Investment Property Forum

INVESTMENT PROPERTY FORUM Educational Trust

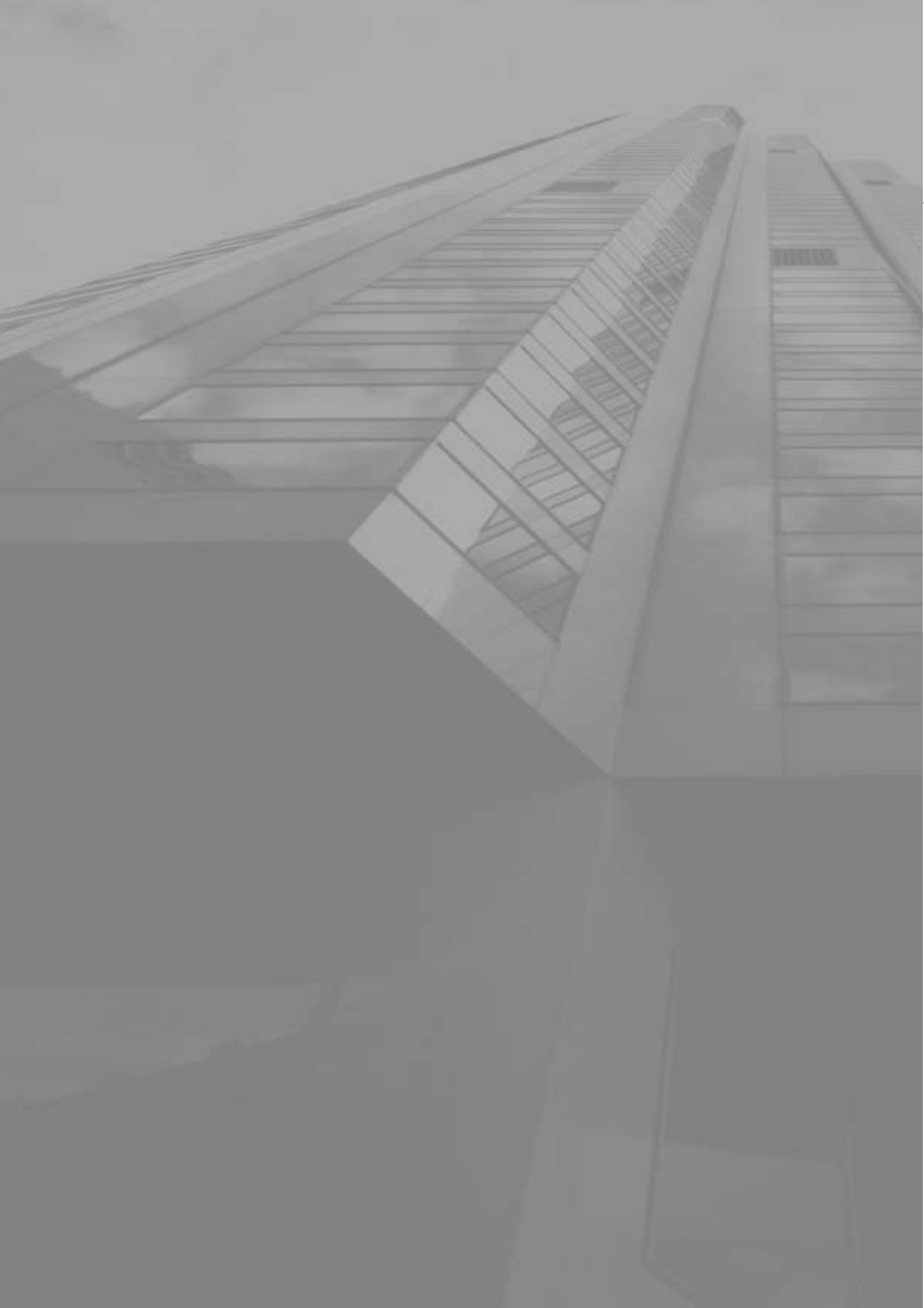
Asset Allocation in the Modern World

Summary Report

Summary Report

July 2007

This research was comissioned by the IPFET and the IPF Foint Research Programme



ASSET ALLOCATION IN THE MODERN WORLD

Summary Report

July 2007

The IPF Educational Trust and IPF Joint Research Programme

This research was commissioned and funded under the auspices of the IPF Educational Trust and IPF Joint Research Programme.

