International real estate investment through indirect vehicles: an initial view of risk and return characteristics

Andrew Baum, PhD

Chairman, OPC
London and Reading, UK

Professor of Land Management
Department of Real Estate and Planning
University of Reading Business School
Whiteknights
Reading RG6 6AW
United Kingdom

e-mail: a.e.baum@rdg.ac.uk

Abstract

Investing in property is difficult. Property is non-transparent – prices and deals are not public. Property is illiquid - it takes time to buy and sell. Property needs expert management - and some property sectors need highly specialist managers. Property is also 'lumpy' – it is very difficult to diversify. These problems give risk-averse trustees or institutional investors a severe problem.

The efficient globalisation of bond and equity portfolios is not matched by a similar drive into internationally-diversified property portfolios. This is largely due to the sheer scale of investment required. Not even the world's richest investor can come close to being fully globally diversified through direct real estate ownership.

Indirect real estate may provide a solution. In this area of three different approaches are developing. These are: REITs; derivatives; and unlisted real estate funds and funds of (unlisted) funds. This paper will explore the likely impact of unlisted funds global real estate investing. Will they deliver real estate performance?

Keywords: real estate investment; internationalisation; unlisted vehicles

Note: in this paper the author uses the term "we" to denote the research team at OPC, whose significant contribution to this work is hereby acknowledged.

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1. Introduction

There has been a recent boom in the number and value of unlisted property funds, and investing in unlisted real estate vehicles has become an increasingly standard route to attaining international real estate exposure. Given the widespread use of optimisers and asset-liability models to estimate appropriate real estate allocations in the multi-asset portfolio and the increasing availability and attractiveness of unlisted vehicles, this paper explores the extent to which data derived from the direct market is likely to be an accurate indicator of the risk and return characteristics of unlisted vehicles.

This is an important issue in strategic asset allocation. Data derived from national direct real estate markets is typically used in optimisers to estimate the appropriate allocation to real estate; but the execution of the allocation may be through indirect real estate. Where listed real estate (such as US REITs) is used, the performance differences are expected to be significant and allowances will typically be made or wholly different data sets will be used However, where unlisted indirect vehicles are used, the performance differences are likely to be more subtle. Capital returns are appraisal-based, but the funds may be leveraged, and there are other differentiating factors including the dispersion of specific risk.

The growth in availability of these vehicles (described in Section 2) and their increasing use in property portfolios requires a full analysis. Are the returns on unlisted vehicles likely to be comparable to returns on direct property? Are the risk and liquidity profiles similar? Are the correlations with stocks and bonds (likely to be) reflective of direct real estate characteristics?

What is the likely impact on portfolio risk if limited capital is applied to a portfolio of indirect vehicles rather than in the purchase of 100% owned properties? What is the size of the consequent reduction in specific risk? And how much does this probable risk reduction lose its appeal as risk increases through the use of leveraged vehicles?

This paper makes an initial attempt to explore these under-researched issues by undertaking a survey of the performance of existing core unlisted (usually open-ended) investment vehicles where performance data is available (Sections 4 and 5). We then suggest the direction of the adjustments to direct property risk, return and correlation data that might be needed to describe investment in the more common limited-life closed-ended vehicles with gearing or leverage (Sections 6 and 7), The latter is made necessary because, with the exception of the market for open-ended vehicles in the UK and US, there is very limited data available concerning the historic return characteristics of unlisted

real estate vehicles; and the key difference between core open-ended funds and the closed-ended market is the higher levels of leverage applied by the latter. We establish an agenda for future more detailed research in Section 8.

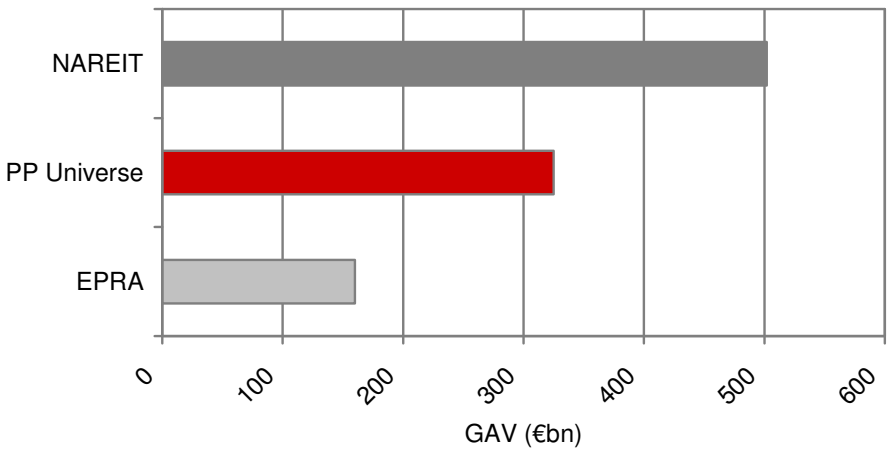
While primarily US and UK data is used, the scope of this report is Eurozone unlisted core (low risk) and core-plus (medium risk) property vehicles. We have used OPC's comprehensive Private Property dataset to describe the typical features of these vehicles as they affect risk and return.

The survey data introduced in Section 3 is derived from any markets where data is adequate: these include the UK and the US and other Eurozone markets - Germany and the Netherlands – which provide weaker but illustrative data. All four countries for which analysis will be undertaken have significant unlisted indirect property markets.

2. The European unlisted property market

As at October 2005, OPC's Private Property Universe, which describes the European universe of indirect property vehicles, is made up of some 789 funds worth over €320 billion. This compares to the NAREIT (National Association of Real Estate Investment Trusts) market capitalisation at June 2005 of $206 billion (€251 billion), and the EPRA (European Public Real Estate Association) market capitalisation at March 2005 of €80 billion. EPRA describes the European listed property market, while NAREIT describes US Real Estate Investment Trusts (REITs). Assuming 50% leverage, these market capitalisation values can be doubled to produce estimated gross asset values (GAVs) of €502 billion and €160 billion respectively. Figure 1 shows that the size of the European indirect market is large relative to EPRA and significant relative to NAREIT.

Figure 1: market sizes by GAV: unlisted funds, REITs and listed European property

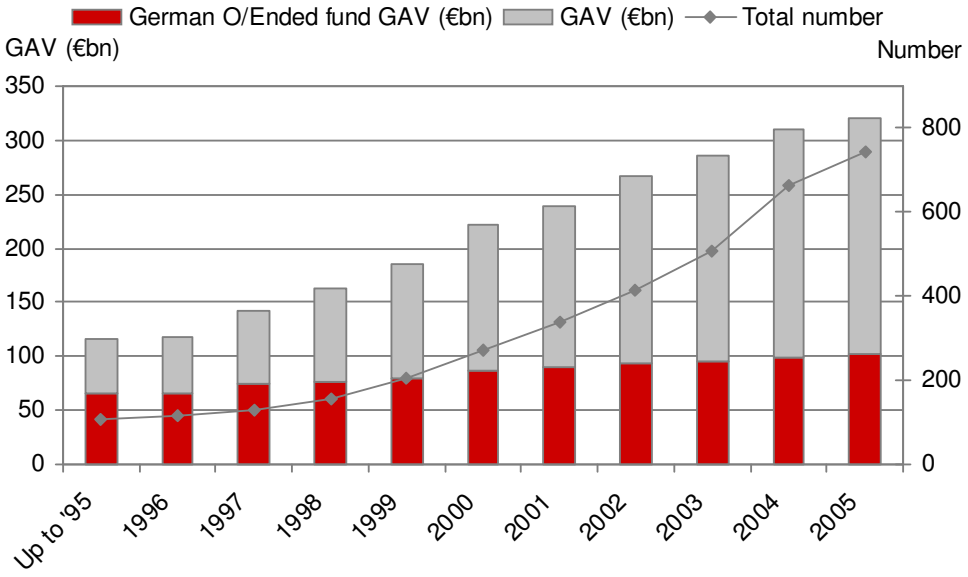


Source: OPC, 2005

The number of funds in the PP Universe has grown on average by over 20% per annum over the past ten years. Over the same period GAV has grown by 10% annually. This explosive growth is demonstrated in Figure 2.

