# An Analysis of UK Property Funds Classified According to US Styles: Core, Value-added and Opportunistic

By

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Abstract

This analysis explores the feasibility of sorting UK funds into the three categories that are widely used in the US, and then compares the performance of these styles between the UK and US. Following an overview of several factors' impact on the expected risk and return of a property fund, we use Loan-to-Value ratio (LTV) as the dominant factor in a preliminary style-classification, defining funds with no debt as *core*, funds with LTV lower than 40% as *value-added*, and funds with higher than 50% LTV ratios as *opportunistic*. Then the study makes some adjustments to this classification based on the observation of the funds' attributes other than LTV, and the classification ends up with 19 core funds, 22 value-added funds and 21 opportunistic funds. After that, we find two major differences between the UK and US funds. First, the core approach represents a smaller portion of the UK funds than the US funds and the opposite is true for the value-added approach. One way to improve the feasibility of researchers comparing funds within these two countries is introducing a fourth style, *core-plus*. Second, the US opportunistic funds are better performing with similar leverage than their UK counterparts, while future studies would help draw more precise conclusions about the performance comparisons.

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# 1. Background and Introduction

In today's real estate investment world, the three styles of *core*, *value-added* and *opportunistic* are widely used on both property and portfolio levels. A brief definition of the three styles by NCREIF and the Townsend Group is as followed: "Core funds typically utilize low leverage and invest domestically in stabilized assets, whereas Opportunistic funds typically utilize high leverage, take on more market risk, and may invest domestically and/or internationally. Value-added generally falls somewhere between the two."[1] Besides these three styles, a fourth one called *core-plus* is also often used by investors to refer to the approach between core and value-added. However, the first three styles are the most widely discussed. Ever since the late 80's the NCREIF has been using the classification of these three styles and tracing indices of them. Since the three styles have relatively wide recognition in the US, in this research we call them the *US styles*, and the classification of US styles *the US-Three-Style classification*.

Among the three styles, core is the one with longer history, but opportunistic experienced the biggest development during the last two decades. Exhibit 1 shows the market shares of the three styles for the past 15 years in the US. The proportion of opportunistic funds increased from 16% in 1994 to 37% in 2008. At the same time, the core approach (including the so called "core-plus") remains the cornerstone, representing the largest share among all funds.

*(Insert Exhibit 1 approximately here)*

[1] See NCREIF and the Townsend Group, Real Estate Fund Indices and Vintage Period Performance Report, Q1/2009, p16.

- **Current Definitions of the US Styles**

The definitions of the three styles have different versions, but a systematic and quantitative one has not been put forward yet. Besides NCREIF and Townsend Group's brief definitions of the styles in their quarterly report, the definitions raised by Ron Kaiser (2005) cover more criteria such as property subtype (retail, office, residential and industrial are core subtypes), fund size (core funds larger) and property life-cycle (development opportunistic). Furthermore, INREV's White Paper (2009) adds the proportion of return through income (core has more return through income) in their definitions. Although their definitions vary in length and details, opinions on which factors are relevant are not that divergent. Actually, in addition to their brief definitions, both NCREIF and Ron Kaiser also give a more detailed list of considered factors in the US-Three-Style classification. Suggested factors from the three parties are listed together in Exhibit 2. As we can see, leverage, lifecycle, location and subtype are widely agreed on.

*(Insert Exhibit 2 approximately here)*

Although investors look at similar factors for the US-Three-Style classification, they use divergent criteria on how to apply the factors quantitatively. To figure out how people make the classification in their own ways, both the NCREIF Styles White Paper Committee (2003) and Ron Kaiser (2005) surveyed some investors, and they both got divergent results. For example, to answer what "the maximum leverage ratio of core approach" is, one respondent in NCREIF's survey suggested 30% while the other one suggested 70%. In Kaiser's survey, the answers range from "non to little", 30% to 50%. For "the leverage ratio of value-added", people in Kaiser's survey give answers ranging from "max 50" to "up to 100%".

Meanwhile, Kaiser (2005) mentions that sometimes people use "absolute targets: 'core 8-10%, core-plus 10-12%, value-added 12-14%, and opportunistic 14%'; and others use a relative yardstick: NPI+100, NPI+200 and NPI+500 basis points." However, as investors diverge a lot on

the leverage ratios for each style, the expected return for each style can vary a lot in different markets and during different periods.

- **Why This Analysis?**

Some drawbacks of US Styles emerged during the past several years when the terms of value-added and opportunistic spread across the Atlantic and Pacific to managers in other countries. First, these terms lacked of a widely accepted standard, which caused a lot of confusion when funds with huge differences declared that they were the same style. Second, as is pointed out by many European investors, the US styles are not very stable. Value-added and opportunistic assets become core over time. For both reasons, European investors still feel more comfortable with their traditional real estate styles: *balanced* and *specialist*, both based on a fund's diversification strategy. Balanced funds generally hold a wide mix of property assets, diversified both by subtype and sub region, while specialist funds normally focus on specific subtypes or on properties within particular geographic regions. To some extent, balanced and specialist styles are playing the roles of core and opportunistic approaches respectively.