The three-year programme supports the IPF's wider goals of enhancing the knowledge, understanding and efficiency of property as an investment class. The initiative provides the UK property investment market with the ability to deliver substantial, objective, and high quality analysis on a structured basis. It will enable the whole industry to engage with the other financial markets, wider business community and government on a range of complementary issues.

The programme is funded by a cross-section of 16 businesses, representing key market participants. The IPF Educational Trust and the IPF gratefully acknowledge the contributing organisations:

Capital & Regional • Donaldsons • Grosvenor • GVA Grimley • Investment Property Databank • KPMG • LaSalle Investment Management • Land Securities • Lovells • Morley Fund Management • Nabarro Nathanson • Prudential Property Investment Managers • Quintain Estates & Development • Scottish Widows Investment Partnership • SJ Berwin and Strutt & Parker.

Research Team

Shaun A. Bond, *University of Cambridge, and University of Queensland*
Soosung Hwang, *City University*
Paul Mitchell, *Paul Mitchell Real Estate Consultancy*
Stephen E. Satchell, *University of Cambridge*

The Project Steering Group

The IPF appointed a project steering group to guide and assist the Research team. They gratefully acknowledge the contribution from:

Nick Tyrrell	*JP Morgan*
Robin Goodchild	*LaSalle Investment Managers*
Peter Pieria Grey	*The Wellcome Trust*
Malcolm Frodsham	*Investment Property Databank*

1. INTRODUCTION

This report examines the role of alternative assets in investment portfolios of UK institutional investors. It specifically addresses the question of whether or not the expected shift towards alternative asset classes is likely to come at the expense of allocations to commercial real estate. The key findings of the report are based on 2 sets of analysis: a series of interviews with institutional investors and investment consultancies, and a quantitative analysis of historical data. Institutional exposures to the mainstream asset classes, real estate and the alternatives are also reviewed.

The quantitative analysis uses historical data on the returns of the major core and alternative asset classes to assess their statistical characteristics and risk-return profiles. It also addresses a number of questions, such as:

- to what extent are the asset classes driven by common influences;
- what would an optimal investment portfolio look like;
- could alternative assets match or perhaps replicate the performance of real estate in a mixed-asset portfolio?

The conclusions from this analysis are summarised in Section 2 (with details of the data used outlined in the Appendix).

Because investors do not make their asset allocation decisions solely on the basis of ex-post historic data, a series of 60-90 minute interviews were also held with 13 investors and investment consultants. In addition to discussing the assumptions adopted in their asset allocation analyses, information was also collected on the asset allocation processes (including the basis by which the assumptions are derived and the indices used in their analysis), current and prospective asset class allocations, and the means by which exposures to asset classes are achieved.

These prospective performance assumptions are outlined in Section 3 and compared with the historic data. The implications of the forward-looking assumptions for allocations to real estate and the alternative asset classes are also briefly considered and compared with the conclusions derived from the analysis of the historic data. Institutions' actual allocations to the mainstream asset classes, real estate and the alternative markets are also summarised.

The conclusions derived from the historic analysis, investors' and consultants' assumptions, and from the examination of institution's allocations are synthesised in Section 4.

2. THE HISTORIC ANALYSIS – REAL ESTATE IN RELATION TO THE ALTERNATIVE ASSET CLASSES

Twelve asset classes were chosen for analysis (see Table 1). These were largely dictated by the discussions with investors and consultants. This led to some markets being excluded from the analysis (for example high-yield and emerging market bonds) which investors did not see as distinct but rather as part of a wider asset class. As noted in the Appendix, the sources used in the quantitative analysis, especially for the alternatives, had to be carefully selected. Monthly data was preferred to annual given the short time series for a number of the alternative asset classes. All-in-all, the available data enabled analysis for the period from August 1990 to July 2006.

To control for the valuation smoothing which downward-biases its underlying volatility, the real estate data were unsmoothed such that their standard deviation was in-line with the estimate outlined by Key and Marcato in the recent IPF/IPF Educational Trust Report *Index Smoothing and the Volatility of UK Commercial Property.*

For the quantitative analysis of the historic data, the asset classes are divided into two groups, a set of core assets and a set of alternative assets. These are shown in Table 1.

