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Private real estate: From asset class to asset

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The IPD funds database holds information on indirect fund markets globally, tracking the net asset value performance of unlisted property funds and providing full historic series, sector and regional breakdowns. IPD property fund indices are produced for a number of markets in Europe, Australia, the UK and the U.S., with composite indices produced for the Nordics and pan-Europe. The IPD Global Property Fund Index, launched in March 2013, is the only quarterly dataset tracking core real estate performance globally.

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Summary

The purpose of this paper is to place private real estate in a multi-asset-class context and to explain the distinct characteristics of the asset class – from the global market to the individual property asset. The paper comprises two key sections; the first explores the role of real estate in multi-asset portfolios and the importance of different measures of market risk when allocating to the asset class. The second section covers active risk focusing on the significance of strategic and asset-specific factors when investing domestically and across global markets. Together these themes represent critical considerations for real estate investors, and provide an important context for ongoing IPD research into the role of real estate in multi-asset-class portfolios.

The paper provides a number of important insights for institutional investors:

- The understanding that real estate contains components of bond-like income and equity-like growth, both of which need to be understood to manage effectively the risks of the asset class. This form of risk decomposition is a good example of the way in which real estate risk management is being modernised to help asset owners meet their investment objectives.
- Investing globally allows investors to benefit from the disjointed domestic market pricing that occurs in real estate. When investing globally, investors should take a long-term macro view on national economies and real estate markets, as countries can consistently outperform or underperform in the long run. Standardised global market data are required to understand the latest trends and compare national markets on a like-for-like basis.
- Despite the importance of macro factors, real estate portfolios behave differently from the market as a whole. Therefore, active risk is unavoidable when investing directly. The paper identifies the proportion of active risk that can be driven by the market and the proportion that can be driven by asset-specific factors, for an average-sized portfolio.
- The global portfolio results show a fairly even split between the variance of market allocation scores and property selection scores. The domestic portfolio results for the UK and U.S. markets show that around 60% of the tracking error between the portfolios and the benchmark is attributable to property selection. The rest of the variation could be attributed to the market components of the benchmark.
- IPD's Portfolio Analysis Service gives investors the capability to identify active risk and determine the relative success, or failure, of the top-down market strategy and bottom-up selection process. The paper indicates that the two sources of risk can be similarly important and, therefore, investors should treat market and asset-specific analysis with equal emphasis.

Section 1: From asset class to asset

Why hold real estate?

Asset owners have long held real estate in their multi-asset-class portfolios. Asset owners are defined here as institutional investors, including pension funds, insurance companies, and sovereign wealth funds. Offices, retail properties, industrial units, multi-family apartment buildings, and specialist real estate such as hotels, are all elements of institutional portfolios. Yet the consensus view that real estate is an alternative asset class has endured. Real estate asset managers have long argued that real estate should be considered a traditional asset class. The onus has been on real estate asset managers to put forward the case for real estate, and the main answer to the question 'why hold real estate?' has generally been diversification. Most asset owners have been driven by this belief, but many nevertheless succumbed to the promise of leverage-enhanced returns. The case for diversification fitted within a wider allocation process across multiple asset classes; one that formed a rigid top-down mandate and allocated accordingly, class by class.

But the investment process has evolved. The Global Financial Crisis has changed asset owners' requirements from their investments and asset managers' offer to their investors. After suffering substantial losses during the crisis, the onus is now on asset owners to build their own investment case for each asset class. As a result, many asset owners have reviewed their multi-asset-class investment strategy, and new themes have emerged that will influence real estate allocations in the future.

Asset owners are moving towards a division of their investment criteria into a more practical framework – one that focuses on sources of risk and return. Investors are becoming less interested in allocating class by class, but more interested in identifying the sources of volatility in the portfolio.