Compared to US styles, European real estate styles are easy to define and more long-term oriented. A portfolio rarely becomes unbalanced or un-specialist once it has set its mind to this course. However, being balanced or specialist doesn't indicate much about the expected risk/return of a fund. Based on a census of the IPD dataset, the average volatility of balanced funds and specialist funds for the past 7 years are 21.99% and 15.47%, respectively.[2]

As mentioned by Ron Kaiser (2005), although clearly imperfect, the US-Three-Style classification of funds is useful to investors in at least two ways: first, it provides a rough but

[2] It should be noted that many balanced funds have relatively high leverage ratios, which certainly affects the volatility (as will be discussed subsequently).

useful description of the expected risk and return for each fund. Such a description helps buyers choose proper funds to fit their investment purposes. In addition, the classification of styles also provides a benchmark for each group to measure managers' performance, making something like an "apples-to-apples" comparison possible.

Given the above, if the classification of US styles can be made more standard and more practical, applying them on a wider basis will greatly benefit communication in the real estate investment world, globally. As one step toward this goal, our analysis defines 62 UK funds using US styles and then makes some comparisons between the two groups of property funds.

## 2. Data and Research Methodology

In order to conduct comparative studies, data for both UK and US funds are used here. The data on UK funds is provided by the Investment Property Databank (IPD), covering 62 property funds investing in the UK domestic market. This IPD dataset contains fund attributes including fund type, vintage year, leverage, concentration and diversification among investments and time-weighted performance for each fund to 1Q/2009.

In the absence of US fund-level data, we use the Real Estate Fund Indices and Vintage Period Performance Report by NCREIF and Townsend Group as the data source of US funds. This report provides industry-level census and analysis for over 300 US property funds, including mean leverage, fund count, total market value, and time-weighted performance for each style. Data for each style is sufficient for some comparative studies between the UK and US funds after the classification.

The research first reviews several factors suggested by other researchers in the US-Three-Style classification, including the Loan-to-value ratio (LTV), Net Asset Value (NAV) and property size. Then two regressions are conducted to determine these major factors' impact on the expected volatility of UK funds. The regressions will be based on data of funds with long on-going historical performance. Then we begin the classification by using the dominant factor, LTV. The preliminary classification using LTV has neglected to consider the influences of other factors, so some observations of the relationship between some other factors and LTV will be necessary. The research will identify some outliers and re-classify a few funds. Finally, based on the result of the classification, a comparison between UK and US funds shows the pros and cons of utilizing this US-Three-Style classification in UK funds.

# 3. Factors Considered in the US-Three-Style Classification

The ultimate criteria to determine a fund's style should be its expected risk and return, a point about which most investors agree[3]. In the US, a fund's marketing document shows its expected risk/return and the style it will undertake. In the UK, this is obviously not accessible. Another way is to look at the fund's historical performance, which to some extent indicates its expected risk/return; but this shortcut is not meaningful because investors need to know the expected risk/return when a fund has just been founded. When both these two methods are inaccessible or unreliable, investors need to work on relevant factors as listed in Exhibit 2.

- **Financial Factors**

Among all the considered factors, leverage is undoubtedly the most important one, due to its significant and direct influence on the expected risk/ return. In the US, the LTV for core, value-added (open), value-added (closed) and opportunistic funds currently are 30.7%, 52.7%, 55.3% and 67.4%, respectively. [4]

"Holding stabilized assets" is one criterion of core funds, according to the Townsend Group. Meanwhile, INREV demonstrates more clearly that the core approach generates a high proportion of return through income. Unlike other "instant" attributes, this factor is either ex post calculation or ex ante expectation, so it is difficult to get an objective percentage.

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[3] Ron Kaiser (2005) points out the distinction between the styles used in the US real estate world and the styles used in Stock markets; the former starts from expected risk/return while the latter starts from inherent factors such as size, and is observed for performances.

[4] See NCREIF and the Townsend Group, Real Estate Fund Indices and Vintage Period Performance Report, Q1/2009

Fund size and the holding of non-real estate assets are drawn from balance sheets, but actually they are relevant mostly because of the diversification effect. Generally, larger funds (funds with larger asset value and more properties) tend to have lower volatility because they are better at avoiding idiosyncratic risks (they achieve better diversification) than smaller funds. Thus, for core funds whose partial task is to duplicate the general market return, a large size is very favorable, or even necessary. For opportunistic funds, whose objective is to focus on special opportunities, a relatively small size is more favorable. As is shown in Exhibit 8, in the US, the average NAV of core funds is about five times that of the other two styles. At least in the US, size can be a key factor in distinguishing core funds from the other styles.

- **Diversification Factors**

Property count is basically the way fund size changes the volatility. By holding more properties, a large fund reduces its exposure to idiosyncratic risks. Research by the IPF Educational Trust and IPF Joint Research Program (2007) proves that funds with more properties are less volatile when these funds contain properties randomly picked out from a large property pool. In the Monte Carlo simulation of the research, the tracking error reduces from 4.06% for a 10-property portfolio to 0.78% for a 500-property portfolio.

A lot of research has been undertaken to determine the best way to diversify: property type or location. Generally investors assume that subtype diversification is more effective in risk reduction. In the survey by Louargand (1992), 125 fund advisors and sponsors showed their opinions on the diversification of their portfolios. The majority of the respondents rely first on property types and second on location to diversify their portfolios.

- **Property Factors**

Property factors include property size, type, location, and lifecycle (stage of development). About property size, there are two different opinions on its relationship with the volatility.

Traditionally, most investors define larger properties as *institutional assets*, which are less risky, because large properties normally target high-quality tenants and long-term leases. However, the study by Ziering and McIntosh (1999) shows that large "trophy" properties are more volatile than smaller properties, and produce 200 bps higher returns.