Table 1: Core and alternative asset classes under consideration

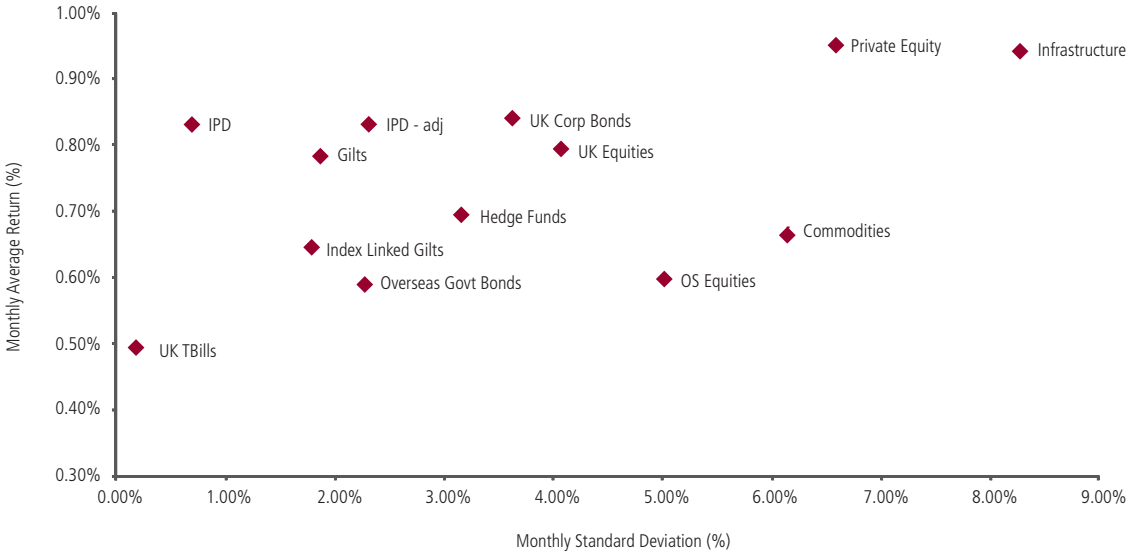
Core asset classes	Alternative asset classes
UK equities	Hedge funds
Overseas equities	Private equity
Conventional gilts	Commodities
Index-linked gilts	Infra-structure
UK corporate bonds	
Overseas bonds	
UK real estate	
Cash	

As can be seen from Figure 1, the risk-adjusted performance of the asset classes under consideration differed dramatically during the 16 year period to July 2006. The best performing asset classes, private equity and infrastructure, had slightly higher returns than real estate but they also displayed relatively high levels of risk. Hedge funds delivered lower returns than UK equities but with lower volatility.

Combined with its comparatively good returns, real estate's low volatility – even after adjusting for the effects of valuation smoothing – emphasises its attractive risk:return characteristics to investors over the last 16 years.

2. THE HISTORIC ANALYSIS – REAL ESTATE IN RELATION TO THE ALTERNATIVE ASSET CLASSES

Figure 1: Asset class monthly returns and standard deviations, August 1990 to July 2006



Extending the analysis to take account of the asset classes' diversifying qualities, hedge funds and private equity are found to have been highly correlated with UK and overseas equities over the last 16 years. Gilts, index-linked bonds, corporate bonds and overseas government bonds also show high levels of correlation with each other.

On the other hand, real estate and commodities have had lower correlation with the other asset classes. Furthermore, real estate had a negative correlation with commodities and infrastructure. These are interesting findings, as they point to the beneficial role real estate might play in mitigating portfolio risk in a mixed-asset portfolio which includes alternative assets. By contrast, the positive correlation between hedge funds, private equity and equities suggests less beneficial risk reduction from including these alongside the core asset holdings.

More detailed analysis is undertaken to explore these insights. In particular, the role of real estate in a portfolio is assessed by analysing the relative merits of adding real estate and each of the alternative asset classes to a portfolio initially made up of only bonds and equity. This is done in 2 ways.

First, by looking at the effect on the global minimum variance portfolio (i.e. the portfolio with the lowest level of risk among all 'efficient' portfolios). The reason for considering the global minimum variance portfolio is that it has the important and attractive property that it is free from any assumptions about asset–class returns.

This analysis indicates that, on the basis of evidence from the last 16 years, adding real estate to a portfolio of bonds and equities would have led to a substantial reduction in portfolio risk. By contrast, in no case does adding one of the alternative assets to the core asset mix achieve a significant level of risk reduction.

