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THE EROSION OF THE REAL ESTATE HOME BIAS

The integration of real estate with other asset classes and greater scrutiny from risk managers are set to increase, not reduce, the moves for international exposure.

Jean-Martin Aussant, Peter Hobbs, Yang Liu, Peter Shepard

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INTRODUCTION

The traditional, home-biased focus of real estate investing is starting to change. The globalization of this opportunity set is being driven by the world's largest Sovereign Wealth and Pension Funds, many of whom have explicit global real estate investment mandates. There is a broader trend, however, driven by the perceived diversification benefits of international real estate exposure. Many investors have started to understand the role of real estate in a multi-asset-class context, and this perspective tends to increase the demand for international real estate, furthering the decline of real estate home bias[1].

In this Research Insight, we use the Barra Integrated Model (BIM) and the latest Barra Private Real Estate Model (PRE2) to examine the drivers of risk and return in the international real estate market.

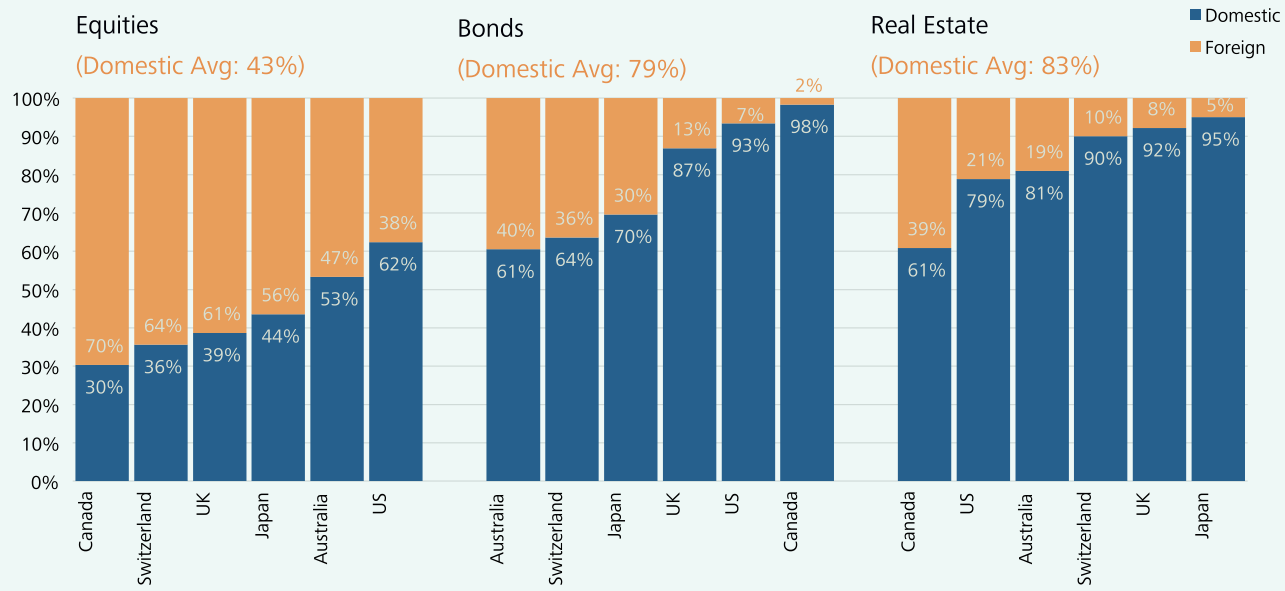
1. Cornell University (2014) Institutional Real Estate Allocations Monitor; MSCI (2014) Asset Owner Survey.

A GROWING APPETITE FOR INTERNATIONAL EXPOSURE

The appetite for international exposure across asset classes is demonstrated by surveys conducted by Towers Watson[2] (for equities and bonds) and MSCI[3] (for real estate). This work shows that the bias toward domestic investment is lowest for equities, but far higher for fixed income and for real estate. It may be logical for fixed income to have a relatively strong home bias given its role in hedging domestic liabilities, but this appears somewhat less intuitive for domestic real estate as a hedging asset.

Despite this home bias, a range of recent studies, including the ones cited above, point to an increasing appetite for foreign real estate, driven by concerns over the aggressive pricing of domestic markets, particularly in the US, Canada and Australia; as well as by the diversification benefits. These benefits have been complemented by the increasing options for investing in real estate internationally, with a series of more robust and better-governed investment platforms covering most of the world's real estate markets.

