1999) and Ibbotson and Kaplan (2000). However, neither of the questions has received any attention in the real estate market, while, only one study as examined this question in the real estate market and that was some time ago.

In order to answer questions 1, 2 and 3 we first need to decompose the total return (TR) for each fund into two components: (i) a policy or benchmark return (BR) and (ii) an active return (AR). Following Ibbotson and Kaplan (2000), the decomposition formula is as follows:

$$TR = (1+ BR)(1+ AR) \quad (1)$$

Where: TR = total return of the fund
BR = benchmark or policy return of the fund and
AR = active return of the fund

The BR is that part of the TR that results from the investment policy decision of the fund. AR constitutes the difference between what the fund has actually achieved and the benchmark return. These returns depend on the decisions taken by the asset manager in terms of over- or under-weighting various segments of the market, stock selection decision and the magnitude and timing of those decisions.

Question 1 was the subject of a comprehensive study by BHB (1986) with a follow up in BSB (1991). In the first study BHB examined the quarterly returns for 91 large US pension funds over the period from 1974-83 and in the second study 82 funds from 1978-87. The primary focus of both studies was to determine how much of the variability of each fund's actual return was explained by that fund's policy or benchmark return. Both studies did this by calculating the coefficient of determination (R^2) of the time-series of each funds total return (TR) against its investment policy or benchmark return (BR). BHB/BSB then examined the distribution of these results. In the first study the authors concluded that the average R^2 was 93.6% and in the second study 91.5%. Based on these results BHB/BSB concluded that more than 90% of the *variability* of a fund's return is explained by the benchmark or policy set for that fund. Results supported by subsequent studies by Hensel et al (1991); Surz et al (1999); Blake et al (1999) and Ibbotson and Kaplan (2000).

Question 2 looks to establish how closely funds follow their respective policies. Ibbotson and Kaplan (2001) emphasised that the BHB/BSB studies were often mistakenly interpreted as answering this question. By way of example, if all funds followed the same investment policy and each fund was managed exactly in accordance with that benchmark portfolio then all funds would be exactly the same. The cross-sectional coefficient of determination (R^2) would accordingly be 100%. The lower the similarity in investment policy and the more fund manager's deviate from their investment policy the lower the cross-sectional R^2. To examine this issue Ibbotson and Kaplan (2000) undertook a cross-sectional regression of the mutual or pension funds compound 10-year returns and the corresponding 10-year compound return for each fund's benchmark return. Ibbotson and Kaplan (2000) found that only 40% (35%) of the variability across mutual funds (pension funds) can be explained by policy, with the remaining 60% (65%) explained by difference in investment policy

and the degree to which funds engaged in active management strategies.

So to answer this second question, we run a cross-sectional regression of the funds compound returns against those of the benchmark. For each fund, the compounded total return over the sample period is:

$$\overline{\overline{TR}}_i = \sqrt[N]{(1+R_1)(1+R_2).....(1+R_{t-1})(1+R_t)} - 1 \qquad (2)$$

where: $\overline{\overline{TR}}$ is the geometric average total return of fund i, t denotes the number of periods (quarters), and N is the length of the sample. Similarly, we compute the policy or benchmark compounded total return over the same period as:

$$\overline{\overline{BR}}_i = \sqrt[N]{(1+BR_1)(1+BR_2).....(1+BR_{t-1})(1+BR_t)} - 1 \qquad (3)$$

where: $\overline{\overline{BR}}$ is the geometric average policy or benchmark return of fund i.

Question 3 looks to assess the level of each fund's total return that is explained by the fund's benchmark or investment policy return. As Surz et al (1999) passionately argue a high time-series R^2 merely indicates that a fund adhered very closely to its policy target and used broad diversification within asset classes. However, it tells nothing about the importance of asset allocation. If the fund managers have exactly followed their passive strategies, the ratio of policy return and fund return will be one. Accordingly, their focus is on measuring what percentage of the absolute level of a typical fund's return is attributable to asset allocation policy. To answer the third question, we calculate the ratio of average compound benchmark return $\overline{\overline{BR}}$, divided by average compound total return $\overline{\overline{TR}}$:

$$F = \overline{\overline{BR}} / \overline{\overline{TR}} \qquad (4)$$

where: F = fraction of return explained by policy;
$\overline{\overline{BR}}$ = benchmark or investment policy return; and
$\overline{\overline{TR}}$ = total return, policy return plus non-policy (i.e., active) return.