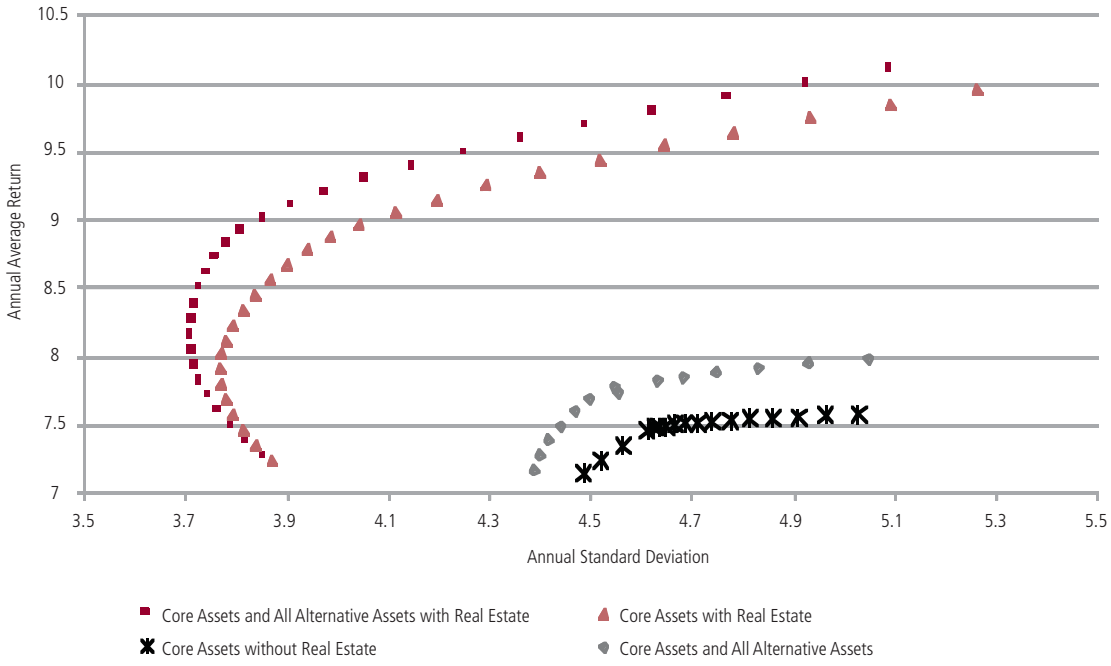
The second approach involves looking at the full extent of the efficient frontier, not just the minimum variance portfolio. Figure 2 illustrates the efficient frontier for different groupings of assets. The efficient frontier (for the "core portfolio") obtained without real estate or any of the alternative assets is in the far right bottom corner of the figure (the line marked by Xs). Adding the 4 alternative asset classes (but not real estate) to this core portfolio mix shifts the efficient frontier moderately to the left (thereby enabling higher returns for the same level of risk).

2. THE HISTORIC ANALYSIS – REAL ESTATE IN RELATION TO THE ALTERNATIVE ASSET CLASSES

The shift, however, is limited compared to the much larger one generated by adding just real estate to the core asset mix (shown by the red triangles). Finally using all possible asset classes expands the frontier even further (the curve represented by purple squares). However the expansion beyond the previous curve (i.e. the core assets and real estate) is marginal; this means that the diversification gain is not as large as that obtained by adding real estate to the core portfolio.

The conclusion drawn from both approaches, therefore, is that historically portfolio risk would have decreased dramatically by adding real estate to a mixed-asset portfolio whereas the inclusion of the 4 alternative assets would have played a somewhat limited role.

Figure 2: Efficient frontier on the basis of returns from January 1997 to July 2006 – with and without real estate and the alternative asset classes