Exhibit 1: Domestic and foreign allocations across asset classes, 2013



Source: Towers Watson; MSCI Asset Owner Survey

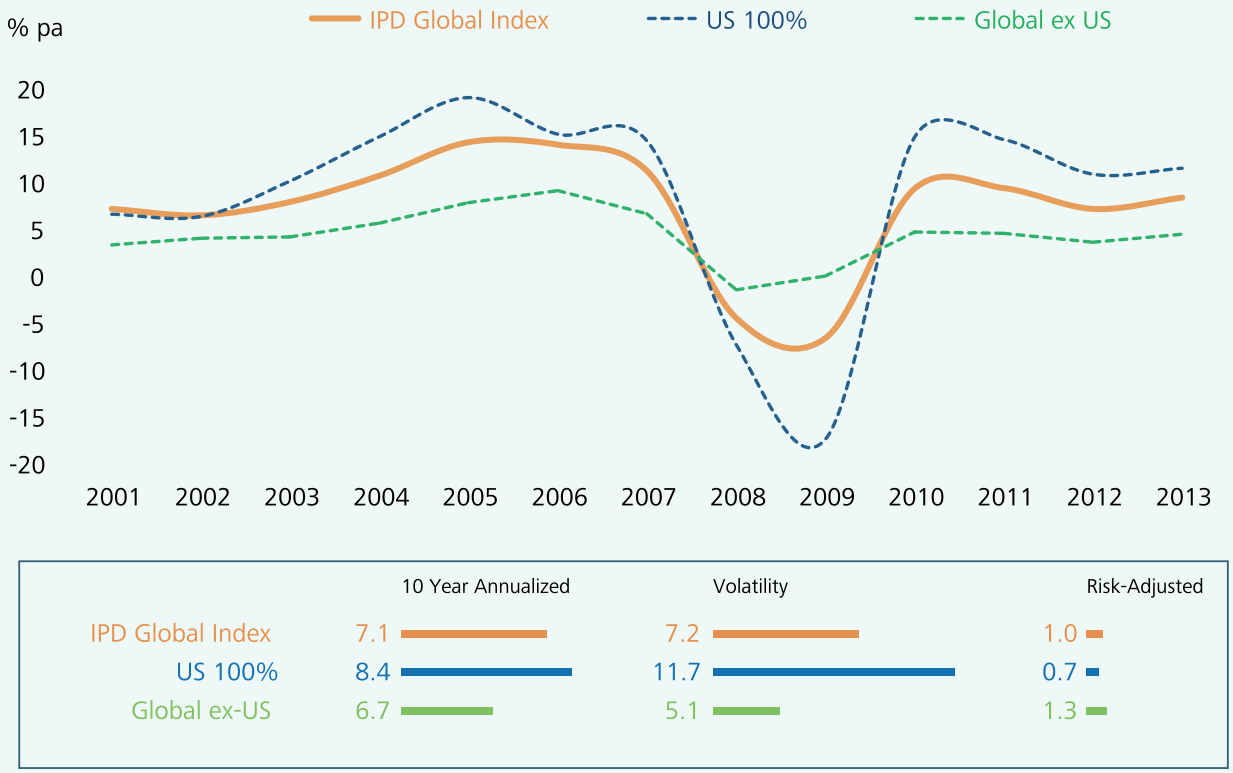
Note: Results from the Barra Integrated Model based on illustrative exposure to different asset classes. Equity Portfolio based on MSCI US, international, and emerging markets (including REITs); Fixed Income Portfolio based on US Treasuries, corporate bonds, and TIPS; Real Estate Portfolio based on the US segment of IPD's Global Property Index.

2. Towers Watson (2014) Global Pension Assets Study 2014.
3. MSCI (2014) Asset Owner Survery.

The trend for investors to increase their exposure to international real estate raises questions about unforeseen risks, particularly in terms of how much overseas real estate is allocated to a portfolio, its geographic location risk, and the leverage that might be employed. The global financial crisis (GFC) taught investors that international diversification could be used to mitigate the risks of a severe downturn in a particular country. The GFC also showed the extent to which inter-and intra-country correlations could increase in a crisis, emphasizing the need for truly diversified global investment strategies to mitigate portfolio risk.

The significant benefits of international diversification are illustrated in Exhibit 2 which shows the return implications of different global exposures. This Exhibit compares the performance of the IPD Global Index with that of the IPD US Index (in blue) and the IPD Global Index ex-US (in green). At a glance, it is possible to see the greater volatility of the US, particularly during the GFC. The chart also suggests that the IPD Global Index ex-US generates a lower return but at far lower risk than a pure US exposure, leading to a higher return per unit of risk for ex-US exposure. This illustrates the benefits of international diversification, which are compounded when correlations benefits are taken into account.