Another property factor is the type, or subtype. In the US, four major types, office, multi-family housing, retail and industrial are traditionally considered as *core subtypes*[5]. In the UK, however, residential properties are not considered institutional due to social mindset and land use restrictions. First, the "property ladder" is very desirable in the country, and the percentage of residential ownership is much higher than in the US. Second, it is relatively more difficult to conduct large-scale residential projects, which are preferred by institutional investors.

Property location has several different levels, ranging from country, region, state and metropolitan area, down through submarket. On the country level, the domestic market is considered less risky than international markets, at least from the perspective of an investor from mature markets such as the US, UK, or Japan. In the US, only opportunistic funds allocate their capital globally[6]. On the metropolitan level, the first-tier areas, such as the top thirty MSAs in the US[7], are often considered to be institutional or core.

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[5] The Hotel, although included in the NCREIF Property Index (NPI), is not supposed to be a core subtype, and it makes the NPI different from a Core Index.

[6] NCREIF and the Townsend Group, Real Estate Fund Indices and Vintage Period Performance Report, Q1/2009, page 5.

[7] See Ronald W. Kaiser, 2005.

# 4. Regressions of Major Factors' Impact on Volatility

After the overview on factors from categories of financial, diversification, and property, we can qualitatively determine which factors are most important. Then regression analysis will help to disclose their impact on the expected volatility of a fund. The following factors are considered as important ones, because they tend to have stronger linear relation to a fund's volatility:

- LR (Leverage ratio) =1/ (1-LTV). *(Financial factor)*
- PCR (Property count ratio) =1/ (Number of properties)$^{1/2}$ . *(Diversification factor)*
- Subtype-HHI[8] : HHI ratio of investments among subtypes. *(Diversification factor)*
- Geography-HHI[9] : HHI ratio of investments among locations. *(Diversification factor)*
- Development: Percentage of development among all investments. *(Property factor)*
- Property-size: Average market value of a property. *(Property factor)*

However, data for Development and Geography-HHI is unavailable or incomplete for these UK funds, so the first regression model is about volatility and the other four factors:

$$\sigma = a + b_1 \times \text{LR} + b_2 \times \text{PCR} + b_3 \times \text{Subtype-HHI} + b_4 \times \text{Property-size}$$

[8] As a definition borrowed from economics, here the Subtype-HHI measures how concentrating a fund is among different subtypes. The formula is: Subtype-HHI=$(100\times NAV_{office}/NAV)^2 + (100\times NAV_{retail}/NAV)^2 + (100\times NAV_{industrial}/NAV)^2 + (100\times NAV_{other\ types}/NAV)^2$

[9] The formula is: Geography-HHI=$(100\times NAV_{SE}/NAV)^2 + (100\times NAV_{else}/NAV)^2$

The regression is run using the last 10 years' data and then on the last 7 years'. Thus, one scenario has a more reliable calculation for volatility while the other one has more samples. The results of regressions are as followed:

| **10 years' data n=25 $R^2$: 0.85 Adj.$R^2$: 0.82** | | **Intercept** | **LR** | **PCR** | **S-HHI** | **Property-size** |
|---|---|---|---|---|---|---|
| | Coefficient | 5.75 | 6.35 | -0.43 | 0.0003 | -0.02 |
| | t Stat | 3.26 | 3.50 | -0.06 | 2.32 | -0.43 |
| | Sensitivity Factor[10] | - | 3.32 | -0.04 | 0.96 | -0.47 |
| **7 years' data n=33 $R^2$: 0.83 Adj.$R^2$: 0.80** | | **Intercept** | **LR** | **PCR** | **S-HHI** | **Property-size** |
| | Coefficient | 9.00 | 4.96 | -1.60 | 0.0004 | 0.07 |
| | t Stat | 5.49 | 3.86 | -0.20 | 2.04 | 2.18 |
| | Sensitivity Factor | - | 2.98 | -0.16 | 1.36 | 2.05 |

As is shown in the regression, LR has by far the biggest influence on a fund's volatility. With knowledge of the scaling effect of LR, we need to construct a second regression without the impact of LR, using the data for non-leveraged funds:

$$\sigma = a + b_1 \times \text{PCR} + b_2 \times \text{Subtype-HHI} + b_3 \times \text{Property-size}$$

And the regression result is:

| **10 years' data n=10 $R^2$: 0.84 Adj.$R^2$: 0.77** | | **Intercept** | **PCR** | **S-HHI** | **Property-size** |
|---|---|---|---|---|---|
| | Coefficient | 11.14 | -16.80 | 0.0007 | 0.05 |
| | t Stat | 23.33 | -3.05 | 5.07 | 1.41 |
| | Sensitivity Factor | - | -1.19 | 1.99 | 1.30 |

[10] The sensitivity factor measures how much the volatility (in percents) changes if the variable increases by one standard deviation given other factors the same.

For PCR, we get three negative coefficients, one being significant. This indicates that funds with more properties tend to be more volatile, which is against the theory of diversification. Nothing but the small sample amount can explain the negative coefficient. However, we don't expect to see a significant and positive coefficient for PCR here, because portfolio managers pick up properties with similar attributes, not randomly (as the IPF model is run). The diversification effect of owning more assets can sometimes be neglectable due to asset homogeneity.

For Subtype-HHI, the result is consistent and significant, strongly supporting the diversification effect of subtypes. According to the sensitivity factor, with HHI decreasing for one standard deviation, a fund's volatility drops for 1-2 (%).