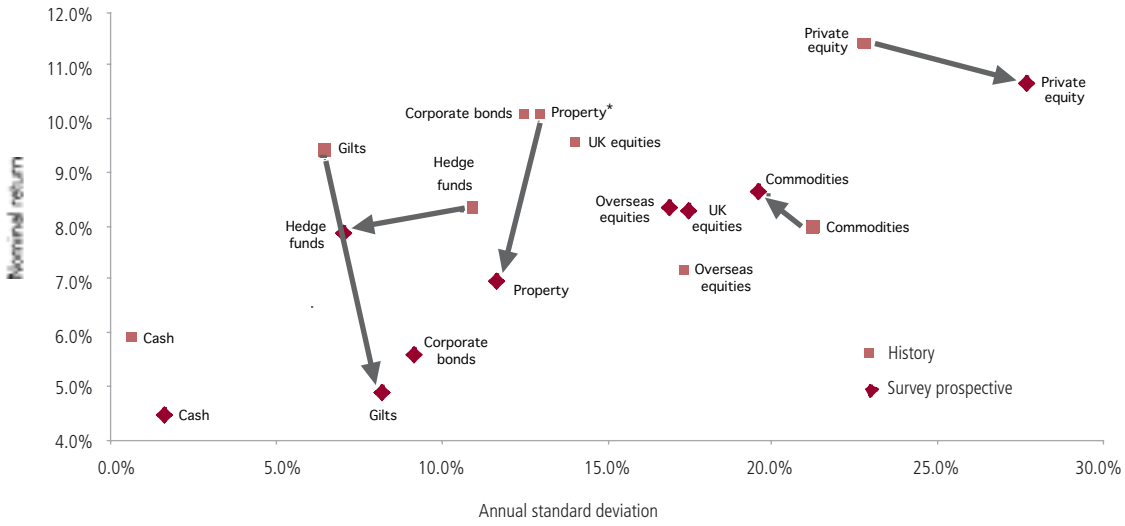
3. INVESTORS' AND ADVISERS' VIEWS

It was clear from the 13 interviews that investors and consultants do not base their asset allocation assumptions solely on historic ex-post data. Instead, they portray their asset allocation assumptions as ex ante, prospective views and derive them from a combination of economic theory, fundamental judgement, and expert opinion in addition to the historic performance.

Given this, it is not surprising that the assumptions adopted by investors and consultants in the survey differ from those displayed historically, as can be seen from Figure 3. For most asset classes, prospective returns are lower than the historic estimates outlined earlier in Figure 1. This is particularly the case for cash and for sovereign and corporate bonds where returns are lower without any corresponding reduction in risk.

Equally as remarkable is the perception of a sharp reduction in expected return – albeit with similar risk – for real estate compared to the last 15 years. Investors and consultants also anticipate a reduction in returns and an increase in risk for private equity. There are mixed expectations for the other alternatives – a lowering in both risk and return for hedge funds but an increase in returns and a lowering in risk for commodities.

Figure 3: Risk and return by asset class – survey averages vs August 1990–July 2006 history



*Assumption from IPF report Index Smoothing and the Volatility of UK Commercial Property, not August 1990 – July 2006

With respect to the correlations, interviewees' assumptions on average were close to history for bonds, equities and private equities. However, they were different for hedge funds and real estate: investors and consultants expect real estate's correlation with other asset classes to be much higher than over the last 15 years, whereas for hedge funds they expect correlations to be lower.

3. INVESTORS' AND ADVISERS' VIEWS

These assumptions therefore portray hedge funds in a much more favourable light than indicated by the historic analysis and imply correspondingly higher allocations. A major factor behind this is investors' expectation that their specific hedge fund managers will deliver above benchmark returns through superior alpha. The potential for such alpha is confirmed by academic research and contrasts with the much more limited potential for alpha from equity and bond fund managers. The assumptions also imply higher allocations to commodities and private equity, especially for investors with a high tolerance for risk, than the historic analysis. This said, allocations to real estate, while lower than indicated by the historic analysis, typically remain significant.

How does the analysis of historic data and of investors' assumptions compare with allocations in practice? Overall, institutional exposures to alternatives at present are low at 2–3% compared to around 10% for real estate, according to data provided by WM. Furthermore, investment in alternatives is not widespread (limited to about two-fifths of pension funds) and funds that do invest typically have exposures of around 4–5%; of those investing, only one in 20 have exposures over 10%.

Exposure to real estate is generally higher and more widespread. Sixty per cent of pension funds invest in real estate, most have exposures over 5% and a third of those invested have allocations of 10% or more. There is no evidence from the WM data that allocations have been undermined by the shift to alternatives. However, overall exposures to alternatives look set to double over the next few years.

This said, and in line with both the historic data analysis and investors' assumptions and plans, there are few indications that real estate allocations will be undermined by this expected increase in allocations to alternatives. It is particularly notable that the leading investors in alternatives (exemplified by organisations such as the Yale Endowment and in a more modest way by the largest UK institutions) have financed their forays into alternatives largely from their equity allocations; at the same time, their real estate allocations have remained higher than average. The only note of caution relates to the rapidly emerging infra-structure asset class where there was some talk during the interviews of allocations being financed partly from real estate.