Exhibit 2: Rationale for international real estate exposure: the US example, comparing US returns with the IPD Global Index and the IPD Global Index ex US



Source: IPD

Note: Weights shown here are annual for presentation purposes. The actual IPD Global Index is based on monthly weightings. Volatilities based on unsmoothed return series.

INTEGRATING PRIVATE REAL ESTATE WITH OTHER ASSET CLASSES: THE BARRA PRIVATE REAL ESTATE (PRE2) MODEL

The previous example demonstrates that a reduction in home bias can improve portfolio diversification, but this is based on naïve comparisons of the risk and returns of global markets. In particular, it uses an "appraised" performance series that smoothes the true volatility of actual market performance.

Although they are beyond the scope of this article, a series of techniques have been developed in order to de-smooth real estate indexes, the most recent of which has been created by MSCI to integrate a private real estate risk model (known as PRE2) into the Barra Integrated Model (BIM). The full description of the method can be found in Shepard, Liu, and Dai (2014). In summary, the Barra risk model uses many data inputs – appraisal-based data, listed real estate returns, and real estate transaction prices – within a Bayesian de-smoothing framework. The use of numerous sources of real estate data substantially improves the risk estimates and reduces the noise associated with the appraised series. The result is a set of risk estimates that show real estate to have higher volatility and greater correlations (between countries and with other asset classes) than previously thought.

MSCI's real estate risk research raises a series of questions relating to home bias in real estate investment. First, is the argument for global diversification undermined if covariance between national markets is higher than first thought? Second, does the increase in risk caused by leverage negate the benefits of overseas investment, given that the model estimates real estate to have higher variance than first thought? Third, how do the risk implications of international exposure vary from country to country?

The MSCI research team has used the PRE2 element of the Barra Integrated Model to create a number of case studies that help answer these questions. A starting point in this analysis is the risk profile of a real estate allocation by, for example, a US-based investor. In Exhibit 3, the investor has allocated 10% of capital to US real estate, and the stand-alone risk of this allocation averages 10.93%, excluding leverage. In this case, the correlation of real estate with the other asset classes in the portfolio was high, but its overall risk contribution was still low. Fixed income also contributed little risk to the overall portfolio, despite its large allocation, with the largest risk contribution coming from the equity exposure.

Exhibit 3: Risk contributions of US real estate alongside equities and fixed income

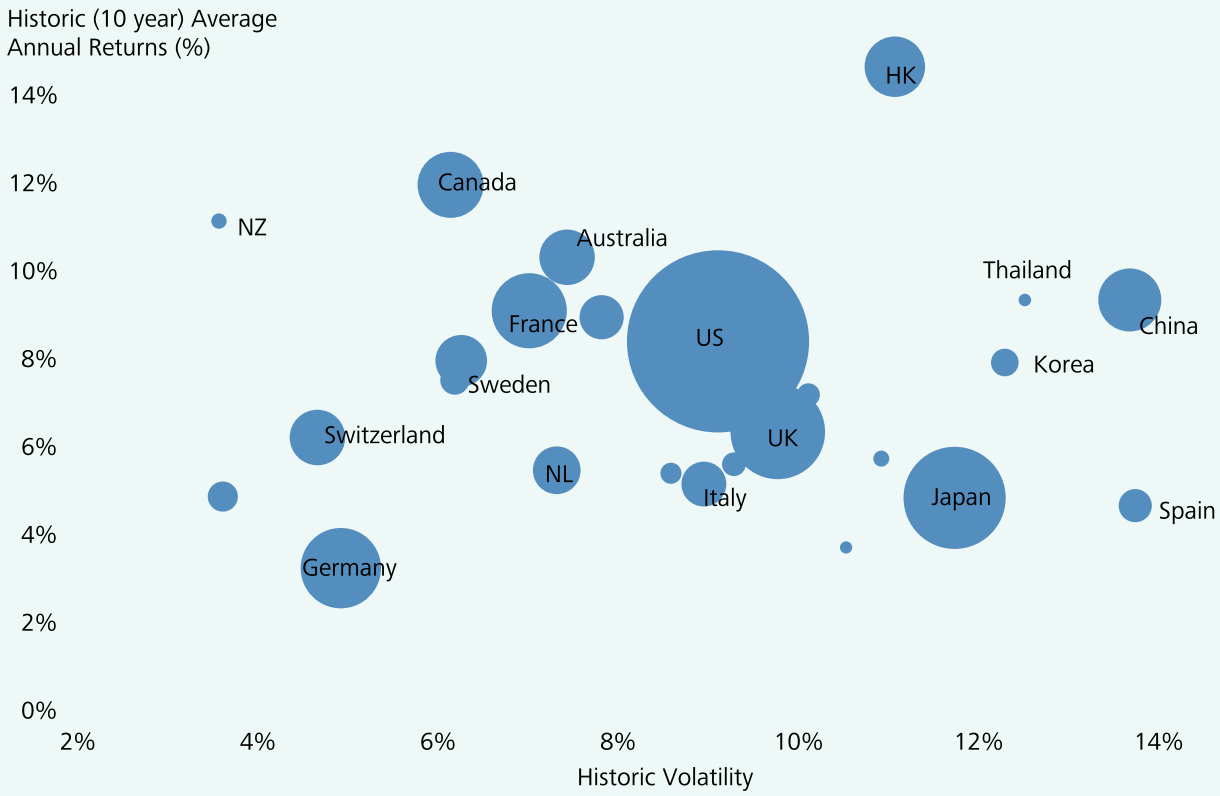
Asset Class	Weight	Stand-Alone Risk	Correlation	Risk Contribution
Equity	50	14.92	0.97	7.23
Fixed Income	40	4.35	0.12	0.21
Real Estate	**10**	**10.93**	**0.76**	**0.83**
Portfolio	100			8.27