The German open-ended real estate fund market describes a large, but arguably slowing, market against a backdrop of growth in other European non-listed real estate vehicles. In 1995 German open-ended real estate funds accounted for over 56% of the market. Today, though still large, they account for just 32% of the market.

Figure 2: growth of the European unlisted indirect market

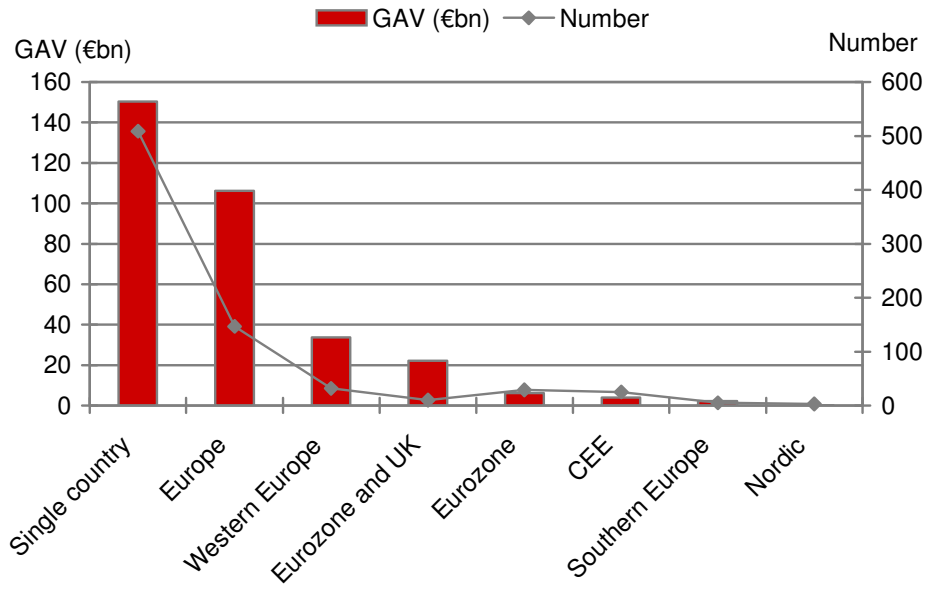


Source: OPC, 2005

The vehicles included in the Private Property Universe are classified as being one of three styles; core, value-added and opportunity. Core funds are low risk funds with no or low gearing, while opportunity funds are higher risk, higher target return funds with high levels of gearing.

Until the end of the 1990s European value-added and opportunity funds were barely in existence. At the beginning of the 1990s core funds accounted for 97% of the market by GAV. This compares to just over 64% at July 2005. Opportunity funds experienced rapid growth between 2000 and 2003 but value-added funds then emerged as the style of choice. 55% of the funds launched in 2005 were value-added.

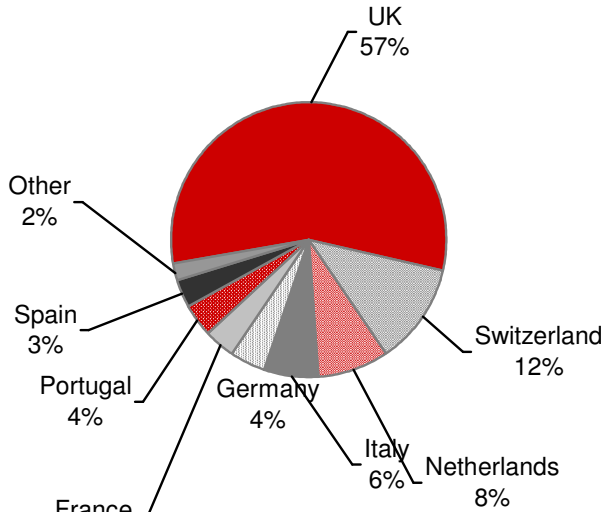
Figure 3: target location breakdown



Source: OPC, 2005

Figure 3 illustrates the PP Universe in terms of target region. It shows that the European non-listed real estate market is dominated by single country funds (46.3% by GAV and 67% by number). Other than 'single country', OPC defines vehicles as targeting one of seven regions. European funds, the second largest by target region, account for 32.7% of the PP Universe by GAV. Over the past two years vehicles targeting emerging markets such as Central and Eastern Europe (CEE) have increased significantly.

Figure 4: single country vehicle analysis (by GAV €bn)

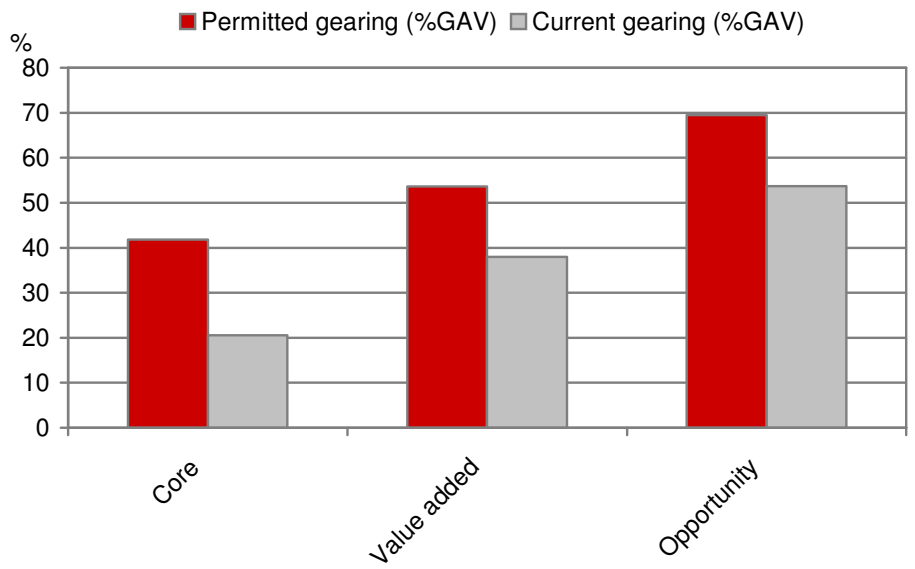


Source: OPC, 2005

Figure 4 analyses the breakdown of single country funds (illustrated in Figure 3) based on GAV (€bn). It shows that single country funds investing in the UK dominate by GAV.

OPC also records permitted gearing based on the level of debt in a vehicle as a percentage of GAV. Funds have permitted gearing levels ranging up to 85%, although typical gearing levels are far more conservative than this. Figure 5 illustrates that all vehicle styles carry a lower level of debt than is permitted. Actual gearing levels average 25% for core funds, just below 40% for value-added funds, and just below 55% for opportunity funds. Permitted gearing levels are around 40%, 55% and 70% respectively.