For Property-size, the regressions deliver positive coefficients, showing that larger properties bring more risk. It is consistent with the research by Ziering and McIntosh, although not all regression results here are significant.

# 5. The Classification Process

In the last two Sections we discussed the influence of relevant factors in the US-Three-Style classification. However, how to apply these factors quantitatively remains unclear. In practice, the classification is not done in a very quantitative and objective way. According to the NCREIF& Townsend Report, funds in the US are classified into style indices based on two factors: 1) the style classification the manager uses when marketing the fund; 2) the assessment that Townsend and NCREIF personnel make upon the "overall goals, objectives, and strategies" [11]of the funds. During the second stage of classification, the personnel review many factors, including "investment discretion, various layers of portfolio and investment level risks, and limited performance history," and the process can be "somewhat subjective."[11] Sometimes the Townsend and NCREIF do have different opinions about a fund's style from those of the fund managers.

None of the 62 UK funds declare their US-styles or expected risk/return in fund documents, so we can't rely on those documents to start the classification. Among the factors listed in Exhibit 2, leverage is by far the dominant one. In fact, it can serve as the starting point of the classification.

- **The LTV-dominant Classification**

Besides LTV's strong indication of a fund's expected risk/return, another reason we start from LTV is its statistic dispersion. The values of LTV for the 62 UK funds show a natural gap between 40%-50%. The equal-weighted average for leverage ratio of funds above the gap is 65%, similar to that of the US opportunistic funds, 67.4%. Meanwhile, there are 17 funds with zero LTV ratios, in some cases perhaps due to their own regulations. The 17 funds with no loans

[11] See NCREIF & the Townsend Group, Real Estate Fund Indices and Vintage Period Performance Report, 1Q 2009

are the most risk-averse, and they amount to about one third of all 62 funds. Thus, it will be convincing to sort funds with higher than 50% LTV into opportunistic and those with zero into core.

Here we must point out the substantial difference in LTV between the US and the UK funds, and the resulting difficulties in delivering similar results through the US-Three-Style classification. For example, the core funds in the US, representing about 43% of the market value, have an average LTV of 30.7% by the first quarter of 2009. At the same time, more than half of the 62 UK funds have a LTV lower than 20% and 17 of them have zero. So the average LTV of core and value-added UK funds is doomed to be much lower. Thus we have 17 core, 24 value-added and 21 opportunistic in the preliminary classification, as is shown in Exhibit 3.

*(Insert Exhibit 3 approximately here)*

- **The Adjusted Classification**

The LTV-dominant classification doesn't take account for other factors and is just a fair start of the work. For the next step we examine if other factors show consistent and meaningful dispersion by looking at their correlations with LTV and what the outliers are. Any abnormal trends or extreme outliers may provide clues for adjustments to the LTV-dominant classification.

Exhibit 4 is a summary of those factors among the three boxes. The Pearson ranking correlation ranges from 0.288 to 0.433, with S-HHI showing the highest value. This shows a connection between UK styles and the US styles. From Exhibit 5 we see more clearly the dispersion of balanced funds and specialist funds after the preliminary classification.

During the examination we pick out several outlier funds but finally it lacks sufficient reasons to re-classify these funds. The LTV-gap between the value-added and opportunistic boxes annuls

such adjustments. Meanwhile, the distinction between Core and Value-added are less rigid and there are two adjustments to make.

*(Insert Exhibits 4, 5 approximately here)*

First, Fund 20 has to be moved from the value-added box to the core box, because it has zero Net debt, and it is a balanced fund. Another fund that was treated "unfairly" is Fund 18 in the value-added box. Its LTV ratio is 0.3%, which is not distinguishable with zero, and it is a balanced fund pursuing diversification among the major three subtypes. It should also be moved into the core style-box.

Thus we redefine fund 20 and fund 18 as core funds instead of value-added funds. The other 60 funds will remain as what they were. After the adjusted classification, there are 19 core funds, 22 value-added funds and 21 opportunistic funds.

*(Insert Exhibit 6 approximately here)*

# 6. Style-comparison of UK and US Funds

- **Size and Market Share**

After adopting the US-Three-Style classification to UK funds, some style-comparison between the two countries' funds seems of interest. A few significant differences appear in basic attributes such as fund size and market share. The first difference is the market shares of core and value-added. In the US, value-added funds represent a much larger portion (44%) than they do in the UK (31%) in terms of NAV. In terms of GAV the contrast is similar (25% compared to 20%). At the same time, value-added in the US represents a much smaller proportion than it does in the UK. Researchers need to keep such dissymmetry in mind in comparing fund styles between the two countries. If we introduce a fourth style, *core-plus,* the comparison would be facilitated. The core-plus funds are hidden in the core category in the US and in value-added in the UK, as is shown by the area with white lines in Exhibit 7. If the dot-line areas in the figure are defined as core-plus, then core, core-plus and value-added will have much more similar market shares in both countries.

*(Insert Exhibit 7 approximately here)*

The second difference is between the market shares of opportunistic funds. In the US opportunistic funds represent a much larger proportion (56% of total GAV) than they do in the UK (35% of total GAV). One possible reason is the extra appetite of US investors for international investments. In the US over 40% of the opportunistic capital is allocated in markets other than North America. The internationally-oriented capital all add to the opportunistic funds, making opportunistic the largest style in the US in terms of GAV. However, all 62 UK funds in our data set invest domestically.