Note: Results from the Barra Integrated Model based on illustrative exposure to different asset classes. Equity Portfolio based on MSCI US, international, and emerging markets (including REITs); Fixed Income Portfolio based on US Treasuries, corporate bonds, and TIPS; Real Estate Portfolio based on the US segment of IPD's Global Property Index.

INTERNATIONAL EXPOSURE FOR US-BASED INVESTORS: INSIGHTS FROM THE PRE2 MODEL

One of the central benefits of international real estate is the significant differences in return that persist between countries. These differences are captured in Exhibit 4, which shows the historic return against the volatility of the main markets covered by the PRE2 model, with the size of the bubbles representing the size of the real estate markets. This chart shows that the US has tended to generate slightly below average performance with high volatility that contrasts, for instance, with France and Sweden, which have tended to generate higher returns at lower volatility. Although the chart ignores the issue of correlations between markets, it suggests that a US investor with overseas real estate exposure might benefit from risk reduction, while a German investor might benefit from return enhancement. A relatively high-risk and low-return Japan-based investor might, in contrast, benefit from both return enhancement and risk reduction from international exposure.

Exhibit 4: Risk/return characteristics of major global real estate markets



Note: Excludes South Africa (Return 18%, Risk 8%). Some Asian countries (China, Korea, Malaysia, HK, Singapore, Taiwan and Thailand) based on returns over 7 years.

In the context of these different patterns of return, it is possible to explore the trade-off between US and non-US real estate, and the implications of adding different levels of leverage to the international exposure. In this case, a loan-to-value ratio of 20% is assumed for the domestic real estate portfolio, taking the overall stand-alone risk up to 13.66% . The table in Exhibit 5 shows, in the green highlighted area, the impact of increasing the international real estate exposure by 20% increments, with no leverage being added to the international exposure. This demonstrates significant reductions in risk, from 13.66% for full domestic exposure to about 5% for full international exposure.

The table also shows the impact of increasing leverage for different levels of international exposure. In all cases, the addition of leverage increased risk but, for international exposure up to 40%, loan-to-value can be increased to 60% and result in a lower level of overall risk than a purely domestic portfolio. The table also shows that high levels of leverage, generally loan-to-value over 60 percent, had a significant impact on overall risk levels.

The answers to the two original questions are now evident, at least from the perspective of a US investor. After real estate's heightened variance and covariance are incorporated into the model, we see risk reduction through global investment. However, investors should carefully assess the level of debt used to achieve this international investment. In our case study, low levels of debt did not negate the benefits of foreign investment, but higher levels increased risk to the overall portfolio.