Figure 5: current and permitted gearing by fund style



Source: OPC, 2005

Vehicles in the PP Universe have a variety of investment restrictions aimed at limiting the risk of a particular portfolio of investments. Diversified funds may be permitted to invest between 30% and 50% of GAV in a particular sector. Pan-European funds may have prescribed limits on the countries in which they can invest, which may be anywhere between 30% and 50% of GAV in each country. Development is limited to anywhere between 10% and 30% of GAV. Multi-asset portfolios are also likely to prescribe some kind of investment restriction based on the amount invested in any single asset. This is typically in the region of 15% of GAV. Similarly, income restrictions are likely to be placed on a fund. Income derived from a single tenant/company is typically limited to around 15% of GAV.

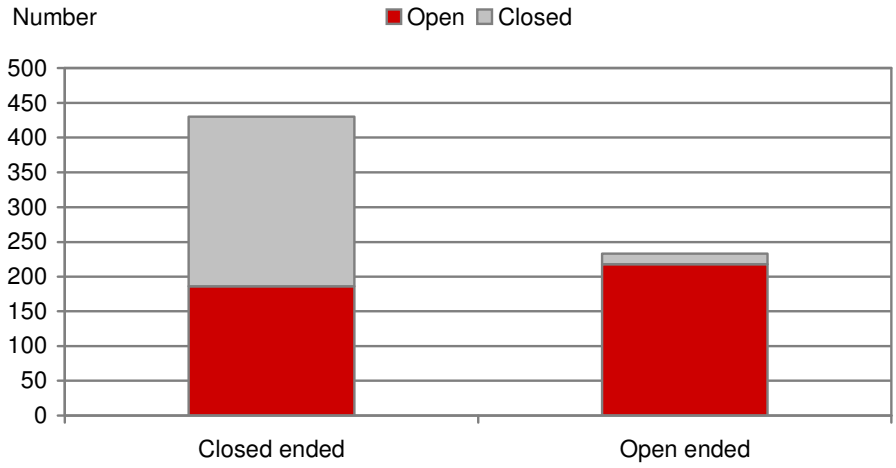
As illustrated in Figure 6, OPC classifies funds as being either open-ended or closed-ended. Open-ended funds do not typically have a finite life and are usually open for investment and always open for investors to withdraw capital. Closed-ended funds, on the other hand, typically have a finite life and

are not always open to new money. Closed ended funds are likely to go through the various capital raising/closing stages and may, at some later date, re-open to new investors.

This is not, however, necessarily the case. A small number of open-ended funds, 15 at the time of writing, were currently closed to investors, likely to be a result of having taken on too much cash and needing to close for a brief period while cash is invested in assets. Conversely, the proportion of closed-ended funds open for investment was much lower than for open-ended funds.

The data suggests that at either end of a risk scale there are two different types of indirect structure. At one end of the scale is the opportunity fund, with more likely distortion of direct real estate; and at the other is the core, open-end real estate fund, with a better chance of replicating the direct market.

Figure 6: closed and open ended vehicles currently open/closed for investment



Source: OPC, 2005

3. Fund performance: data sources

3.1 Introduction

There is a limited number of data sources available in the market place providing historic performance data for non-listed real estate funds. Five secondary sources are currently available.

These are as follows:

- The Pension Consulting Alliance (PCA) Opportunity Fund Surveys 2001-5 (US)
- The Investment Property Databank (IPD) Directory of UK and European vehicles
- The HSBC/Association of Property Unit Trusts (APUT)/IPD UK index
- The Association of Investors in Non-Listed Real Estate Vehicles (INREV) Index (Europe)
- The National Council of Real Estate Investment Fiduciaries (NCREIF) Open-End Diversified Core Equity Index (NFI-ODCE) (US)

The following section provides a background to these data sources. Results are reported and analysed in Section 4.

3.2 The PCA opportunity fund surveys 2001-5

(Results are reported for the 2001 survey only.) In the 2001 PCA survey, data was collected on over 187 partnerships raised during the time period of 1988 through 2000. The aim of the survey was to begin the process of creating greater transparency regarding the returns generated by the opportunity fund community.

The reports analyze the investment performance, investment approaches (direct, joint ventures, international) and reporting practices of firms investing in this segment of the market.

The early partnerships formed during the period of 1988 to 1995 appeared in 2001 to be generally on track to produce 20% net returns, assuming the valuations and projections reported by the general partners to be accurate. The returns delivered showed a low correlation to the direct real estate market over the analysis period.

The reported loan-to-cost/value ratios were surprisingly low. The median loan-to-cost/value ratio was reported to be close to 50% in each year from 1993 through 1999. There was a wide variability in the reported results with some firms using no debt and others reporting loan to-cost/value ratios exceeding 80%.

3.3 IPD UK vehicle directory return data, 2004

The IPD return data analyses the performance of UK Limited Partnerships and Property Unit Trusts measured by Investment Property Databank's Portfolio Analysis Service. The performance is analysed at three different levels:

- Standing investments
- Portfolio returns including the impacts of buying, selling and developments
- Returns to investors allowing for the additional impact of cash, gearing and management fees

The performance data is based on the performance of 41 Limited Partnerships (LPs) and 22 Property Unit Trusts (PUTs) with a total GAV of £17.8 billion. This group represented around 60% of the total capital value of unlisted vehicles, and 27% of the 233-fund universe at December 2003.

3.4 IPD European vehicle directory return data, 2003

The IPD Directory data analyses the performance data of European funds based on the performance data of vehicles located in the Netherlands, Germany and Portugal.

IPD analysed the performance of 19 unlisted Dutch property portfolios with a combined value of €14.1 billion at the end of 2003. These vehicles only invest in Dutch property and primarily target institutional investors. The analysis was based on a mix of core and value-added funds.

IPD measured the performance of 10 unlisted Portuguese property portfolios with a combined value of €2 billion. These vehicles only invest in Portuguese real estate and primarily target institutional investors. The sample of 10 portfolios accounted for 41% of the IPD Portugal databank at the end of 2003.

Finally, IPD measured the performance of open-ended funds and compared the performance of the public and special open-ended funds (Spezialfonds). 21 funds were included in the analysis. These funds invested in both Germany and outside their domestic market.

3.5 The European Association for Investors in Non-Listed Real Estate Vehicles (INREV)

The INREV Index began in 2005 to cover performance data for non-listed vehicles from 2001 onwards. At 2005 the index covered 100 vehicles across Germany, Italy, the Netherlands, Portugal, Switzerland and the UK. The total NAV of the index was €77 billion.

The index is constructed using data from individual funds based on after-tax financial performance. The majority of the vehicles invest domestically, with some investing cross-border.

The indices are structured to include country, sector, pan-European and all-vehicles level. The headline INREV Index is the comprehensive all-vehicles Index, which includes the aggregate NAV-weighted performance of every vehicle included in the INREV indices. Those vehicles that meet the criterion of being a specialist vehicle are included in the relevant sub-indices. At 2005 the index was made up of various vehicle styles, as follows: core funds, 84%; value-added funds, 15%; opportunity funds, 1%. Unfortunately, no performance data capable of comparison with a direct property market benchmark has yet been made available by INREV,

3.6 The HSBC/Association of Property Unit Trusts (APUT)/IPD Indices

UK Pooled Property Fund Indices are jointly published by APUT and HSBC. The data is compiled and calculated by IPD. In 2005 the index comprised 33 vehicles with a GAV of £16.5 billion.

The index is designed to bring greater transparency to the Property Unit Trust, Managed Pension Fund and, more recently, the Limited Partnership industry; provide fuller and more timely information to both existing and potential investors (to a target of 10 working days); and to allow investors to compare performance of individual vehicles with the rest of the Pooled Property sector.

It splits the participating funds into three categories - balanced funds (diversified funds), specialist vehicles (focusing on a sector), and managed property funds (managed mainly by insurance companies). Their performance is measured by NAV to NAV returns. These are compiled from quarterly NAV per unit and distribution records, supplied to IPD by individual fund managers.