For example, the Canadian Pension Plan Investment Board (CPPIB) assesses active risk against a reference portfolio, whereby 'each active program has an assigned benchmark whose return is the dividing line between beta and alpha'[1]. A decision to stray from the reference portfolio – whether a beta strategy or alpha strategy – is gauged in terms of Value at Risk (VaR) and its contribution to total active risk. Theoretically, real estate risk is substituted into the portfolio by reducing exposures to fixed-income risk and public-equity risk. The balance between the two is determined by the risk of the real estate investment. Buying high-risk real estate requires a larger reduction in equity risk and vice versa.

The California Public Employee Retirement System (CalPERS) have developed their asset class categories to match their objectives. For example, the 'inflation asset' category sees commodities paired with inflation-linked bonds. The 'real assets' category sees real estate combined with infrastructure and timberland (forestry). 'Liquidity' combines nominal government bonds and cash. CalPERS maintain a top-down model but adjust the classes to reflect their goals, rather than asset type. Consequently, CalPERS no longer use real estate as a return enhancer but as a source of stable cash yields. With this in view, the desired characteristics of real estate become 'stable, income orientated, moderately levered, low risk, and low correlation with equities'[2]. This implies the need for fewer developments, lower leverage and a preference for private over public real estate. This is a common theme across many real estate portfolios, particularly for investors with long investment horizons. The role of real estate is changing for these entities; it is once again a source of income and diversification, and no longer a source of leveraged growth.

An opposing view can be found from private-equity specialists, KKR (previously Kohlberg Kravis Roberts). They invest on a shorter-term basis compared to CPPIB and CalPERS, and cite slightly different reasons for their shift toward real estate. The cyclical opportunities mentioned in their research fall into three main themes: income yield, growth potential, and inflation-hedging in an extremely low-interest-rate environment[3]. KKR are targeting investments where they can add value; taking on greater risks for higher returns. The goal is to source direct real estate in non-core markets – a counter-cyclical move to take advantage of higher up-front yields and the potential for future growth as markets return to normal. So, KKR's real estate portfolio will differ greatly from those of CPPIB and CalPERS, but the objectives and exposures will match their required strategy nonetheless.

In each case, real estate is serving a different purpose. This underlines the wide spectrum of performance possible within the real estate market – from bond-like

[1]CPP Investment Board Annual Report 2013. Page 24.

[2]Role of Asset Classes, ALM Workshop via 'Real Estate Strategic Plan, CalPERS, 14th February 2011'

[3]KKR, Insights: Vol. 2.8, Sept 2012. Real Estate: Focus on Growth, Yield and Inflation-hedging.

income-oriented investments to equity-like growth-oriented investments. The view that real estate contains components of bond-like income and equity-like growth opens the door to further investment into the asset class. The concept allows for the substitution of risk from traditional sources into alternative ones. Making the case for real estate is no longer about trying to be the extra basket for an investor's eggs; it is rather that of explaining how real estate's risk and return characteristics fit into investors' existing objectives.

An increasing range of investors and their advisors are seeking to capture these different dimensions of real estate risk. Consequently, the real estate industry needs the tools to understand and manage the sources of its volatility. As an example, the Barra Integrated Model, a sophisticated multi-asset-class risk tool, distinguishes the equity and fixed-income components of real estate risk for the main property types across global markets. The inclusion of real estate in such a model is rare, as the task of translating the risk of a private market into public-market factors is difficult. But the model has already tackled this issue and has since been enhanced with the use of IPD data. This form of risk decomposition is a good example of the way in which real estate risk management is being modernised to help asset owners meet their investment objectives.

However, in order to compare private real estate with public asset classes on a like-for-like basis, an adjustment to real estate's appraisal-based data is needed.

Real estate is an appraisal-based market

Indices for private real estate are generally based on appraisals. This presents a problem for risk analysis that seeks to compare the volatilities and covariance of private real estate with public asset classes. Any appraisal-based index is likely to be affected by lagging and smoothing for three main reasons:

- Illiquidity – Infrequent trading leaves appraisers with limited comparable evidence to base their assumptions on. This information may be out-of-date and in need of subjective adjustment.
- Heterogeneity – All real estate assets are unique. Subjective adjustment of market evidence is required to make it fully relevant to the appraised asset.
- Lack of a central trading platform – a private market is subject to information inefficiencies. Not all sales are in the public domain. Often the details of a sale are confidential, even if the deal itself is well known.