Exhibit 5: Varying the nature of international real estate exposure for US investors

Estimated market size		IPD Coverage				
USD CV million	RE as % of GDP	0%	20%	40%	60%	80%
100	0	13.66	13.66	13.66	13.66	13.66
80	20	11.56	11.73	12.02	12.61	14.54
60	40	9.55	9.92	10.57	11.94	16.42
40	60	7.68	8.32	9.42	11.73	19.01
20	80	6.10	7.06	8.68	11.99	22.05
0	100	5.08	6.35	8.46	12.70	25.39

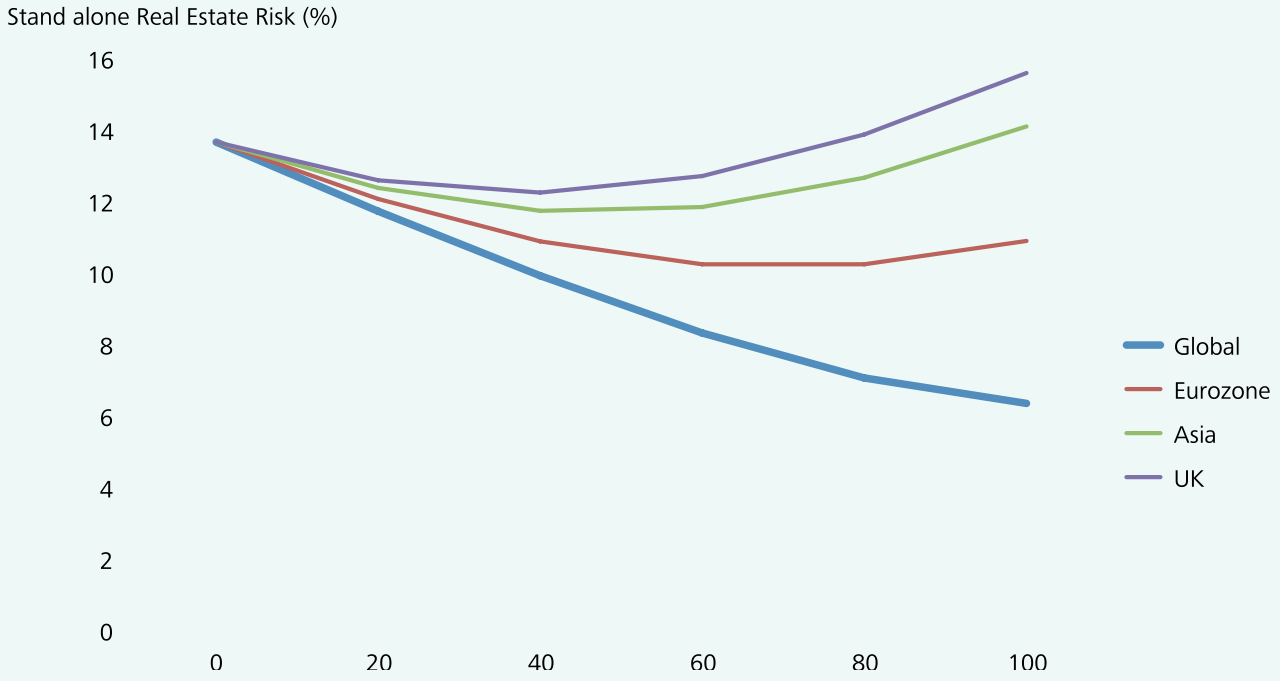
Risk decreases through country diversification

Risk increases with addition of leverage

Note: Table assumes LTV = 0.2 for the USA Real Estate portfolio. Table varies LTV for the 30-country Global (ex USA) portfolio via short USD position. Calculations assume that currency risk is hedged for the Global (ex USA) portfolio vs USD base currency.

The example of the US investor demonstrated the risk reduction benefits from increasing exposure to international real estate. This example assumed exposure across all global markets covered by the PRE2 model, weighted according to the size of each market. In reality, most investors have more targeted strategies reflecting a preference for or aversion to particular regions (such as Asia Pacific or North America) or particular countries. These more targeted strategies tend to be based on a combination of choices related to performance and risk, and the availability of suitable investment opportunities across markets. By making use of the PRE2 model it is possible to draw out the risk implications of exposure to different types of market. This is captured in Exhibit 6, which shows how real estate risk varied when increasing levels of international exposure based on four different international portfolios: Global ex-US; UK; Eurozone; and Asia. Loan-to-value is assumed to be 20% for each of these international exposures.