3.7 The US National Council of Real Estate Fiduciaries (NCREIF)

The NCREIF Fund Index - Open-End Diversified Core Equity (NFI-ODCE) is an index of investment returns reporting on both a historical and current basis the results of 26 (at 2005) US open-ended commingled funds pursuing a core investment strategy, some of which have performance histories dating back to 1978.

Of the 26 funds included in the NFI-ODCE Index, 13 funds were currently in operation while the other 13 had ceased operations and liquidated assets.

All funds included within the index meet the following criteria:

- At least 80% of the net asset value must be invested in direct real estate
- At least 90% must be invested in US assets
- At least 80% must be invested in office, industrial, residential and retail assets
- At least 80% must be invested in operating properties
- Leverage must be less than 40% of GAV

4. Data analysis

4.1 Data availability and samples

In this section we use the publicly available data described above to compare the returns delivered by direct real estate as represented by national indices with the returns reported by indirect vehicles. The countries included in the following analysis are:

- UK
- US
- Germany
- Netherlands

As Table 1 (see appendix) shows, the data series for the UK and US are relatively long running. Good data from the direct market in the UK is available from 1981, and for open-ended funds (Property Unit Trusts) from 1990. Good datasets from the US direct and open-ended markets are both available from 1978.

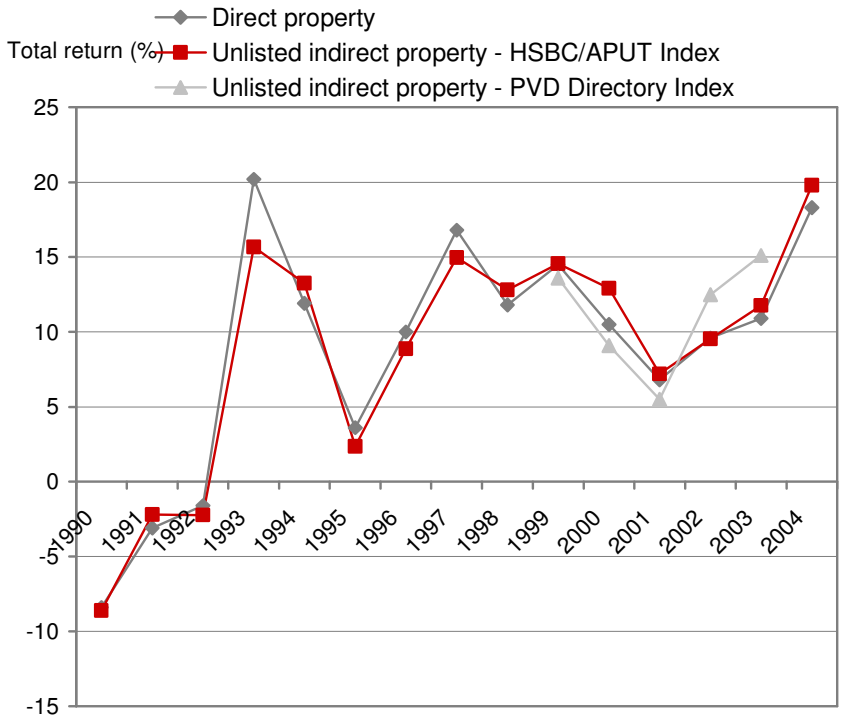
Data has been taken from the IPD Directory of UK Property Vehicles (2004) on the performance of UK Limited Partnerships over the period 1999-2003. Performance data for the unlisted markets is only available from 1998-2003 in Germany and from 1999-2003 in the Netherlands.

4.2 Measuring risk and return characteristics

In this section the performance characteristics of the direct and unlisted indirect property markets of the UK, US, Germany and the Netherlands are examined by assessing to what extent returns in the direct and indirect unlisted property markets are similar, and to what extent they are correlated. Average historic returns and absolute volatility are considered: these are the inputs relevant to an optimisation exercise and also provide a Sharpe ratio. The tracking error between unlisted indirect and direct markets is also investigated. Finally, the correlation between direct and unlisted indirect markets is examined. The correlations between the returns from equities, bonds and both forms of property are also considered over the analysis period to assess the diversification potential of both forms of property investment against equities and bonds.

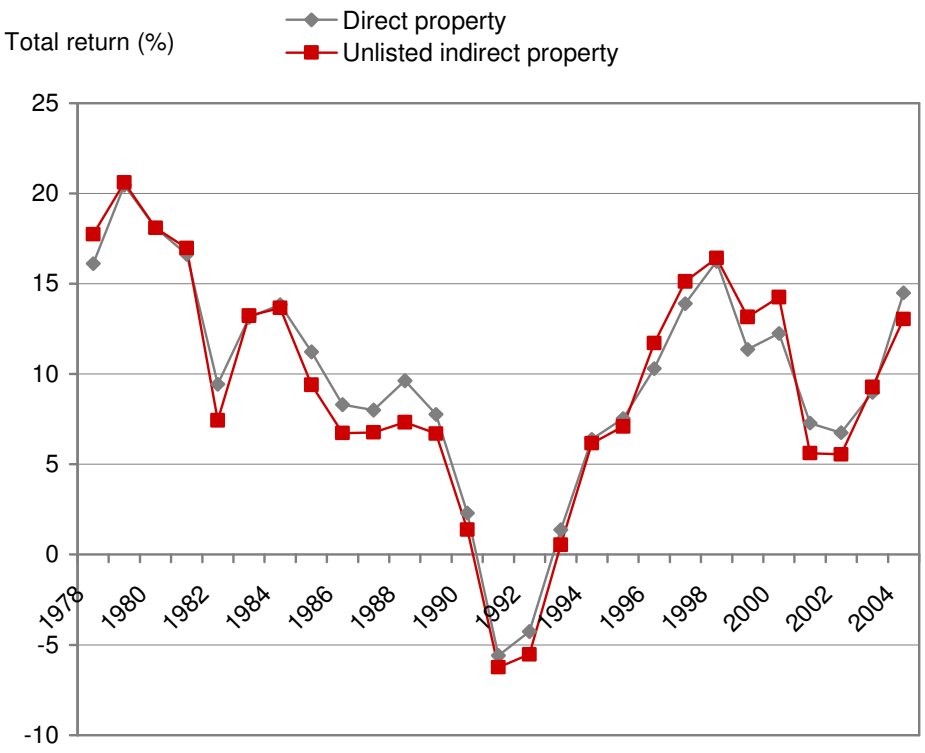
Figures 7-10 below show the total returns of the direct and the unlisted indirect property markets in the UK, US, Germany and the Netherlands.