The net result is high autocorrelation in the reported return and a loss of extreme values at the aggregate level. This can lead to an understatement of volatility and covariance, and may result in a theoretical over-allocation to the appraised asset class. As a consequence, a multi-asset-class risk model needs to desmooth the appraised return. This is illustrated by the private real estate element of the Barra Integrated Model, which overcomes such issues by considering a range of data across global real estate markets[4]. IPD's appraisal-based indices and transaction-linked indices are analysed alongside public real estate data in a new Bayesian desmoothing framework to find an overall risk measure that is comparable with public asset classes.

Desmoothing real estate indices

There are accepted methods of desmoothing indices. Their purpose is to adjust appraisal-based indices (also known as valuation-based indices, VBIs) in order to get a like-for-like comparison of volatility with publicly traded indices.

The common method for desmoothing real estate indices stems from Geltner (1992)[5]. The objective of this method is to recover the underlying market movements from the appraisal-based returns. It takes account of three influences on appraisal-based indices: smoothing, temporal aggregation, and the seasonality of appraisals.

Geltner has since evolved his method, which has also been finessed by others, but the core principle remains. A rational appraiser will undertake 'a partial adjustment or adaptive expectations approach to estimating the property value at each point in time'[5].

The Bayesian methodology used in Barra's PRE2 model improves upon the traditional techniques to desmooth private real estate appraisals, resulting in less noisy estimates, and the removal of significant distortions.

Transaction-linked indices

Transaction-linked indices (TLIs) are a cross between appraisal-based indices and hedonic transaction-based indices[6]. They are less common than transaction-based

[4]MSCI (2013 forthcoming) The Barra Private Real Estate model (PRE2)

[5]Geltner, D. (1992) *Estimating Market Values from Appraised Values Without Assuming an Efficient Market*.

[6]S.Devaney (2013) *Measuring European real estate investment performance: A comparison of different approaches.* [Working Paper]

indices, as they require large samples of sales and appraisals. IPD has produced TLIs for nine European countries and two international composites, with near-term plans to expand coverage beyond Europe.

TLIs capture the additional market volatility by adding in the modelled premium of the sale price over valuations for each quarter. For the pan-European TLI, this means an annual standard deviation of 7.1% versus the valuation-based index of 5.1%. The VaR @ 5% is 16% versus 12% for the VBI.

Directly owning assets is different from 'owning the market'

Real estate, as defined in this paper, is a heterogeneous and lumpy asset class. This causes difficulties when using market-level data to form asset-level, or even portfolio-level, investment strategies.

Figure 1: U.S. PAS submarkets

Atlanta	New York (NY/NNJ/LI/CT)
Boston	San Diego
Chicago	Seattle
Dallas/Ft. Worth	San Francisco Bay Area
Denver	South Florida
Houston	Washington D.C.
Los Angeles (LA/OC/ Riverside)	Next 10 Markets
	Rest of Country

For example, the U.S. market can be divided into the top 13 metropolitan statistical areas (MSAs); the next 10 MSAs combine to form the fourteenth submarket, and the rest of the country forms the fifteenth submarket, as shown in Figure 1. The submarkets are a standard segmentation in IPD's Portfolio Analysis Service (PAS).

Figure 2 shows 10-year returns versus the standard deviation of those returns. The submarkets give a wide range of results. An investor can infer that a particular submarket matches a preferred risk-return mix, based on this data. Chicago and New York are highlighted as examples at different ends of the spectrum, but both provide a similar risk-adjusted return over the selected period.

Figure 2: Risk versus return for U.S. submarkets from 2003 to 2012

Figure 3 shows the range of asset-level returns that belong to the two submarkets. The assets chosen were held by investors over the entire 10-year period. It lays bare the wide range of risk and return within a submarket at the asset level. Two submarkets at opposite ends of the risk-return spectrum contain assets that perform very differently from the parent submarket. In fact, the two sets of assets overlap. This brings us back to the discussion at the start of the paper on how asset owners are increasingly looking through the asset class classifications to identify the true sources of risk and return. The same can be seen here within real estate.