This ratio amounts to a measure of the degree to which value is added where, TR>BR and conversely where value is destroyed through BR>TR. Note that TR is by definition BR+AR, and that successful active management will cause F to be less than one. A *successful* manager will deliver a fraction *below* 100%. Thus, if a manager adds value, the fraction of return explained by policy decreases, with the balance explained by the amount of value added. This difference is the result of a combination of the investment policy decision, the tactical asset allocation and security selection decisions of the managers. Therefore, the value of this ratio allows a judgment about the quality of active management and/or timing strategies, i.e., whether they have added value. If managers diminish value, policy explains more than 100%, with the balance explained by the amount subtracted. While, if a manager neither adds nor reduces value, policy explains 100% of performance. Thus, the lower the ratio the higher the added value due to active management.

For example, BHB (1986) report that the average policy or benchmark return of the pension funds in their sample was 10.11% and the average total return was 9.01%. So the ratio is 10.11/9.01, or 112%. In other words, BHB find that, on average, active management detracts 1.10 percentage points from the return that would have been achieved if the fund had stuck to its benchmark weights. In other words, on average active management subtracted value. In contrast, Ibbotson and Kaplan (2000) find that on average investment policy explains approximately 100% of investment returns of mutual funds and pension funds. Surz et al (1999) report similar results. These results suggest that active management can offer very little to investors above that of investment policy. However, just because the average impact of investment policy is near 100% does not mean that active management is worthless, quite to the contrary. Ibbotson and Kaplan (2000) and Surz et al (1999) both show that there is a distribution of "% explained" across the funds in their studies, with roughly half exhibiting measures below 100% and half above 100%. In other words, half the managers added value through successful active management!

Question 4 tries to isolate what investment strategy real estate fund managers use to add value, i.e. is it mainly through tactical asset allocation or security selection. Some time ago one study has examined this question in the UK real estate (Key et al, 1996). This study examined the relative, or active returns, (the returns of the fund minus those of the benchmark portfolio) of funds similar to those studied here. Key et al, (1996) concluding that about half the active return can be attributed to tactical asset allocation (i.e. under- or over-weighting of market segments) and half is due to selection (the choice of properties). But, for a fund to be really successful (i.e. be in the top quartile of performance) the fund manager must be good at both aspects of active management. A manager who is only mildly successful at one aspect of active management the fund can easily sink into the bottom quartile.

3. Data and Benchmarks

Equations 1 and 2 require accurate estimates of the fund's total return and of the benchmark that most closely matches the fund's investment policy. Thus, an assessment of importance of asset allocation cannot be made operational without identifying the appropriate benchmark or policy return. However, while return data of real estate funds in the UK is easily obtained, benchmark, or investment policy, returns data is more difficult to estimate as there are a number of potential candidates, each with their own problems. Yet it is essential to find the right candidate since if the wrong benchmark is used it can lead to erroneous conclusions, since the difference between the fund's returns and its investment policy benchmark indicates both the extent to which the fund is engaging in active management and the success or failure of such activities.

The property fund data used in the study consisted of the quarterly returns for 19 tax-exempt open-ended real estate funds in the UK over the 9 years from 1994 Q4 to 2003 Q3. The data collected from the quarterly surveys produced by the IPD on behalf of the Hong Kong and Shanghai Bank (HSBC) and the Association of Property Unit Trusts (APUT). The data set is especially useful as the returns are calculated on a consistent basis by IPD and covers a long enough time period to make substantive conclusions.

Unfortunately, as Baum (1988) points out there are no 'one' index that adequately represents the 'real estate market'. Indeed, there are a number of market indices that trustees and consultants may use as benchmarks of performance, see Morrell (1991) for a comprehensive review. Of all of the indices that are available most practitioners view the IPD Monthly Index (IPDMI) as the de facto measure of performance of unitised funds in the UK (Society of Property Researchers, 1994). For reasons of simplicity and low cost some trustees may adopt this index as the fund's investment policy benchmark. But in the real world of active management, this index does not meet the quality requirement of an active benchmark (Bailey, 1992). By definition, active managers make bets on some portions of the real estate market and systematically exclude others. However, the IPDMI cannot be purchased. The index is a collection of property returns contributed by member firms and its composition changes over time. Secondly, there is no passive investment vehicle available that might be used to mimic the performance of the index. Thus, if active fund managers cannot bet against the performance of the index they should not be judged by the index. Finally, and more importantly, fund managers can and do hold a percentage of their funds in cash. Indeed, a holding in cash is generally unavoidable for opened-ended real estate funds for at least three reasons (Lee, 2004). First, to cover potential redemption calls by investors. Second, as a result of accumulations of investment funds that yet to be invested. Third, real estate fund managers maybe holding cash as part of a specific active strategy, for instance, to reduce the overall risk of the fund in a bear market. This should make it clear that the use of a benchmark which lacks a cash position similar to that of the fund's actively managed cash holdings is likely to be miss-specified. In other words, if the actively managed portfolio includes a position in cash the investment policy benchmark must also include a cash position as well. As the IPDMI does not include an active position in cash it should not be used for performance measurement or attribution[3].