*(Insert Exhibit 8 approximately here)*

Third, there is a significant contrast between the average sizes of UK and US core funds. The average size for US core funds is much larger than that of any other styles. Most US core funds are open-ended, and they have been active for a long time, making it possible for them to grow very large.

- **LTV**

The difference in LTV between the UK and US funds is significant. While the average LTV for US core funds is about 30%, most UK core funds have zero LTV. Similarly, LTV of value-added in the UK (18%) is much lower than it is in the US (50%). As mentioned before, there is a great demand for un-geared real estate return in the UK. Some investors prefer to use gearing by themselves. And since some unit trusts are tax transparent, they are less inclined to use leverage.

*(Insert Exhibit 9 approximately here)*

- **Performances**

Figures 10 and 11 show a series of performance comparisons between UK and US funds. During year 2006-2007, the US opportunistic funds delivered excellent returns, which could not be explained by their LTV. As is shown in Exhibit 9, the US and UK opportunistic funds have similar LTV, while the average LTV is much lower in the UK. If LTV is the dominant factor for expected risk/return, we should see extremely high peak in the opportunistic category in the UK, but not in the US.

What can explain the performance of US opportunistic funds? And what is the reason for the performance of UK opportunistic funds? The first reason for both questions possibly lies in the flaws of data used here: 1) the UK funds' LTV might vary in the history but I am only using the

current data (1Q/2009) and 2) there is only one sample for UK opportunistic funds (all the other UK opportunistic funds have ages less than 10 years). The second reason might be the profit from overseas markets. The US opportunistic funds have nearly half of their investments in markets other than North America. However, further studies will give better explanations.

*(Insert Exhibits 10-12 approximately here)*

# 7. Conclusion

Empirically, UK and US property funds have two major differences, which make the comparison of the two groups difficult no matter how the style classification is conducted. First, UK funds, with an average LTV 20.1%, are much more reluctant to use leverage compared to their US counterparts, whose average LTV is 50.0%. The second difference lies in the interests in overseas markets. None of the 62 UK funds in our dataset has investments in overseas markets, while investments there represent over 20% of the total GAV of US funds.

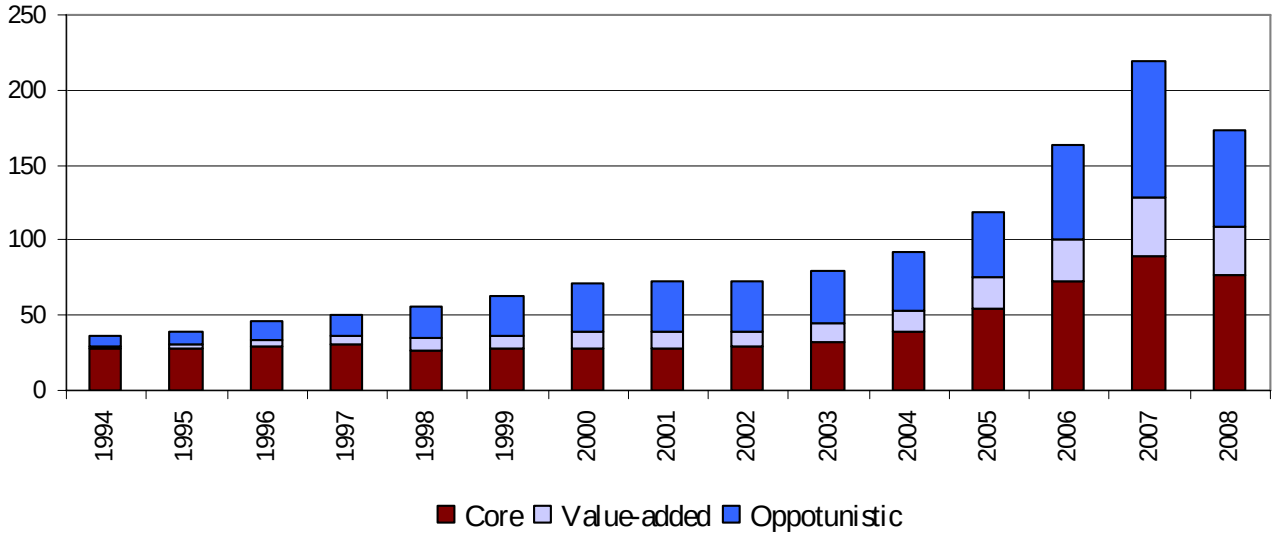
The classification is LTV-dominant due to the natural gap in the dispersion of LTV, and also the leading effect of leverage in a fund's risk/return. Although it's hard to achieve a widely accepted classification result given the qualitative character of the process, we believe a starting point on LTV is most practical and feasible.

After the US-Style-Classification, two major differences emerges between the UK and US funds. First, the core approach represents a smaller portion of the UK funds than the US funds, while the opposite is true for the value-added approach. We can improve the feasibility of researchers comparing funds within these two countries by introducing a fourth style, *core-plus*. Second, the US opportunistic funds have been better performing with similar leverage than their UK counterparts, especially during the period of the market peak.