Figure 3: Risk versus return – submarket and asset relationship from 2003 to 2012

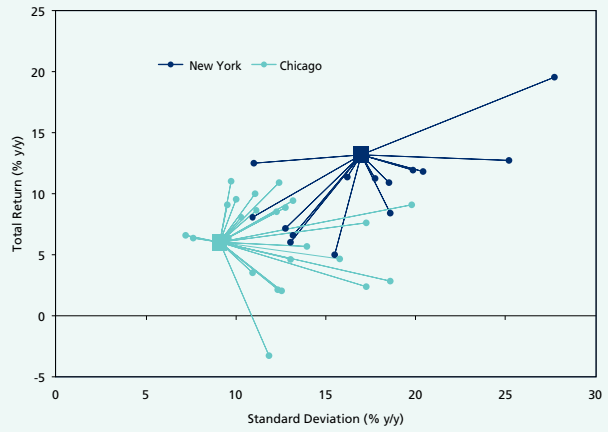


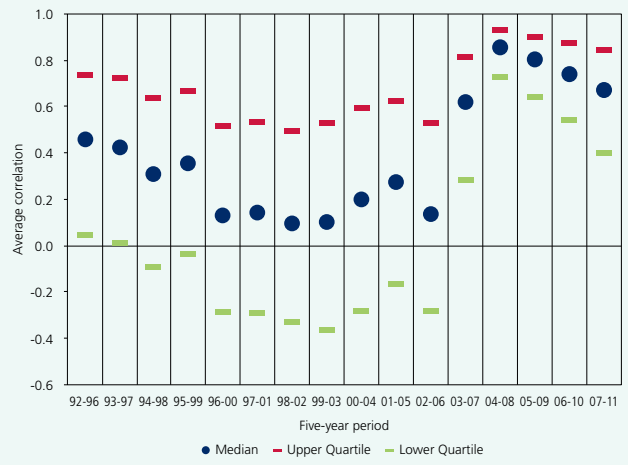
Figure 3 note: The assets shown were all held for the entire 10-year period. The submarket aggregates include all assets held in any given year. This results in a survivor bias towards the outperforming assets held, and away from the underperforming assets sold and removed from the asset-level sample.

Taking a purely top-down view on real estate allocations can result in direct asset purchases that leave an investor exposed to unknown levels of risk.

Asset return correlations go to one in a crisis

Asset return correlations are not constant over time. 'Correlations go to one in a crisis' is a common observation across asset classes. Figure 4 shows the average five-year correlation values of each asset-to-asset pair (the mean of over 127,000 combinations for each period) for over 500 UK assets held between 1992 and 2011. Under normal market conditions, when returns are positive, correlations between assets are low and the range of correlations is large. Some assets, not all, are performing well in this scenario. When the crisis hit the UK in 2007, the subsequent returns fell into negative territory; asset returns fell in unison, with very few exceptions. At that point, diversification was lacking when it was most needed.

Figure 4: Average asset-to-asset pool five-year correlations in the UK



This helps to explain why portfolios or market indices display sensitivity to negative events even though, in any given year, assets offer a great deal of variation in returns and potential diversification benefits. Still, once the trends are viewed on a rolling basis, five years in this case, it is clear that inertia in real estate can be asymmetrical and insuring against an extreme negative event is very difficult within a domestic market.

Section 2: Benchmarks and portfolios

Diversifying away asset variance can be difficult and often means that large sums of capital are required to achieve true diversification. Variance in portfolio performance results from exposure to performance and risk attributable to allocations at the market level and to property selection. This raises a central question for real estate investors, related to the relative contribution of market allocations and property selection to overall risk.

Total risk can be determined without a benchmark, while determining active risk is only possible by comparing a portfolio with a suitable benchmark. The comparison is required in order to measure active risk and tracking error. The market weights within the benchmark can also be used to determine neutral market allocations. Comparing the market allocation of the portfolio with that of the benchmark completes the information required to attribute active risk to either market allocation or property selection. The combination of benchmarking and risk attribution is a defining feature of IPD's Portfolio Analysis Service. The following set of examples applies the same methodology used in IPD's PAS benchmark reports.