Figure 7: UK – direct and indirect market total returns (1990-2004)



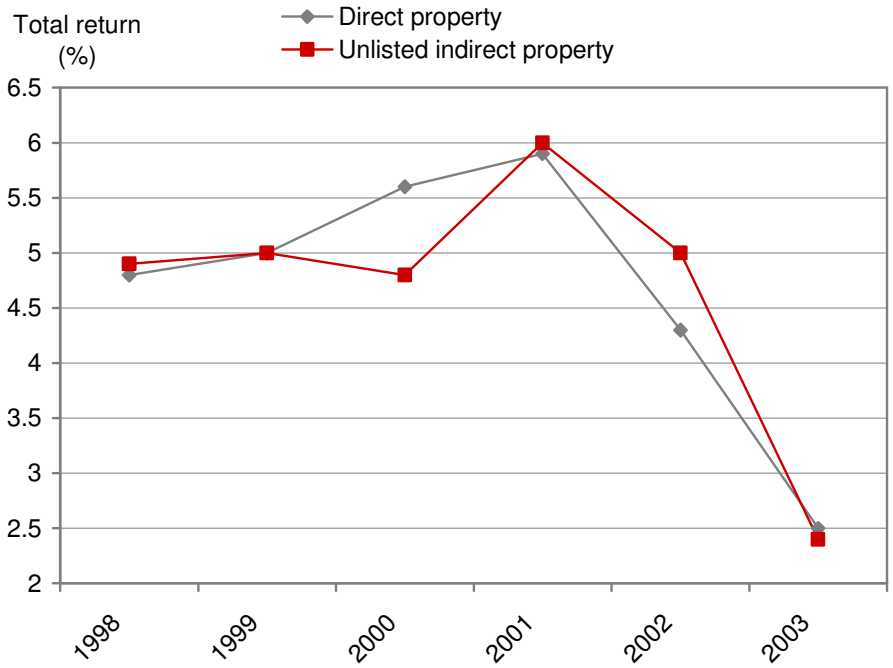
Source: IPD, HSBC/APUT Index, 2005

Figure 8: the US – direct and indirect market total returns (1978-2004)



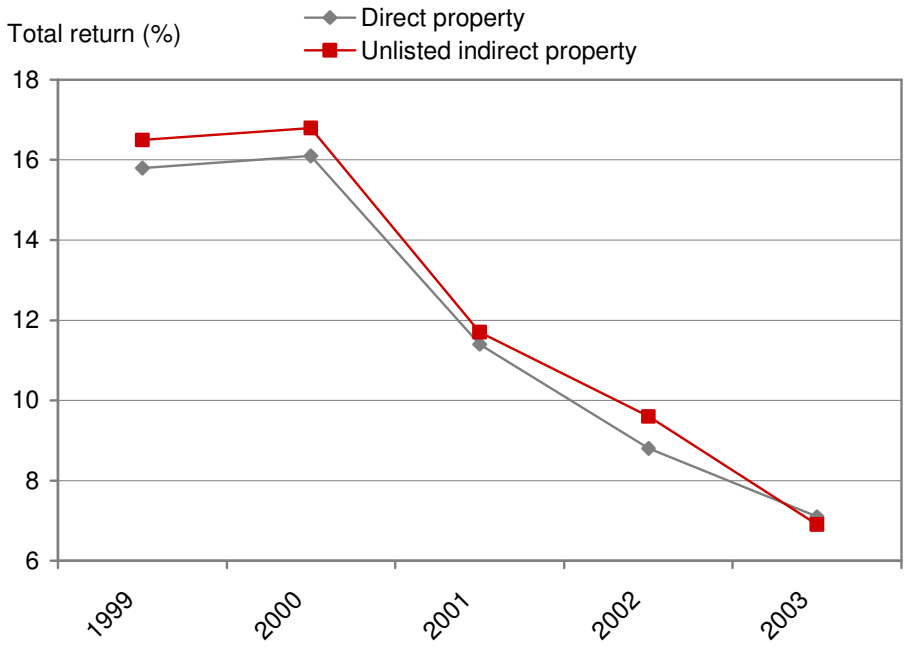
Source: NCREIF, 2005

Figure 9: Germany – direct and indirect market total returns (1998-2003)



Source: IPD, 2004

Figure 10: The Netherlands – direct and indirect market total returns (1999-2003)



Source: IPD, 2004

4.3 UK results

The data illustrated in Figures 7-10 shows that in the UK the unlisted indirect funds which comprise the HSBC/APUT Index have outperformed the direct index at the all-property level in eight out of 15 years. Average annual returns over the analysis period for the two investment types reached similar levels of 8.8% for direct property and 8.7% for the HSBC/APUT index. This indicates that unlisted indirect funds have achieved a higher total return than direct property in more than half of the years in the analysis period and have produced overall under-performance just about equal to the fees charged, which are typically higher than for direct portfolios.

A more obvious pattern arises towards the end of the data period. From 1998-2004 the HSBC/APUT Index out-performed the direct market in six out of seven years. This improvement in the out-performance of property funds over direct property may be attributable to gearing. Increased levels of borrowing as a result of low interest rates may have led to the out-performance of the unlisted indirect market as shown in Figure 7 above.

Data on the performance of UK Limited Partnerships suggests that over the period 1999-2003 investments in property via this structure achieved a higher return than investments in direct property. Over the period for which data is available, investments in Limited Partnerships achieved an average annual total return of 11.2% while direct property investments achieved a 10.5% total return on average.

In three out of the five years for which performance data is available, Limited Partnerships out-performed the direct market, with an average out-performance of 0.4%. Similarly to the performance of the HSBC/APUT Index, it is apparent from analysis of the historic performance data that during the latter years the unlisted market has out-performed on a consistent basis. This may reflect the well-known J-curve effect, by which is meant the tendency for fund establishment and property acquisition costs to damage return I the early stages of a fund's life.

As at end December 2004 OPC estimated that the UK fund universe had a market capitalisation of approximately £48 billion. Of this £48 billion, Property Unit Trusts had a total gross asset value of £17.3 billion. The HSBC/APUT Index represents over 92% of the Property Unit Trust market and approximately 33% of the unlisted indirect market in the UK. It is thus not so large a proportion of the UK market that high correlations are inevitable.

The data taken from the IPD UK Directory describing the performance of Limited Partnerships is based on 41 funds with a total gross asset value of £9.4 billion, as at end December 2003. This represents 66% of the Limited Partnership market, valued at £14.4 billion, and 28% of the UK unlisted indirect market, measured at £33.3 billion as at end December 2003. Again, this is not a particularly large proportion of the UK market. As a result, the high correlations can be said to be meaningful.

Returns from unlisted indirect funds were marginally less volatile than investments in direct property. The standard deviation as calculated using the IPD UK Annual Index (2005) is 8.1% whereas the corresponding figure for the HSBC/APUT Index is 8.0%.

Analysis of the standard deviation of returns achieved by both UK Limited Partnerships and UK direct property over the period 1999-2003 suggests that investments in the direct market have been less volatile than these indirect investments. Over the analysis period the returns from direct property recorded a standard deviation of 2.8%, while UK Limited Partnerships total returns produced a significantly higher standard deviation of 3.9%. This significantly higher volatility in the returns from UK Limited Partnerships occured as a result of the huge increase in total returns from 5.5% in 2001 to 15.1% in 2003. Over the same period, returns in the direct UK property market increased by just 4.1%, from 6.8% in 2001 to 10.9% in 2003.

4.4 US results

The US historic return profiles of direct and unlisted indirect property show similar results. Analysis of the NCREIF NPI Returns Index and NCREIF Open-ended Diversified Core Equity Fund Index shows that in just 10 out of 27 years unlisted indirect funds have achieved a higher total return than direct property. While results over the data period are mixed, a clearer picture can be seen in the US than the UK where the split of out-performance of the direct market is more evenly divided.

Over the period 1978-2004 average annual total returns for direct property were 9.7% per annum, compared with 9.3% achieved by unlisted indirect funds net of fees. The out-performance of direct property might be attributed to the larger required holdings of cash required in funds in order to be able to meet any redemptions requested by investors. The low return achieved by cash held within the fund's portfolio will reduce the overall fund performance.

As at December 2004 the Open-ended Diversified Core Equity Fund Index represented $5.4 billion worth of investments, while the NCREIF NPI Returns Index had a total gross asset value of $156.3 billion. This is therefore a small sample an results are meaningful.