# Exhibits

**Exhibit 1**

**Net assetLP of the three styles in US funds ($Bn)**




Source: NCREIF & the Townsend Group

**Exhibit 2**

**Factors considered in the US-Three-Style classification**

| Category | Factors | By NCREIF | By INREV | By Ron Kaiser |
|---|---|---|---|---|
| **Financial Factors** | Leverage | √ | √ | √ |
| | Proportion of income return | √ | √ | |
| | Composite size (NAV/ GAV) | √ | | |
| | Non-real estate asset (e.g. cash) | √ | | |
| **Diversification Factors** | Property Count | √ | | |
| | Subtype-diversification | √ | √ | |
| | Geography-diversification | √ | √ | |
| **Property Factors** | Life-cycle | √ | √ | √ |
| | Property size | | √ | √ |
| | Property subtype | √ | √ | √ |
| | Property location | √ | √ | √ |
| | Property quality | | | √ |
| | Occupancy level | | | √ |
| **Others** | Discretion | √ | | |
| | Investment structure | √ | √ | |
| | ... | | | |

**Exhibit 3**

**Preliminary classification: an LTV-dominant one**

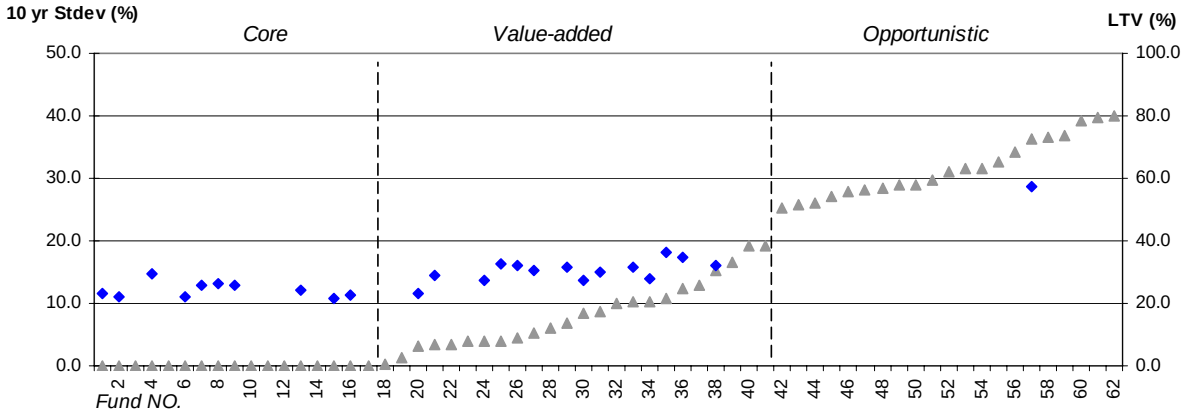


**Exhibit 4**

**Observation of Factors' Dispersion among Three Style-Boxes after the preliminary classification**

| Factor | Ranking correlation ( to LTV) | Mean for Core | Mean for Value-added | Mean for Opportunistic |
|---|---|---|---|---|
| LTV | 1 | 0% | 15.6% | 64.1% |
| Property Count | -0.317 | 70 | 39 | 57 |
| NAV | -0.299 | 340 £Mn | 454 £Mn | 185 £Mn |
| Subtype-HHI | 0.433 | 5033 | 5834 | 8582 |
| Ave. Property Size | 0.288 | 7.4 £Mn | 29.2 £Mn | 36.1 £Mn |
| Cash holding ratio | -0.425 | 8.8% | 3.9% | 1.8% |