The attribution technique splits the relative return into an allocation score and a property selection score. The full definitions are:

- **Allocation score** – the relative return attributable to the weighting of the portfolio relative to the benchmark in each segment or submarket.
- **Selection score** – the relative return attributable to the performance of the portfolio's assets relative to the benchmark in each segment or submarket.

The starting point in this paper is to build a number of dummy portfolios using IPD's asset-level database. Analysing over 1,300 funds in IPD's fund-level database would also have been possible. However, real funds are built and managed while referencing benchmark weightings, and so it can be argued that real market allocation scores are manually constrained. Constructing unconstrained dummy portfolios, using a pool of funds' underlying assets, provides a better indication of the true nature of the asset class. Unsurprisingly, many of the dummy portfolios have different weightings from their respective benchmark, but the purpose of the method is not to recreate benchmark-tracking funds. Nor is the method an attempt to identify how many assets are required to track successfully the benchmark. Instead, the purpose of this section is to determine what proportion of active risk can be driven by the market and what proportion can be driven by asset-specific factors, for an average-sized portfolio. Therefore, a truer representation of the relative importance of top-down market allocations and bottom-up property selection can be seen in the results.

This paper compares domestic and global perspectives, to assess whether a different investment universe produces a different balance between allocation and selection. The global universe used in this exercise included 7,261 assets across 18 countries. All assets were standing investments (not developments) and were held from 2003 to 2012, inclusive. Then, long-only dummy portfolios were created by randomly selecting assets from the pool. The portfolio was finally compared with the universe benchmark and the difference in performance was attributed to the allocation and selection scores. It should be noted that the portfolios and the benchmark exclude the use of leverage. The domestic examples draw from single countries separately, in this case the U.S. and UK markets. The global example draws from the entire pool of assets.

The average number of assets per fund in the IPD Global Property Fund Index is around 65. U.S.-domiciled funds each have around 125 assets, while UK-domiciled funds have around 70 assets per fund. Therefore, our simulated U.S., UK and global portfolios each have 100 assets to form a suitable and consistent proxy for a real fund.

The purpose of this method is to find the variance of the allocation and selection scores to determine the sources of portfolio risk. To do this, multiple portfolios are selected from the sample pool in order to test the potential variance of each score. This effectively 'bootstraps' the pool of assets. The method allows for the re-use of each asset within different portfolios, via an iterative process, while assets can only feature once within the same portfolio. Selection is completed randomly until all 100 properties are selected with no submarket or financial constraints. This is completed 1,000 times in order to gain a significant sample of outputs. The end goal is to analyse the 1,000 allocation and selection scores for each portfolio type – U.S., UK and global.

The scores in question are the 10-year cumulative attribution scores of each dummy portfolio. This indicates a portfolio's tracking error over a realistic hold period. The results (for now) are not describing the differences in scores from year to year for each portfolio, but the differences in 10-year scores across the portfolios. The U.S. domestic portfolios form our first

example. The same submarkets shown in Figure 1 were used as the submarkets for allocation. All 1,000 U.S. portfolios were compared with a U.S. benchmark, formed of all U.S. assets within the aforementioned global universe.

U.S. portfolio results

The 10-year cumulative allocation and selection scores both have averages around zero – confirming that the bootstrapping method has successfully ironed out any selection bias. The standard deviation of the 1,000 allocation scores was 0.28 and the selection scores had a standard deviation of 0.39. The full results are summarised in Figure 6.

In other words, around 60% of the tracking error between the portfolios and the benchmark was attributable to property selection.

Figure 3 alluded to this, but the attribution result neatly quantifies the trade-off between top-down allocations and bottom-up property selection.

Autocorrelation is of interest in this analysis. Is outperformance or underperformance sustainable over the 10-year period? Do certain submarkets, or assets, continually outperform?