As an alternative to a market portfolio benchmark Grinblatt and Titman (1988) argue that the assets that are considered tradable by the management under evaluation provides the correct conclusions about their performance therefore a benchmark portfolio could be generated from the funds themselves. This would enable funds to be evaluated against their own industry average, which a survey by Waldy (1989) showed is the way most fund managers would prefer to be evaluated. As suggested by Rosenberg (1981) such an index gives the 'consensus expectations' of investors as it represents the viable investment alternative. Therefore, the Pooled Property Fund Index (PPFI) is used here as it is a value weighted index constructed from all funds covered in the HSBC/APUT surveys, not just the 19 funds to be evaluated, and as such the index includes the returns to cash. .

However, the funds covered in the index display differences in investment style and the legal constitution, for instance, balanced or specialist, Property Unit Trust (PUT) or Managed Property Fund (MPF)[4]. Carlson (1970) and McDonald (1974) therefore suggest that funds organised in different ways should be compared with benchmarks reflecting the results of portfolio managers with similar investment objectives. Recognising this the HSBC/APUT surveys include a number of sub-indices, a

[3] This could be overcome by weighting the returns of the IPDMI by the amount in cash in each fund, if known.

[4] See Lee (1991) for more details of the legal statutes under which different real estate funds in the UK operate.

Balanced Fund index made up of the return performance of all balanced PUTs and MPFs, a PUT Balanced and a MPF Balanced. These sub-indices therefore should be closer in structure to the funds under consideration than either the IPDMI or PPFI[5].

Nonetheless, even these sub-market indices are broader in coverage of the real estate investment market that fund managers invest in, or exclude, as part of their active management strategy. If accuracy is the goal in the construction of an investment policy benchmark, then it seems indisputable that the benchmark should be the one that most closely matches the fund's declared style, rather than to some arbitrary standard set by the market. To do otherwise would imply that the same benchmark is appropriate for all investment styles, which is clearly untrue. In other words, an investment policy benchmark should be a subset of the market portfolio that reflects as many aspects as possible of the fund manager's investment style.

In order to derive the relevant investment policy return Ibbotson and Kaplan (2000) suggest using the weighted-average returns of the funds' allocation across the various asset classes invested by the funds. Since the investment allocations of the individual real estate funds are not known we cannot follow this approach. We therefore follow the approach of Surz et al (1999) and derive the fund's investment policy using the return-based style analysis methodology of Sharpe (1992). In other words, we let the returns of the fund speak for themselves.

Sharpe has proposed the following model to identify a fund's effective asset allocation and hence the generic benchmark that 'best' describes his performance:

$$R_i = \left[b_{i1}F_1 + b_{i2}F_2 + ... + b_{in}F_n\right] + e_i \qquad (5)$$

where R_i represents the return on the fund i, F_j the return on asset class factor j, b the coefficients estimated by the model which represents the funds effective asset allocation to the factor and e_i the error unexplained by the model.

We require that the weights (i.e., the b's) sum to 1 (100%) and are non-negative. This implies that the funds are 100% invested and that short selling is not allowed. Then using the returns of the fund and the returns on the asset class indices, the policy return or 'style' of the fund can be represented by the loading (or weights) on the factor indices. The 'best' representation of the fund's style is determined by minimizing the variance of the residual e, i.e., the variance of the actual fund return less the style return, such that the restrictions of full investment and non-zero weights are met. In other words, return-based style analysis is similar to regression analysis with the addition of constraints on the loadings of the fund's returns on the chosen indices and the requirement that the weights sum to one and like regression the 'best' mix is found by maximising R^2 defined as:

$$R^2 = 1 - \frac{Var(e)}{Var(R)} \qquad (6)$$

[5] IPD does not produce a specialist fund index but one is easy to calculate from the data provided in the surveys.

where the right hand side of the equation (R^2) equals 1 minus the ratio of unexplained variation to the total variability of returns of fund i. R^2 thus indicates the proportion in the variability of the fund's returns explained by the n factors.