**Exhibit 5**

**Funds' investments among subtypes**

**(those focusing on one subtype are specialist funds)**

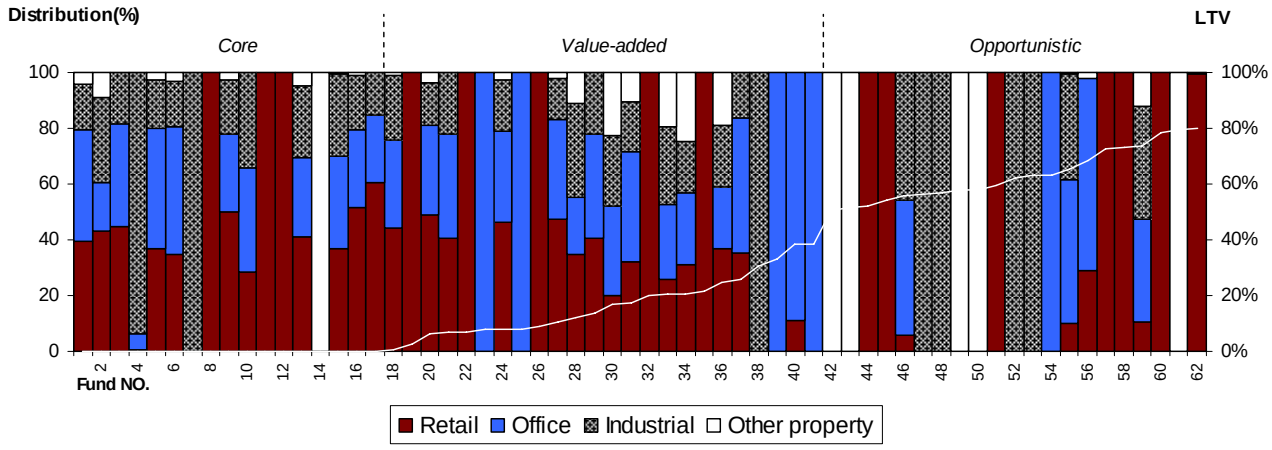


**Exhibit 6**

**Adjustments to the preliminary classification**

**(Funds with higher cash ratio than LTV have zero net debt, and funds with S-HHI under 4000 are balanced)**

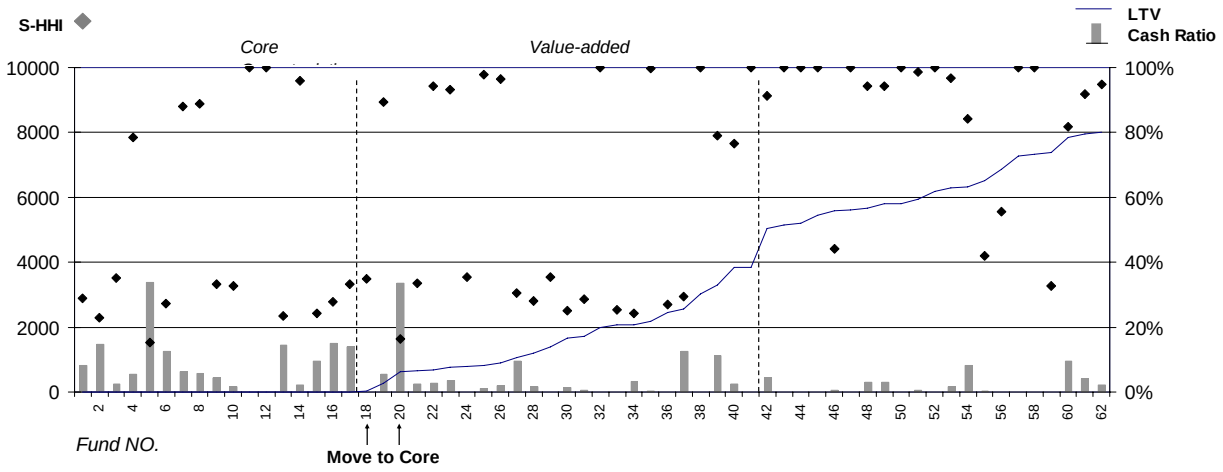



**Exhibit 7**

**Basic Composition of UK and US funds**

**(white-lined area shows the share of core-plus)**

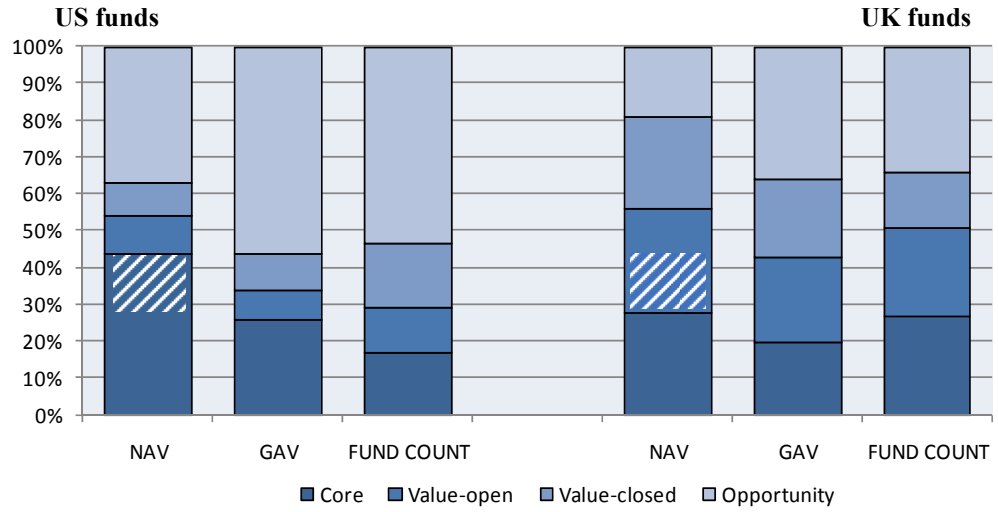


**Exhibit 8**

**Average Sizes of the UK and the US funds, in US dollars**

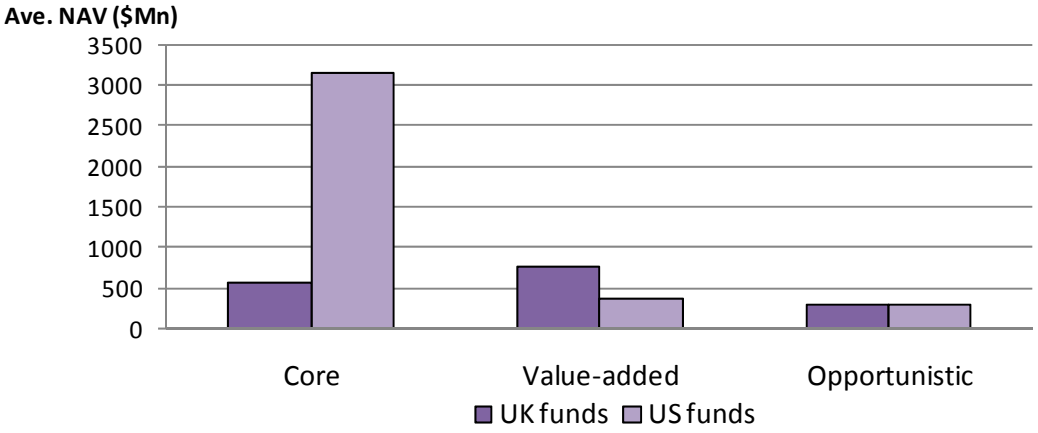