Positive autocorrelation in a portfolio's allocation score would suggest that going overweight (underweight) in an outperforming (underperforming) submarket can yield a sustained positive (negative) active return. The same can be said for the property selection scores. But in an efficient market, a submarket or asset should not be able to outperform continually. Pricing should adjust accordingly.

The Durbin-Watson statistic is used to determine autocorrelation. This tests the null hypothesis that the results are not autocorrelated and produces a figure between zero and four. Zero indicates positive autocorrelation; two indicates non-autocorrelation and four indicates negative autocorrelation, or mean reversion. The results show a slight bias towards autocorrelation, with averages around 1.5, for both allocation and selection scores. It is possible test the significance of the Durbin-Watson statistic using the Savin and White tables to form an appropriate upper and lower bound at a 5% confidence interval. If the statistic is below the lower bound (just under 0.9 in this case) then it is considered significant positive autocorrelation. If the statistic is between the lower and upper bound (just over 1.3) then the result is inconclusive; if the statistic is above the upper bound then the positive autocorrelation is deemed to be insignificant.

Only 7% of the 1,000 allocation scores showed significant positive autocorrelation, with 30% falling between the bounds, over the 10-year period. 6% of the 1,000 selection scores showed significant positive autocorrelation, with 23% falling between the bounds. Positive autocorrelation in the allocation and selection scores was rare. This supports the view that extended arbitrage opportunities are uncommon within a domestic market and that pricing, whether at a submarket or asset level, is fairly efficient on a relative basis.

UK and global portfolio results

An identical exercise was conducted for the UK and global markets. The UK submarkets used are shown in Figure 5. The submarkets are the standard breakdown used in the IPD Portfolio Analysis Service.

Figure 5: UK PAS submarkets

South East Standard Retail	West End and Midtown Offices
Rest of UK Standard Retail	Rest of South East Offices
Shopping Centres	Rest of UK Offices
Retail Warehouses	South East Industrials
City Offices	Rest of UK Industrials

Figure 6 provides a summary of the attribution findings for the U.S., UK and global examples. The UK has a 40/60 split between allocation and selection. Positive autocorrelation was rare, although slightly more common for the UK selection scores at 12.3%. Overall, the two domestic examples show similar traits. Therefore, the average domestic fund is still exposed to asset-level drivers, despite the portfolios' size. Consistent allocation and selection scores from year-to-year were hard to achieve.

Figure 6: Summary of domestic and global portfolio attribution analysis

		U.S.	UK	Global
Allocation Score	Absolute variance	0.28	0.33	0.73
	% of total variance	41%	40%	53%
	% significant DW stat	7.2%	5.7%	51.3%
Selection Score	Absolute variance	0.39	0.49	0.64
	% of total variance	59%	60%	47%
	% significant DW stat	5.8%	12.3%	10.3%

The global exercise assumed that allocation occurred at the national level; countries formed the new 'submarkets'. The 18 countries included are shown in Figure 7. There are three differences between the global and domestic results. First, the allocation scores form the majority of the total variance at 53%. Second, absolute variance is larger, approximately double. Finally, 51% of the global allocation scores have significant positive autocorrelation.

Figure 7: Countries included as markets in the global portfolio

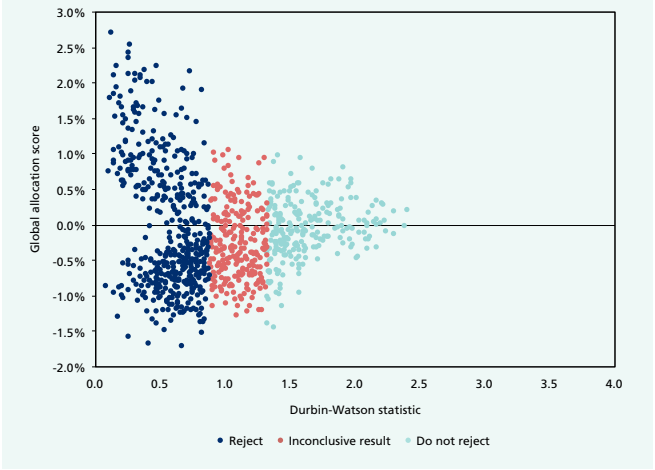
Australia	Norway
Canada	Portugal
Denmark	Republic of Ireland
France	South Africa
Germany	Spain
Italy	Sweden
Japan	Switzerland
Netherlands	UK
New Zealand	U.S.