To determine the funds investment policy "style" we used the overall best fit of the fund's returns against a number of investment market segment indices using quarterly data for the entire 9-year sample period. The indices used to represent the 'style' of each fund are the 10 market segments used by IPD in their standard performance analysis reports to investors together with the returns on 3-months cash. Tests performed by IPD suggest that this 10-segment categorisation maximises the explanatory variance in returns across individual properties and is the most effective split for asset allocation optimisation (Fordsham and Key, 1996). The 10 market segments are: Standard Retail Southeast (SRSE); Standard Retail Rest of UK (SRRUK); Shopping Centres (SHC); Retail Warehouses (RW); Offices in the City of London (OCITY); Offices in the West End (OWE); Offices Rest of Southeast (ORSE); Offices Rest of UK (ORUK); Industrials Southern and Eastern (ISE) and Industrials Rest of UK (IRUK). Thus, the 10 market segments offer an easy way to identify the investment style of the funds. We also used the quarterly returns of 3-months cash to represent the returns from holding cash. All the data extracted from the Monthly Index Performance Service (MIPS) Database produced by IPD.

As different trustees will be using different benchmarks to assess a fund manager's performance, and since we have no knowledge of which is being used, *faute de mieux*, all the available quarterly benchmarks discussed above are used. This also has the advantage that we can assess which index most closely represents the investment policy of the fund managers and so raises the bar on the fund's ability to achieve active returns.

A final issue is whether any adjustment should be made for risk. The analysis is performed without any adjustment for risk for two reasons. First, there is a good deal of controversy as how to define risk in the real estate market (see Investment Property Forum, 2000). Secondly, Capon et al (1996) and Lawrence (1998) argue that investors pay more attention to performance rankings reported by consultants and in periodicals, which are based on raw returns. Indeed, Hendricks et al (1993) and Sirri and Tufano (1992) show that investors make their decisions based on raw returns rather than on risk-adjusted returns. Hence, it is the raw added value in excess of the benchmark that investors are likely to use when trying to decide whether the fund's active management has been successful.

4. Answers

Question 1: How much of the variability of returns across time is explained by policy?

To ascertain how much of the variability of fund returns over time is attributable to the variability of policy returns, we run a time-series regression of total returns (TR) against policy returns (BR) for each fund i. Using the same approach as BHB/BSB we conclude that the average coefficient of determination (R^2) for the typical real estate fund is between 37-48%, depending on the investment policy benchmark chosen, see Table 1. Thus, less than half of a fund's return variability over time can be explained by the variability of recognised benchmarks taken to represent the fund's

investment policy. This implies that over half and up to two thirds of real estate fund returns are explained by tactical asset allocation and security selection. These results are considerably less than those of previous studies for mutual funds and pension funds where approximately 90% plus of the variability of fund returns across time are explained by the variability of the benchmark or policy return.

This conclusion is only partially useful however since it does not show the range of outcomes of the study. In order to investigate this we divided the data into quartiles as measured by R^2. Where the 1st quartile shows the average coefficient of determination for the five funds with the highest R^2 values, the next quartile those five funds with the next highest R^2 values and so on down to the last four funds that make up the 4th quartile.

Table 1: The Percentage Variability of Fund Returns Explained by Investment Policy Benchmarks

	Investment Policy Benchmark			
Statistic	**IPD**	**PPFI**	**Bal/Spec**	**Style**
Average	**36.66**	**39.99**	**42.13**	**47.58**
SD	**16.26**	**14.09**	**14.10**	**18.85**
Quartile	**IPD**	**PPFI**	**Bal/Spec**	**Style**
1	**58.59**	**59.23**	**60.45**	**72.19**
2	**36.89**	**40.50**	**45.19**	**51.80**
3	**30.51**	**33.67**	**34.63**	**37.50**
4	**16.64**	**23.18**	**24.77**	**24.13**

The results in Table 1 show that those managers in the bottom quartile only about a quarter of the variability in their returns can be explained by the variability of the benchmark, whereas for the funds in the top quartile over 70% of their return variability is explained by the benchmarks. Nonetheless, the average value of funds in the top quartile, using the fund's individual style benchmark, is still below that for the lowest quartile reported in previous studies, see BHB/BSB.