**Exhibit 9**

**LTV Ratio Comparison**

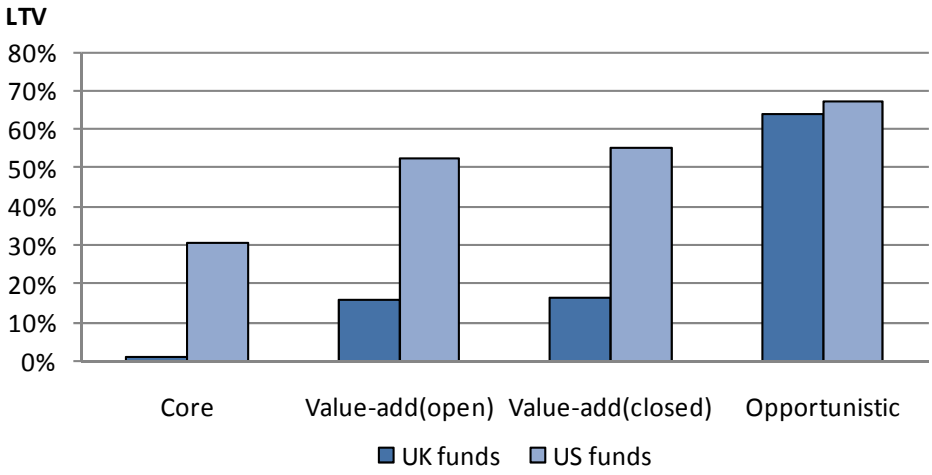
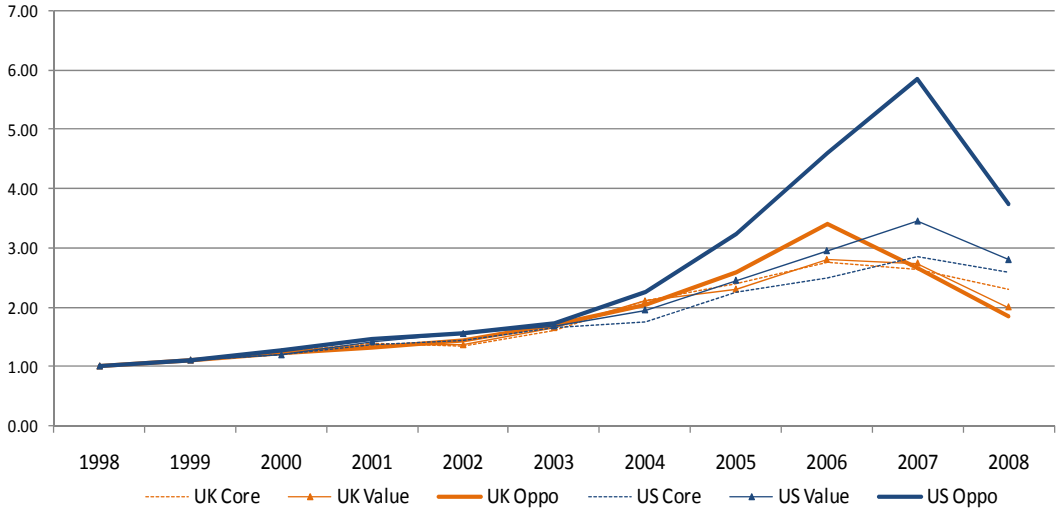


**Exhibit 10**

**Comparison of UK and US "Style Indices"[12]**

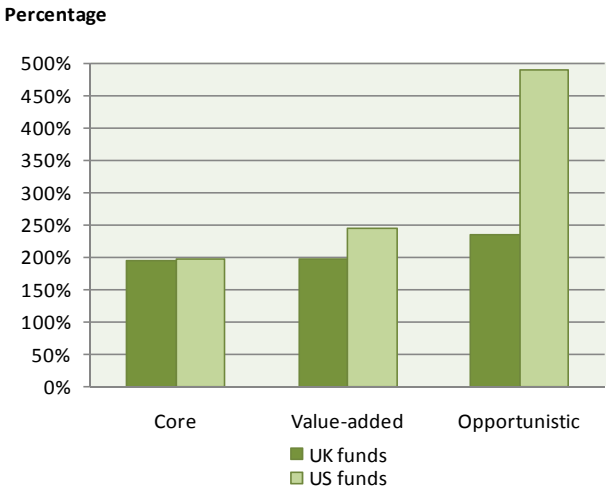



[12] Each index is created using annual equal-weighted return.

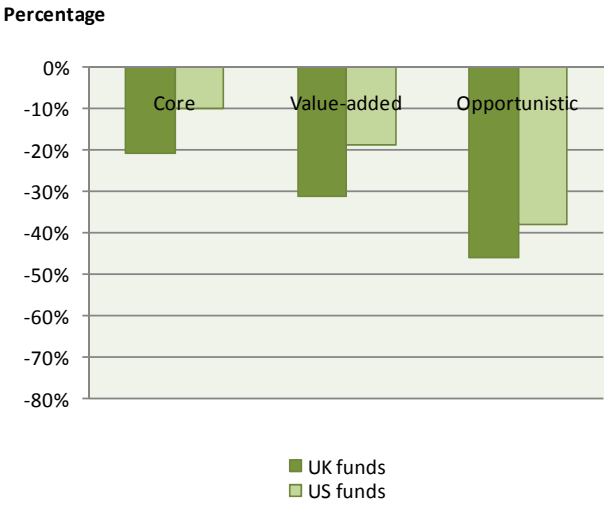
**Exhibit 11**

**Comparison of Market Peaks in the UK and the US**

The height of the peak, 1998=100%




The loss from the peak to Dec. 2008



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