These three findings are not a complete surprise. They are the result of one key difference between inter-country and intra-country trends, namely the lower correlation existing between the 18 countries than between the local submarkets. This increases the possible variance attributable to allocation; the global example has a fairly even split between inter-country and intra-country variance. Low correlation also explains the higher overall tracking error between the global portfolios and the global benchmark. Greater variation across the full 7,261 asset sample implies that 100 assets would be insufficient to keep the tracking error at the same level for a 100 asset domestic fund.

As a consequence, the influence of the number of assets in the portfolio was also considered. The findings suggest that over 250 randomly chosen properties would be required to reduce the global tracking error to the same level as for a 100-property U.S. or UK portfolio. However, it is important to keep in mind that the low correlation between countries also means we are comparing the global portfolios against a benchmark that has lower volatility than the domestic benchmarks. The cumulative 10-year tracking error may well be double at 1.4%, but the global benchmark has half the volatility of the U.S. and UK benchmarks at 6%. Therefore, the average global portfolio risk is just over half that of the domestic examples (7.4% versus 12% to 13%).

Low correlation between assets is not necessarily the main reason behind our third observation that significant positive autocorrelation is common in global allocation scores. Figure 8 shows the relationship between global allocation scores and their respective Durbin-Watson statistics. Larger scores (positive and negative) go hand-in-hand with lower Durbin-Watson statistics – the effect of positive autocorrelation causing more extreme cumulative results. Positive autocorrelation is widespread because countries can consistently outperform (or underperform) on a yearly basis, even over the long-term. This was not the case for submarkets in the domestic markets. Some of the persistence is due to investors requiring higher returns for certain countries – an investor may want a higher return from a South African investment, for example, than from a U.S. investment, due to the perceived requirement for liquidity or transparency compensations, not necessarily due to a higher beta. However, it is also rare for domestic markets to be priced relative to other countries. Offices in markets such as Chicago (U.S.) are more likely to be compared with offices in other U.S. cities, than locations in the UK or European markets. This is not always the case – the New York office market is often compared with the London office market – but most real estate markets have a domestic viewpoint when it comes to pricing.

Figure 8: Global allocation score versus global allocation Durbin-Watson statistic



The lack of a global perspective on real estate pricing puts added emphasis on country-level allocations for global portfolios. Long-term bets for or against certain countries can make a material difference to the performance of a portfolio relative to a global benchmark. Top-down strategies are important, but they are also not the whole answer (53% of it in this case!).

The execution of a global strategy is likely to start with long-term macro views on national real estate markets. Globally consistent market data is essential here. For over 25 years, IPD has sought to increase the availability of performance data across markets, and now covers over 30 countries. This work is ongoing, with time series being extended, additional countries being covered and, more importantly, greater detail and consistency being created across a series of performance measures, ranging from valuation practices to tenancy details.

Market allocations become less influential on volatility once the view narrows to domestic submarkets. But it remains around 40% of the total domestic volatility (closer to 20% of global volatility as a rough guide). The lack of positive autocorrelation in most cases may keep the possibility open for short-term bets for and against certain submarkets. This activity may produce outperformance in the long-term, but transaction costs are likely to dampen or even reverse the benefits, if such bets are taken too often.

The use of domestic submarket data is, then, geared towards understanding the nature of a submarket's return and how it fits in with the asset owner's goals. Does the asset owner want to specialise in a high-growth submarket, like New York or London, or a low-growth high-income submarket like an industrial submarket? Or is a balanced domestic portfolio preferred? Whatever the case, a national allocation needs to be justified by an asset management strategy, even for large balanced funds.