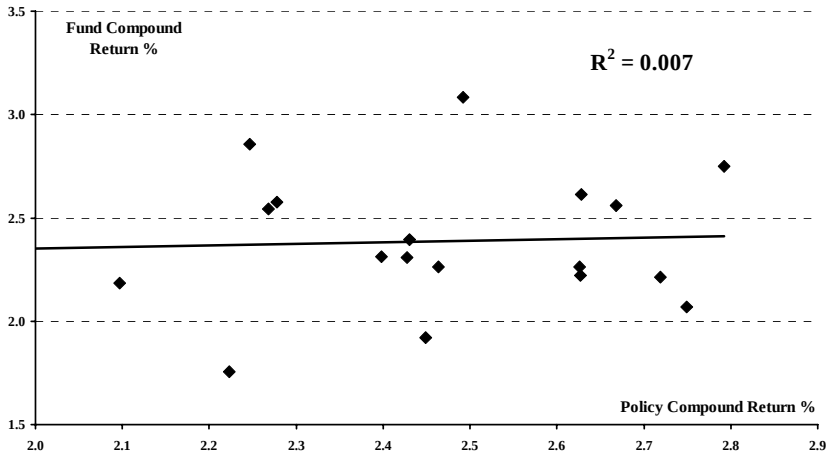
Note also that, in terms of R^2, the benchmarks that are closer in composition to the funds studied here all have higher average R^2 than the much broader market portfolio (IPDMI). For instance, the PPFI shows an average R^2 10% higher than the IPDMI, while the Style analysis benchmark is 30% higher. The Style benchmark also shows the highest average R^2 values in all quartiles of any benchmark. This gives confidence that the indices used are a good description of the investment style of the funds and so can be used to represent each fund's investment policy. This benchmark is therefore used in the following analysis.

Question 2: How similar are the policies across funds?

To compare the variation in returns attributable to asset allocation policy among funds, we apply a cross-sectional regression analysis. As discussed above, when all funds followed the same passive asset allocation policy, there would be no variation among funds, but the asset allocation policy explains all of the time-series variability of a fund's return. In contrast, if all funds were invested passively but had a wide range of asset allocation policies, all of the variation in returns would be attributable to policy. Accordingly, the two factors that drive the cross-sectional R^2 are (i) the differences between the funds' asset allocation policies (i.e., differences in their benchmarks) and (ii) the differences in the degree of active timing and/or stock

picking. In order, to see how similar the funds are in their investment policies and the extent to which funds engaged in active management a cross-sectional regression was made of the 9-year compound returns of the fund against the corresponding returns of the fund's investment policy (Figure1).

Figure 1: Fund versus Policy Compound Returns: 1994-2003



As explained in equations (2) and (3), we compute for each fund the geometric average annual total return and the geometric average annual policy return. These values are compared over all funds in a cross-sectional regression. The resulting R^2 is zero, as illustrated in Figure 1. So contrary to the results of Ibbotson and Kaplan (2000) which found that 40% (35%) of the variability across mutual funds (pension funds) can be explained by policy. Figure 1 shows that investment policy explains nothing of the return differences across real estate funds in the UK.

As discussed above, the cross-sectional R^2 depends (i) on how much the asset allocation policies of funds differ and (ii) on how much funds engaged in active management. To assess how much asset allocation policies differ among funds, Table 2 shows the cross-sectional averages, standard deviations, and different percentiles of the benchmark weights of the mutual funds. The large standard deviations of target weights and the large spreads between percentiles show that there are substantial differences in the asset allocation policies among funds. The cross-sectional R^2 depends on both the difference in investment policy and the degree to which funds engaged in active management strategies. Therefore, the very low R^2 value can partly be explained by the exposures the funds to the various market segments and the extent of concentration within the segments. In order to investigate this, the percentage of funds with holdings in a particular market segment and the average allocations were calculated for the two types of funds (balanced and specialist), implied by style analysis, the results of which are presented in Table 2.

It is clear from Table 2 that that balanced funds, as their name suggests, are more evenly spread in terms of the number of segments they hold. For instance, 43% of the funds have an allocation in at least one segment, compared with 36% for the specialist funds. Additionally, the standard deviation in the number of balanced funds with holdings is substantially less compared with that for specialist funds, 13.8% compared with 20.5%. In other words, balanced funds hold more segments than specialist funds.