4. CONCLUSIONS

This report examines the role of alternative assets in an institutional investor's portfolio. In particular, the question of whether investors will shift funds away from real estate towards alternative investment classes has been evaluated using both survey based information and a detailed analysis of historical data on investment returns. While there were some discrepancies between the findings of the survey and the results of the data analysis, the overall conclusions obtained from the report are remarkably consistent between the two sets of results.

Where there was a difference between investors' views on the performance characteristics of the asset classes under consideration from those used in the data analysis, it is because in making their asset allocation decisions, strategists do not rely exclusively on ex-post (historic) performance characteristics but also draw on expert opinion and fundamental beliefs. Overall, their views portray a natural order of risk and return under which risk-adjusted returns are comparable across asset classes.

These assumptions differ from history in two very significant ways. First, the returns expected from real estate are much lower than delivered over the last 10–15 years; real estate's correlation with other asset classes is also assumed to be higher. This has the effect of dampening real estate's risk-adjusted returns and diversifying capability and in turn implied allocations; even so, these allocations remain high absolutely and relative to current institutional exposures.

It is also noteworthy that, under this natural order of risk and return, investors' specific risk appetites become more influential in dictating their asset allocation – with bonds dominating the portfolios of the most risk-adverse investors, and private equity and commodities having higher weightings among the risk-loving.

The second way in which investors' views diverge from the historic analysis relates to the perceived potential to identify and tap into fund manager alpha. This is a very powerful factor behind their strategies towards alternatives, especially hedge funds, and contrasts with the limited potential perceived for equities. It implies higher risk-adjusted returns and lower correlations than the (historic) market statistics indicate, and higher allocations to hedge funds.

While such alpha has been accessible historically, there is a vigorous academic and practitioner debate on how sustainable it might be. However, even when the more conservative assumptions of the advisers are adopted, a high allocation to hedge funds is implied for all but the most risk-loving investors. Consistent with the pattern observed amongst institutional investors, such allocations are at the expense of equities.

Encouragingly for investors, there is strong support from the historical evidence to underlie the current trend towards the high and increasing allocations towards real estate. On a risk-adjusted basis, real estate has been one of the best performing asset classes over the sample period studied and it is noted that real estate has a significantly better risk hedging characteristic than any of the other asset classes. On the question of whether these benefits could have been derived from substituting members of the alternative asset group in place of real estate in a portfolio, the emphatic answer was that no other asset class could deliver the same level of portfolio hedging benefits as real estate.

The evidence from the quantitative analysis and survey expectations is that allocations to real estate will remain high. The risk-hedging benefits and the observed allocations to real estate, even among the most enthusiastic investors in alternative asset classes, emphasise the place of real estate in a modern world multi-asset portfolio.

APPENDIX. SOURCES OF DATA.

The sources of data used in the historic data analysis had to be carefully chosen. For most of the core asset classes, the sources broadly corresponded to those used by investors either to benchmark their portfolios or in their own analysis. For property, because the analysis was being undertaken on a monthly basis, IPD's Monthly Index had to be chosen over the Annual Index.

Choosing the data for the alternative asset classes was more challenging. For hedge funds, there is no definitive source for performance data. Hedge funds do not have any obligation to disclose their results but often release performance data for marketing purposes. Invariably it is unaudited and not independently verified. The information is collated by a number of database suppliers and combined into indices of aggregated fund performance. The coverage of the 'universe' and rules differ across suppliers, to the extent that their performances vary widely, even when covering the same type of hedge fund. The indices also tend to be affected by "selection", "instant history" and "survivorship" biases . The source chosen for analysis was the one most widely cited by interviewees, namely the CSFB-Tremont Index.

Private equity presents similar issues to hedge funds but these are arguably more challenging. In particular, there are very few sources of private equity performance: for the UK, these relate to those collated annually from the late 1980s by the BVCA (the industry's trade association) and, in relating to IRRS, are on a different basis to standard performance indices. Reflecting such difficulties, there was no uniformity amongst the investors and investment consultants in the sources they used for their own analyses. It was decided to proxy direct private equity performance through an index comprising all UK listed investment trusts in the private equity sector.

For commodities, the Goldman Sachs Commodity Index, which was most widely cited by investors and investment consultants, was used. Finally, in the same way as private equity, direct infra-structure performance was proxied through the Macquarie Global Infrastructure Index.

Printed on recycled paper

Investment Property Forum
New Broad Street House
35 New Broad Street
London EC2M 1NH

Telephone: 020 7194 7920
Fax: 020 7194 7921
Email: ipfoffice@ipf.org.uk
Web: www.ipf.org.uk