The data suggests a higher risk associated with investing in unlisted indirect funds as opposed to direct property. Over the data period from 1978-2004 a standard deviation of 6.2% is calculated for direct property, whereas the corresponding figure for unlisted indirect property returns was 6.7%. The unlisted indirect index is likely to have higher volatility because it comprises fewer properties and has a higher specific risk.

4.5 Eurozone results

An analysis of Germany and the Netherlands is more challenging due to the significantly shorter runs of data on unlisted indirect fund performance shown in Table 1.

In Germany data on the performance of unlisted indirect funds was at the time of writing available for a total of six years, running from 1998-2003. The index suggests that over the period direct and unlisted indirect property have performed in the same way. Average total returns over the period have been equal at 4.7%. In four out of the six years for which data is available returns from direct and unlisted indirect property have been virtually identical (to one decimal place).

However, this is of limited significance. The closeness in performance of direct and unlisted indirect property in Germany is attributable to the fact that many of the same assets are included in the direct property index and the unlisted index. Due to the large scale of the German open-ended funds they dominate the direct index. OPC's dataset indicates that as end December 2004 the German open-ended funds had a total market capitalisation of €103.6 billion, while the DID/IPD German Property Index, which comprised 3,490 properties, had a value of €61.1 billion.

Data on the performance of unlisted indirect funds in the Netherlands is sparse. At the time of writing, IPD provided data over the period 1999-2003. However, despite poor data availability, it is apparent that there is a trend in the performance of direct and unlisted indirect property. Property funds in the Netherlands out-performed direct property in four out of the five years for which data is available. Average total returns for direct property over 1999-2003 were 11.8%, while unlisted indirect funds achieved a return of 12.3%.

Identical and amazingly low standard deviations of 1.2% have been calculated for German direct property and German unlisted indirect funds over the period 1998-2003.

The Dutch unlisted indirect property market shows a higher standard deviation and therefore a higher risk profile than the direct market. Over the data period from 1999-2003 the unlisted indirect market saw a standard deviation of 4.3% whereas the corresponding figure for the direct market in the Netherlands was 4.0%. The reasons for the apparent higher risk associated with investing in unlisted indirect funds in the Netherlands are more difficult to identify, but gearing is a possible explanation for this.

The analysis periods for the Netherlands and Germany are short. Consequently calculations must be treated with care and should not be taken to give a full representation of the relative performance characteristics of direct and unlisted indirect property markets over the long term.

4.6 Sharpe ratios

The Sharpe Ratio measures the ratio of return to volatility. It can be used in comparing the performance of two portfolios in terms of risk-adjusted return.

The ratio is defined as:

$$\frac{\textit{Mean return}}{\textit{Standard deviation of return}}$$

A high Sharpe ratio implies that a portfolio is achieving high returns for each unit of risk.

Table 2 below shows Sharpe ratios for each country included in the above analysis.

Table 2: Sharpe ratios

	UK (HSBC/APUT Index) (%)	UK (PVD Directory Index) (%)	US (%)	Germany (%)	Netherlands (%)
	1990-2004	1999-2003	1978-2004	1998-2003	1999-2003
Direct market	1.08	3.78	1.57	3.86	2.92
Unlisted indirect market	1.09	2.89	1.38	3.90	2.85

Source: OPC, 2005

As can be seen from Table 2, the Sharpe ratios for direct and unlisted indirect property in each of the countries included in the analysis are largely similar with the exception of UK Limited Partnerships. In the UK Property Unit Trust, US, Germany and Netherlands markets there is not a significant difference between the ratio of returns to volatility in the direct and unlisted sectors.

4.7 Tracking error

The tracking error of unlisted indirect property against direct property has been calculated for the four countries included in the analysis. Tracking error measures the standard deviation of the excess performance of a particular investment against a benchmark.

Table 3 below shows the tracking errors calculated for the UK, US, Germany and Netherlands over the respective time periods for which data is available.

Table 3: tracking errors

Country	Tracking error (%)
UK (HSBC/APUT Index)	1.68
UK (PVD Directory Index)	2.65
US	1.21
Germany	0.48
Netherlands	0.42

The above table shows that the highest tracking error of unlisted indirect property against direct property is found in the UK Limited Partnerships market. The relatively high tracking error of 2.65% represents the amount by which the excess returns of unlisted indirect property above direct property deviate from the average excess return. This data covers a very short period and individual year errors have a big impact. Nonetheless, this does raise a question about the performance characteristics of closed-ended funds.

The tracking error of the HSBC/APUT Index against the direct IPD UK Annual Index is relatively high at 1.68%. It is expected that a lower tracking error would occur in this market as Figure 7 above would indicate that the HSBC/APUT Index has tracked the direct property index relatively closely. However, the tracking error of 1.68% can be explained by the large differences in returns from the unlisted indirect market compared to the direct market in 1993, 1997 and 2000 where absolute differences in returns were recorded at 4.5%, 1.8% and 2.4% respectively.

A lower tracking error of 1.21% is found in the US, and the Dutch and German markets each show considerably lower tracking errors. In Germany this occurs as a result of almost identical total returns

in four out of the six years for which data is available. This leads to virtually zero out-performance in these years and as a consequence a low tracking error. A similar result is found in the Netherlands. In this case, however, the low tracking error occurs as a result of the consistent out-performance of unlisted indirect funds over direct property in four out of the five years for which data is available.

4.8 Correlations

Table 4: correlations

Country	Correlation
UK[1] (HSBC/APUT Index)	0.98
UK[2] (PVD Directory Index)	0.73
US	0.99
Germany	0.92
Netherlands	0.99

Source: OPC, 2005

IAs can be seen in Table 4, there is a very strong relationship between the returns from direct property and unlisted indirect property in the UK, US, Germany and the Netherlands with the single exception of the UK limited partnerships. Correlations of between 0.92 and 0.99 are indicative of strongly associated series.

5. Direct and indirect property as a diversifier of bonds and equities

Tables 5 and 6 below shows the long term correlations between direct and unlisted indirect property respectively with equity and bond returns for the four countries included in the above analysis.

As can be seen in these tables, property has been a good diversifier against bonds and equities. In the UK and the US, unlisted indirect property has also been a good diversifier against bonds and equities.

Correlations for indirect unlisted property against equities and bonds are very similar to the results from correlating direct property returns against returns from equities and bonds. This similarity in results occurs due to the high correlation in both the UK and US markets between the returns from unlisted indirect property and direct property.

This analysis strongly indicates that core open-ended funds have been similarly good diversifiers against equities and bonds as have been the national indices of direct property returns.