The average allocation in the segments presents a similar picture, in that, although balanced funds and specialist funds have the same average allocation (9.1%) balanced funds again display a lower standard deviation, 3.9% compared with 10.1%. In other words, in the segments that they hold balanced funds have similar holdings where as specialist funds have markedly different allocations within segments. In particular, specialist funds concentrated their holdings in market segments with small lot sizes for instance, ISE, where three quarters of the funds have holdings and have on average 37% of their assets in that segment. Both fund types have few have a holding in Offices, due to the relatively larger lot sizes, but where they do it is again in the small lot size segment (OWE). A third of the balanced funds have holdings in Cash, while none of the specialist funds hold cash balances. That is balanced funds have a more even spread across the market segments both in terms of segments held and allocations within segments than specialist funds who focus on a handful of segments.

Table 2: Percentage of Balanced and Specialist Funds with Holdings in the Market Segments and the Average Allocation: implied by Style Analysis

Market	% of Funds			Average Allocation %		
Segment	Balanced	Specialist	All	Balanced	Specialist	All
SRSE	33.3	50.0	36.8	9.2	5.5	8.4
SRRUK	40.0	50.0	42.1	8.9	14.5	10.1
SHC	40.0	50.0	42.1	7.9	7.8	7.9
RW	60.0	25.0	52.6	10.4	4.9	9.3
OCITY	40.0	25.0	36.8	6.2	3.1	5.5
OWE	60.0	25.0	52.6	14.3	11.5	13.7
ORSE	26.7	50.0	31.6	4.5	3.2	4.3
ORUK	26.7	25.0	26.3	5.2	3.5	4.9
ISE	66.7	75.0	68.4	17.2	37.0	21.4
IRUK	46.7	25.0	42.1	10.5	9.0	10.2
Cash	33.3	0.0	26.3	5.6	0.0	4.5
Overall Average	43.0	36.4	41.6	9.1	9.1	9.1
Standard deviation	13.8	20.5	12.6	3.9	10.1	5.0

This difference in spread in property holdings and concentration across the market segments can be more easily seen by a calculating a Herfindahl index of diversification, see Gyourko and Nelling (1996). The Herfindahl index is shown in equation 7:

$$H = \sum_{i=1}^{n} w_i^2 \qquad (7)$$

where n is the number of market segments and w_i is the fraction of the property funds asset holdings in segment i, The values of the Herfindahl index lie between 1 and 1/n. So for example if a property fund held all its assets in one segment the Herfindahl Index would equal one. In contrast, if the real estate fund held equal amounts in each of the 11 segments, i.e. the fund followed a naïve diversification strategy the Herfindahl index would equal 0.09.

The average Herfindahl index for the balanced funds is 0.33, while that for the specialist funds is 0.40, i.e. balanced funds are more diversified than specialist funds. However, both fund types have a high standard deviation (0.11), which implies that all real estate funds are pursing very different investment styles and that they deviate substantially from the average policy benchmark's in their attempts to generate active returns.

Question 3: How much of the level of returns is explained by investment policy?

The third question asks what portion or fraction of the return level is explained by asset allocation policy returns. As strongly emphasised by Ibbotson and Kaplan, the BHB/BSB studies did not address this question. In particular, Surz et al (1999) strongly argue that neither a time-series nor a cross-sectional R^2 is a correct way to measure the importance of policy in explaining fund's returns because both relate to the variability of returns, rather than to the magnitude (i.e., the level) of returns. Accordingly, their focus is on measuring what percentage of the absolute level of a typical fund's return is attributable to asset allocation policy. Therefore, we compute the proportion of fund's return explained by policy return for each fund as the ratio of compound policy return, BR, divided by the compound total return, TR. A fund that follows a passive investment policy will have all its performance explained by policy, i.e. a ratio of 100%. A fund that is successful at active investment will have a ratio less than 100%, whereas a fund that is unsuccessful in its active investment strategy will have a ratio greater than 100%. Thus, this question is designed to answer the question as to whether active asset management can add value.

Table 3: The Percentage Return Level Explained by Investment Policy

	Investment Policy Benchmark			
Statistic	**IPDMI**	**PPFI**	**Bal/Spec**	**Style**
Average	**103.9**	**102.1**	**104.1**	**104.1**
Max	**138.7**	**136.4**	**137.7**	**132.8**
Min	**79.0**	**77.7**	**78.4**	**74.6**
Number Successful	**7**	**9**	**5**	**6**
Average Added Value	**-0.050**	**-0.009**	**-0.060**	**-0.057**
Added value if successful	**0.277**	**0.250**	**0.351**	**0.412**
Added value if unsuccessful	**-0.241**	**-0.243**	**-0.207**	**-0.273**

Table 3 shows that on average investment policy explains more than 100% of total fund returns, irrespective of the benchmark used. Thus, on average, active management (tactical asset allocation and selection) subtracts value. This does not for a moment suggest that active management cannot add value, be it tactical allocation or property selection. What is does suggest, and very strongly so, is that active management is much more difficult to achieve than is generally accepted.