This leads us to an area of future research. With such large differences in performance within tightly defined domestic submarkets, further analysis is needed to identify the sources of this variance. Once understood, fund managers can use the information to build strategies for outperformance, for better risk management, and structures for performance reporting. More information in this area can be found in the Appendix.

Conclusion

Investors were motivated to review their multi-asset-class investment strategy in the wake of the Global Financial Crisis. As a result, investors are moving away from allocating on a class-by-class basis and toward determining and managing common sources of volatility across asset classes. Real estate can provide a combination of bond-like income returns and equity-like growth, and the asset class is increasingly viewed in these terms. This framework permits asset owners to have a greater acceptance of real estate, and other alternative asset classes, and substitute risk generated by traditional asset classes for such alternatives.

However, real estate portfolios behave differently from the market as a whole, and investors need to understand the nuances of real estate's asset-level characteristics. Real estate is a private market of heterogeneous assets, and active risk is unavoidable when investing directly. The purpose of this paper is to identify the proportion of active risk that can be driven by the market and the proportion that can be driven by asset-specific factors, for an average-sized portfolio. As a consequence, the results provide a representation of the relative importance of top-down market allocations and bottom-up asset selection.

The paper provides an indication of the true nature of the asset class, by randomly selecting real assets in order to construct unconstrained dummy portfolios. The domestic portfolio results for the UK and U.S. markets showed that around 60% of the tracking error, between the portfolios and the benchmark, was attributable to property selection. The rest of the variation could be attributed to the market components of the benchmark. The global portfolio results showed that the split was fairly even between the variance of market allocation scores and property selection scores.

The difference between the domestic examples and the global example can be explained by the lower correlation between the 18 countries used in the global example than between the local submarkets used in the domestic examples.

Low correlation between assets was not the main reason behind the observation that significant positive autocorrelation is common in global allocation scores. Positive autocorrelation is widespread because countries can consistently outperform (or underperform) on a yearly basis, even over the long-term.

For a typical real estate portfolio, either domestic or global, the identification and management of active risk is an important part of a real estate investment strategy. IPD's Portfolio Analysis Service gives investors the capability to identify active risk and determine the relative success, or failure, of the top-down market strategy and bottom-up selection process. The paper indicates that the two sources of risk are important and, therefore, investors should treat market and asset-specific analysis with equal care.

Appendix

The importance of property selection and asset management

A further breakdown of property selection risk may be undertaken to examine whether the variance is due to random asset-specific events or other market factors.

Quality attributes

Asset quality can be defined in a number of ways. Asset size, age, the ability to conform to modern regulations, the quality of the tenants, and the terms of the leases will all play their part in differentiating a high-quality asset from the rest. Extensive research has been conducted by IPD to determine which of these attributes influence performance. The findings so far indicate that the most dominant factors vary over time and from country to country. IPD is continuing its work in this area to find consistent factors across time and markets.

Further information on quality analysis is available from the IPD research team and can be found on ipd.com and via enquiries@ipd.com

Asset management attributes

Income-related factors may help explain why property selection scores are so high in return attribution analysis. IPD collects lease and tenant data to provide income analytics for this purpose. The IPD Rental Information Service (IRIS) and Asset Management Benchmarking service are examples of risk management tools dedicated to income risk. They inform and guide bottom-up property selection and asset management strategies – strategies that can make the difference between outperformance and underperformance, especially for domestic funds, but even on a global level.

Asset managers will always pursue opportunities to improve performance through active management. In the downturn this focused on activities to extend lease lengths, but is likely to switch to an acceptance of shorter leases and the pursuit of refurbishment programmes – in order to capture and maximise rental growth – in the recovery. Either way, understanding asset-level drivers of variance is of material importance to even the largest global asset owners. In turn, domestic asset managers can use this information as a framework for performance reporting and forming future asset management plans.

IPD is incorporating tenant and lease information found in the existing IRIS tool into the main PAS reports. This addition allows investors to combine cash flow monitoring with performance reporting.

Further information on the IPD Rental Information Service and Asset Management Benchmarking service is available can be found on ipd.com and via enquiries@ipd.com

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