Table 5: direct property correlations

		Property (direct)	Bonds	Equities
UK (1971-2004)	Property (direct)	1.00	0.05	0.19
	Bonds	-	1.00	0.63
	Equities	-	-	1.00
US (1978-2003)	Property (direct)	1.00	-0.21	0.10
	Bonds	-	1.00	0.22
	Equities	-	-	1.00
Germany (1996-2004)	Property (direct)	1.00	-0.15	-0.23
	Bonds	-	1.00	-0.41
	Equities	-	-	1.00
Netherlands (1998-2004)	Property (direct)	1.00	-0.25	0.35
	Bonds	-	1.00	-0.08
	Equities	-	-	1.00

Source: OPC, 2005

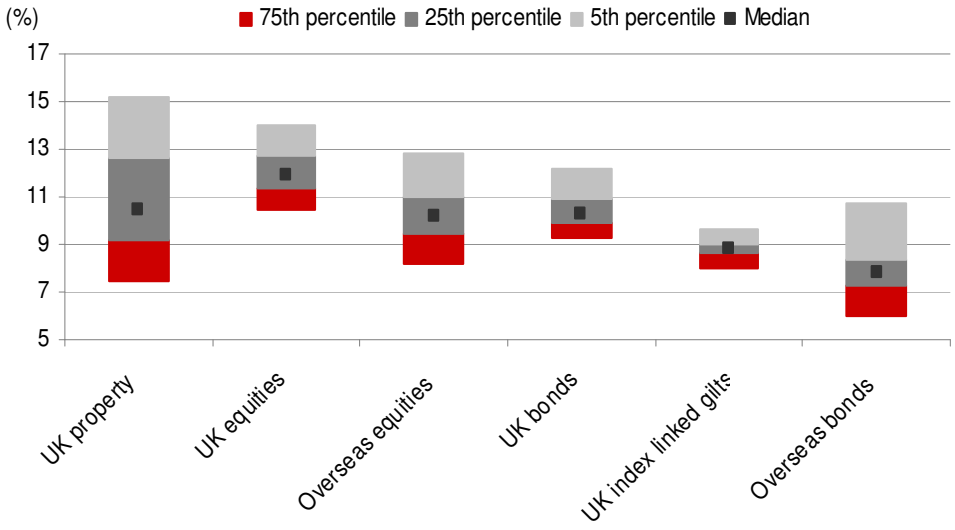
Table 6: unlisted indirect property correlations

		Property (unlisted indirect)	Bonds	Equities
UK (1990-2004)	Property (HSBC/APUT Index)[1]	1.00	-0.17	0.14
	Bonds	-	1.00	0.43
	Equities	-	-	1.00
UK (1999-2003)	Property (PVD Directory Index)[2]	1.00	-0.33	0.62
	Bonds	-	1.00	-0.84
	Equities	-	-	1.00
US (1978-2004)	Property (unlisted indirect)	1.00	-0.27	0.10
	Bonds	-	1.00	0.22
	Equities	-	-	1.00
Germany (1998-2003)	Property (unlisted indirect)	1.00	0.13	-0.55
	Bonds	-	1.00	-0.55
	Equities	-	-	1.00
Netherlands (1999-2003)	Property (unlisted indirect)	1.00	-0.37	0.46
	Bonds	-	1.00	-0.79
	Equities	-	-	1.00

Source: OPC, 2005

6. Specific risk in direct real estate portfolios

Figure 11: WM percentile rankings – 1992-2001 total returns



Source: WM 2000 Index

Figure 11 shows the range of total returns achieved in the UK over the period 1992-2001 by different asset classes. It is apparent from this graph that over this period the range of returns achieved by property managers is far greater than those achieved by equity and bond managers.

The possible explanations for this are as follows. Either: there is more variation in manager styles and manager alpha in real estate than in equities and bonds; or there is more specific risk in property portfolios than in equity and bond portfolios.

The latter is a much more likely explanation. Surveys (see, for example, Baum and Key, 2000) suggest that UK property fund managers do not adopt widely different styles. On the other hand, direct property portfolios carry a much higher quantity of specific risk. This is a result of three factors.

1) The average size of a property investment is high. The mean UK portfolio size is around £500m while the mean lot size is around £11m, meaning the average portfolio would contain around 40-45 assets.

2) It is difficult to control the dispersion of lot sizes, which are unevenly distributed: shopping centres are typically bigger investments than logistics facilities. This further increases specific risk: see Morrell (1997).

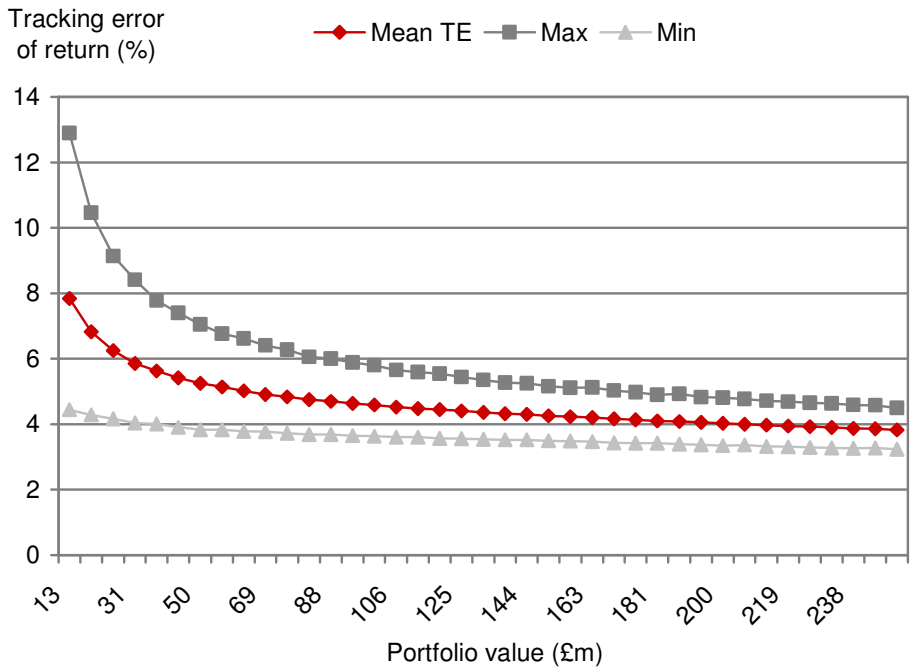
These issues together reduce the ability of a manager to use naïve diversification to reduce specific risk. As reported below, the average portfolio will typically produce a tracking error of around 3-4%.

3) There is little or no sampling with replacement in direct real estate portfolios. This means that portfolio A will contain different stock than portfolio B, not typically the case in equity and bond portfolios. This increases the differences in returns between portfolios.

Hence data derived from the relevant IPD index which describes the returns achieved by direct property investments will be misleading in indicating the returns experienced by a direct investor. In practice, a large tracking error around the index return will be suffered.

To illustrate this issue we used an available UK dataset and undertook a portfolio simulation. We obtained data on 40 retail, 30 office and 30 industrial properties' individual return series (using monthly returns from 1992 to 1997); we ran 5,000 portfolio simulations for given portfolio sizes of 2 to 100 properties; and we measured the annualised average risk (tracking error) and risk distribution for each portfolio size. The results are reported below.

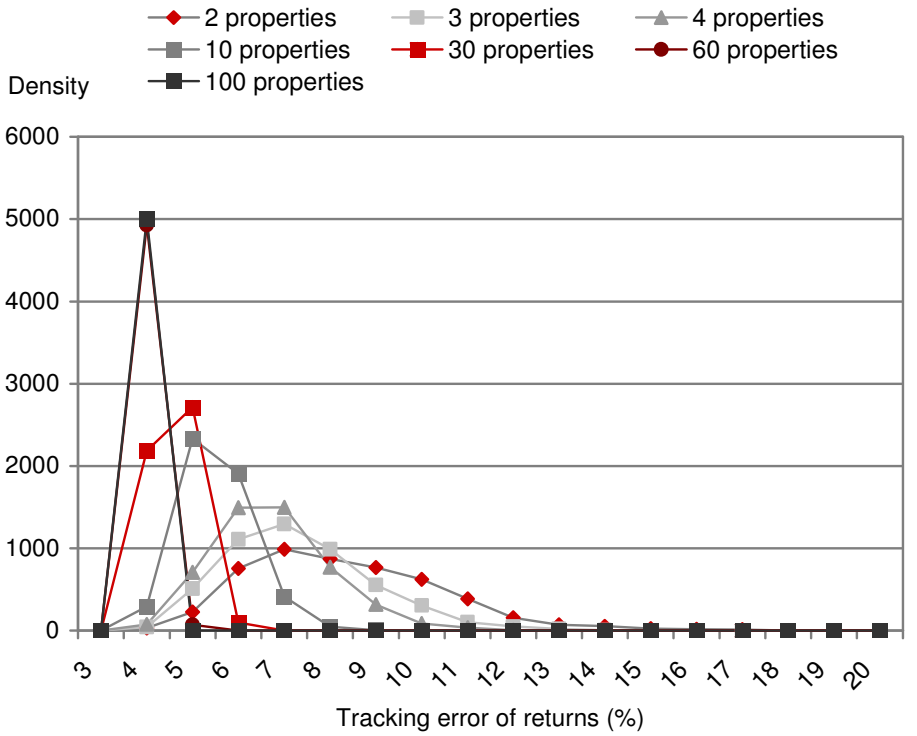
Figure 12: risk reduction (%)



Source: IPD, OPC 2005

Figure 12 shows that tracking errors of 8% are typical for smaller portfolios and that it is difficult to reduce tracking errors below 4% unless very large sums are invested.