The finding that the average value for level of return explained by investment policy is above 100% is consistent with the arguments of Sharpe (1991). Sharpe (1991) argues that because the aggregation of all investors is the market, the average performance before costs of all investors must equal the performance of the market. Because costs do not net out across investors, the average investor must under-perform the market on a cost-adjusted basis. The implication is that, on average, more than 100% of the level of fund return would be expected from policy return.

As noted, the fact that average results indicate that the typical fund does not beat its investment policy benchmark does not mean that all funds under-perform. Surz et al (1999) argue that just because the average impact of investment policy should be near 100%, active management is not necessarily worthless. Indeed, Table 3 shows that all funds are not managed equally and not all managers are equal. For instance, using the style benchmark, if a manager succeeds in adding value, the percentage explained by investment policy can be as low as 75%. However, if the fund manger was unsuccessful in adding value, investment policy can explain as much as 133%, a

difference between the best and worst fund of 58%! The other benchmarks show similar results.

Table 3 also shows that number of funds that were successful varies with the investment policy benchmark chosen. For instance, only five (26%) of funds were classified as successful using the Balanced/Specialist benchmark but nine (47%) of funds using the PPFI index. These numbers are in contrast to those by Ibbotson and Kaplan (2000) and Surz et al (1999) who found that about half of the managers added value through successful active management. Furthermore, although three funds are ranked as successful by all investment policy benchmarks, most are not.

Finally, Table 3 shows the average of the added value for all funds examined above the fund's investment policy as measured by the four benchmarks. As suggested above, active management typically subtracts value with the typical fund producing returns less than their investment policy of between -0.009% (PPFI) to -0.06% (Bal/Spec) per quarter depending on the benchmark. However, if the fund is successful at active management the added value is between 0.25% (PPFI) and 0.41% (Bal/Spec) per quarter depending on the benchmark. In contrast, if unsuccessful at active management the fund manager subtracts as much as 0.27% per quarter from that which would have been achieved from a passive investment strategy.

Question 4: How was the Added value Achieved?

Assuming then that fund managers are able to add active returns, the next question that needs to be answered is how this added value was achieved by the funds. However, for this we would need to undertake an attribution analysis of the funds performance, something we cannot do as the required data here is subject to confidentially agreements.

But as funds engage in more and more active management the funds returns will deviate further and further from the benchmark. Such risk is referred to as tracking error risk (TER) since it quantifies the extent to which the portfolio can be expected to obtain a differential return from the benchmark. Insofar as the sectors followed or properties emphasised in the actively managed portfolio for those of the benchmark (through over-weighing and under-weighting), there will be tracking error. Thus, TER can be seen as arising from sector exposure and property weighting, or both. The proportion of TER that is due to each component of active management is taken as the strategy followed by the manager in his attempt to add value.

Grinhold (1993) amongst others shows that the tracking error risk of the *ith* - actively managed fund can be derived from the following equation:

$$TER_i = \sqrt{\sigma^2(R_B) * (\beta_i - 1)^2 + \sigma^2(\varepsilon_i)} \qquad (8)$$

where: β_i is the *ith* fund's beta measuring its systematic risk relative to that of the investment policy benchmark, and is equal to a weighted average of the individual beta's of the fund's holdings, $\sigma^2(R_B)$ is the variance of returns of the benchmark portfolio, $\sigma^2(\varepsilon_i)$ is the specific risk the fund and:

$$\sigma^2(\varepsilon_i) = \sigma^2(R_i) - \beta_i^2\sigma^2(R_B) \qquad (9)$$

where $\sigma^2(R_i)$ is the variance of returns (total risk) of the *ith* - actively managed fund.

The first part of equation 8 shows that TER increases as the portfolio's beta deviates from that of the benchmark index. The fund manager increases or decreases the risk of the fund relative to the market benchmark in anticipation of a rise or fall in market risk. This can be most readily achieved by concentrating the funds investment in those market segments expected to perform well in the future relative to the benchmark, i.e. tactical allocation. The second part of equation 8 therefore is that part of active management which is due to stock selection. Equation 8 also shows that TER can be decomposed into the two components of active management, tactical allocation or selection and so is able to indicate which strategy UK real estate fund managers are pursuing in their search to add value.

The average results presented in Table 4 are ranked by level of success as defined by the style analysis benchmark. For instance, the first group includes the six funds that outperformed their style benchmark, i.e. had scores less than 100%. The funds in the lowest group are the six funds that substantially under-performed their style benchmark, i.e. greater than 115%. The remaining seven funds are those that had active benchmark scores greater than 100% but less than 109%, i.e. they produced results very much inline with their benchmark and therefore can be considered as neutral.

Table 4: TER, Tactical Asset Allocation and Stock Selection

Rank	TER	TAA	Selection
Successful	**1.10**	**0.87**	**99.13**
Neutral	**1.11**	**0.76**	**99.24**
Unsuccessful	**1.82**	**3.68**	**96.32**

Table 4 shows that the average TER for the three groups of fund managers is quite large. For instance, assuming the TER of funds is distributed normally, the typical successful fund will show a deviation in performance from its benchmark by as much as 1.10% in two quarters out of three. In 19 out of the next 20 quarters this deviation in performance can be as much as 2.16%. For unsuccessful funds the deviation in performance can be even greater at 1.82% in two out of three quarters and 3.56% in 19 out of quarters. Consequently a particular fund's performance is likely to be erratic from quarter to quarter. These findings lend support the work of Lee (2004) who concludes that only a few funds can achieve consistency in performance and then only for a short time. Thus, investors need to keep a careful watch on the performance of the fund over time as Lee (2004) found that the results show that winners can easily become losers and some losers can become winners.

Finally, Table 4 clearly shows that TER is overwhelmingly due to stock selection, irrespective of whether the fund can be classified as successful neutral or unsuccessful in their pursuit of active excess returns. This is probably due to the fund's inability to implement tactical asset allocation decisions as the funds are generally too small to invest in a wide enough selection of market segments (see Table 2). This can be

coupled with the fact that the funds examined here are so small that they cannot hold sufficient numbers of properties to reduce specific risk down to acceptable levels, Byrne and Lee (2000).

5. Conclusion

Baum (2000) contends that for fund managers to prove they are adding value they need to pinpoint the fund's return relative to some benchmark of performance. The return through active management therefore comes from managers who, while holding some components of the benchmark, try to beat it through tactical asset allocation and stock selection. Thus, the added value of active management can be examined by comparing the fund's performance with that of a passive investment in the attendant benchmark. A number of studies have tried to examine this issue unfortunately there is disagreement on how to answer this question as it depends on the specific focus of the question being asked.

Following, Ibbotson and Kaplan (2000) we examine a number of related questions. First, how much return variability is explained by investment policy? Second, how similar are the policies across funds? Third, how much of a fund's return is attributed to the funds investment policy? Finally, how was this added value achieved?

Using quarterly returns of 19 real estate funds over the 9-years from 1994:Q4 to 2003:Q3, we find that in contrast to results of previous studies in the equity market the answer to question 1 indicates that less than half and down to one third of a fund's return variability can be explained by the variability investment policy, depending on the benchmark chosen. Thus, active management (tactical asset allocation and security selection) largely determines real estate fund performance in the UK. With regard to question 2 we find that there is no similarity in the investment policies pursed by real estate fund managers. Not only do real estate fund mangers in the UK have entirely different investment styles fund manager's deviate quite substantially from investment policy in their attempts to generate active returns. The answer to question 3 suggests that investment policy explains more than 100% of *level* of returns of the typical fund, irrespective of the benchmark chosen. That is, active management by the typical real estate fund in the UK subtracts value. However, the fact that on average the typical fund does not beat its investment policy benchmark does not mean that all funds under-perform. On the contrary, if a manager succeeds in adding value, the percentage explained by investment policy can be as low as 75%. However, if the fund manger was unsuccessful in adding value, investment policy can explain as much as 133%. When we examine question 4 we find that UK real estate funds focus on trying to pick winners to add value, but in doing so incur a large amount of TER such that a typical particular fund's performance is likely to be erratic from quarter to quarter. Consequently, successful active management is very difficult to achieve. Thus, we can conclude that active management can indeed add value to a real estate fund's performance. This is the good news. The bad news is adding value is much more difficult to achieve than is generally accepted.

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