Figure 13: Portfolio risk distribution



Source: IPD, OPC 2005

Figure 13 undertakes a similar analysis with reference to the number (rather than value) of buildings in the portfolio: for 100 properties, tracking errors average 4%; for 10 properties, 5-6% can be expected. A portfolio of £500m, containing 80 properties, has a mean tracking error of 2.35% with a range from 1.9% to 2.8%; a portfolio of £50m, with 8 properties, has a mean tracking error of 5.25% with a range from 3.8% to 7.1%.

In comparing returns from unlisted vehicles with returns from direct property market indices, this key issue – the specific risk resident in any direct real estate portfolio – must not be ignored. The question is: what are the risk and return characteristics of investments in unlisted funds compared to investments in direct property portfolios which are themselves likely to suffer significant tracking errors against a direct property index?

7. What is the impact of leverage?

7.1 Introduction

The typical European fund, whether core, core-plus or value-added, is likely to be somewhat different from the US and UK open ended funds which dominate the NCREIF Open-ended Diversified Core Equity Funds Index and the UK APUT universe. Adjustments will need to be applied to direct property risk, return and correlation data to describe investment in closed ended vehicles with gearing or leverage.

We analysed OPC's universe of European indirect vehicles (the PP Universe) and compared its features with the HSBC APUT index of UK funds. The majority (64%) of gross asset value in the PP Universe is represented by core funds, followed by 20% in value added and 16% in opportunity funds. The HSBC APUT index of UK funds is 100% core.

On average, vehicles in the PP Universe are 31% geared; 21% for core, 38% for value added and 53% for opportunity vehicles. Funds in the HSBC APUT index are on average geared at about 19%.

What impact might these differences have upon performance? Why might leverage mean that investing in typical unlisted European funds will be different from investing in open-ended UK and US funds and the direct market?

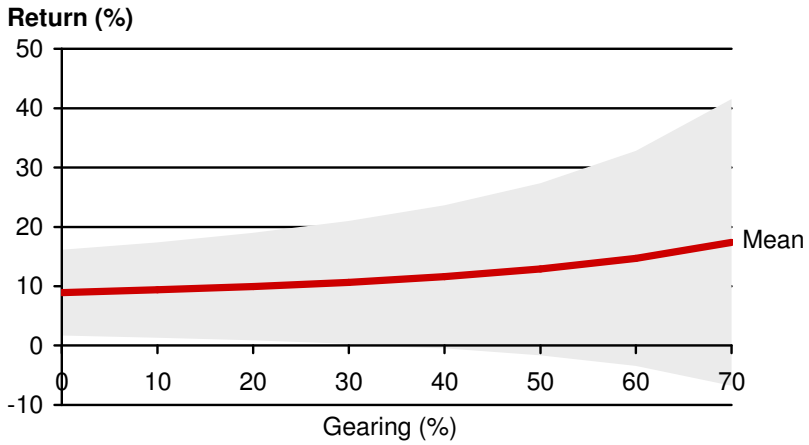
It is known that gearing Increases risk and volatility. It also makes performance more responsive to interest rates and the bond market, depending on whether the interest rate is fixed or floating. Debt can alter the cash flow, and will typically decrease the investor's income return. In summary, the risk of a geared fund is likely to be higher than the risk of an ungeared fund.

7.2 The impact of gearing on risk and return

Figure 15 below explores the hypothetical impact of gearing on historic returns from the IPD monthly all-property index over the period 1990 to 2004. Assuming fixed costs of debt, at a gearing level of 0%, measured in debt as a percentage of gross asset value, the mean return for the period was 8.9%. The volatility or standard deviation of returns was 7.2%.

Increasing the gearing level of a portfolio matching the IPD monthly segment allocations results in increased mean returns as well as increased volatility in returns. 68% of historic returns are captured in the grey area around the mean return. Although the mean return is greater for higher gearing levels, the grey shaded area around the mean also indicates a greater range of historic returns and thus greater uncertainty.

Figure 15: the impact of gearing



So the price of the specific risk reduction achieved by unlisted vehicles may be the higher volatility introduced by gearing. The relative impact of these factors is the subject of further research and modelling – see, for example, Baum and Struempell, 2006.

8. Conclusions

There is more than one type of unlisted indirect property vehicle. At the extremes are the opportunity funds and large, open-ended core and core-plus funds popular in the UK, US and Germany. Data on the performance of opportunity funds is very thin but indicates low correlations with direct markets. On the other hand, analysis indicates that to a large extent the universes of direct property and of the core type of indirect property fund have similar performance characteristics.

Consideration of the returns of direct property as compared with other asset classes suggests that property is a good diversifier against equities and bonds. Assembling a portfolio of indirect investments should enable investors to capture the performance characteristics of the direct market.

However, this analysis lacks pragmatism. First, the Eurozone real estate investor will not buy a portfolio of open-ended funds in the UK and Germany. He will be forced to include a large proportion of closed ended, limited life products. Second, the typical investor cannot buy the universe of direct property – he will be forced to accept high levels of specific risk and large tracking errors against the direct country index.

Hence two key issues remain to be explored further. These are as follows:

How will the typical geared closed-ended, limited life property fund perform relative to the direct market it accesses? What other factors will create performance differentials and what will this impact be? What tracking error around a national or pan-European benchmark is likely to be produced by assembling a portfolio of closed-ended funds?

What is the real alternative to buying indirect vehicles? For a given size of investment, how many properties can be bought? What reduction in tracking error around a national or pan-European benchmark is likely to be produced by this approach? How will the resulting risk reduction trade off against the increased risk resulting from gearing?

The price of the specific risk reduction achieved by unlisted vehicles may be the higher volatility introduced by gearing. The relative impact of these factors will be the subject of further research and modelling.

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Table 1: data sets

	UK	UK	US	Germany	Netherlands
Direct index	IPD UK Annual Index	IPD UK Annual Index	NCREIF NPI Returns Index	DID/IPD German Property Index	ROZ/IPD Dutch Property Index
Unlisted indirect index	HSBC/APUT Index	PVD Directory Index	NCREIF Open-ended Diversified Core Equity Funds Index	PVD Directory Index	PVD Directory Index
Fund type(s)	PUTs, LPs, Managed Pension Funds, Balanced Property Partnerships, Common Investment Funds	Limited Partnerships	Open-ended Funds	Open Ended Real Estate Funds, Spezialfonds	BV, Stichting
Number of funds	33	41	25	21	19
Data period	1990-2004	1999-2003	1978-2004	1998-2003	1999-2003