Exhibit 6: Risk implications of exposure to different international real estate markets: the case of a US investor diversifying overseas



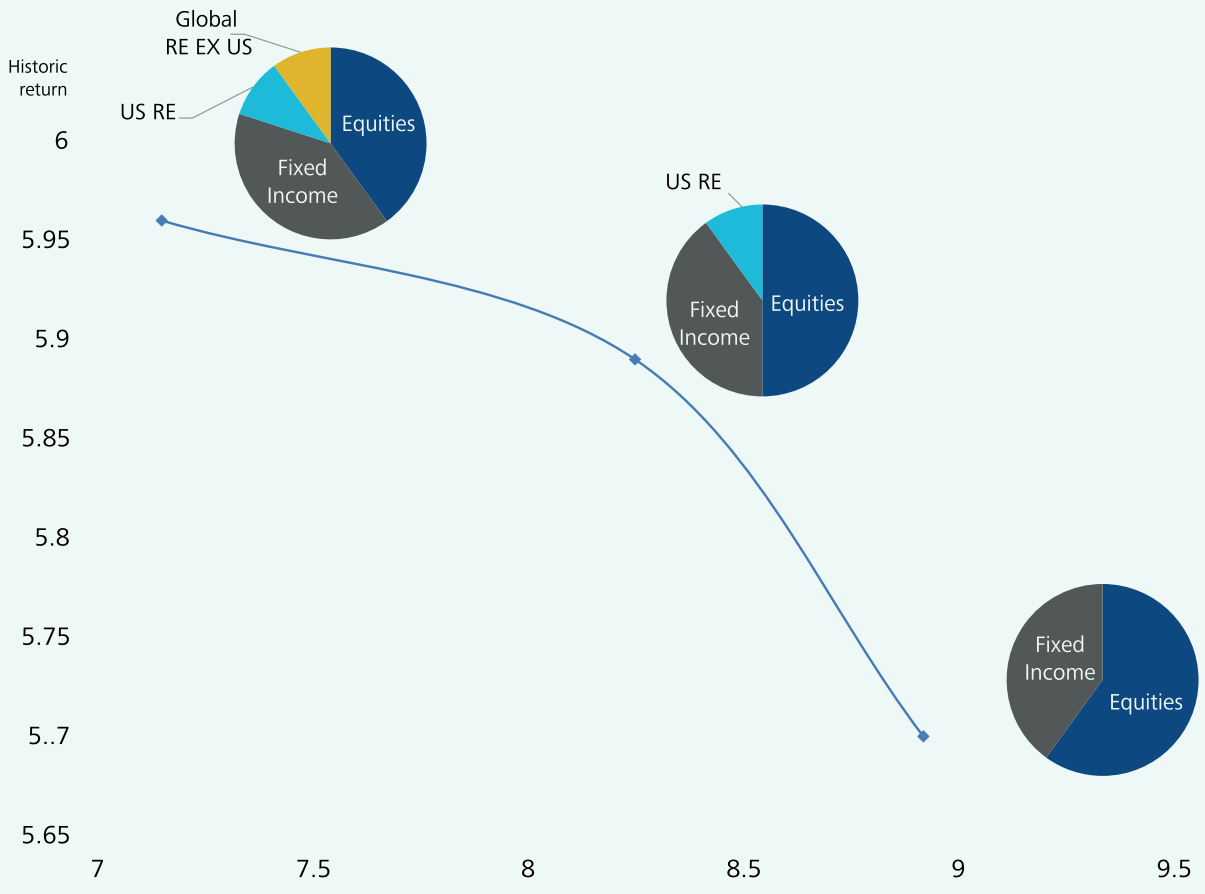
Source: MSCI Research

Note: Risk estimates based on different international real estate exposures, assuming 20% loan-to-value for domestic exposure and 20% loan-to-value for international exposure.

These results demonstrate that market selection has significant risk implications. Given the relatively high volatility of the UK and its correlations with the US, there are smaller risk reduction benefits in building a purely UK international exposure. The benefits were far greater for a Eurozone exposure, but the most significant benefits arose from exposure to the full range of markets in the IPD Global Index. Clearly, there are many additional scenarios that could be generated, but these examples illustrate the benefits of international exposure and how it can help drive portfolio construction as well as helping measure the risk of actual exposure.

Beyond having significant implications for the risks of the overall real estate portfolio, such differences in international exposure could have an impact on the risk and return of the multi-asset portfolio. In Exhibit 7, these portfolio-wide implications are shown for the case of a US investor with different allocations to the main asset classes and to real estate. The chart shows the risk and return of the different allocations based on historic returns and volatilities captured by the Barra Integrated Model. As expected, there were some risk and return benefits from adding real estate to the multi-asset portfolio, and these benefits were strengthened when adding international real estate.

Exhibit 7: Portfolio-wide risk adjusted returns with and without private real estate



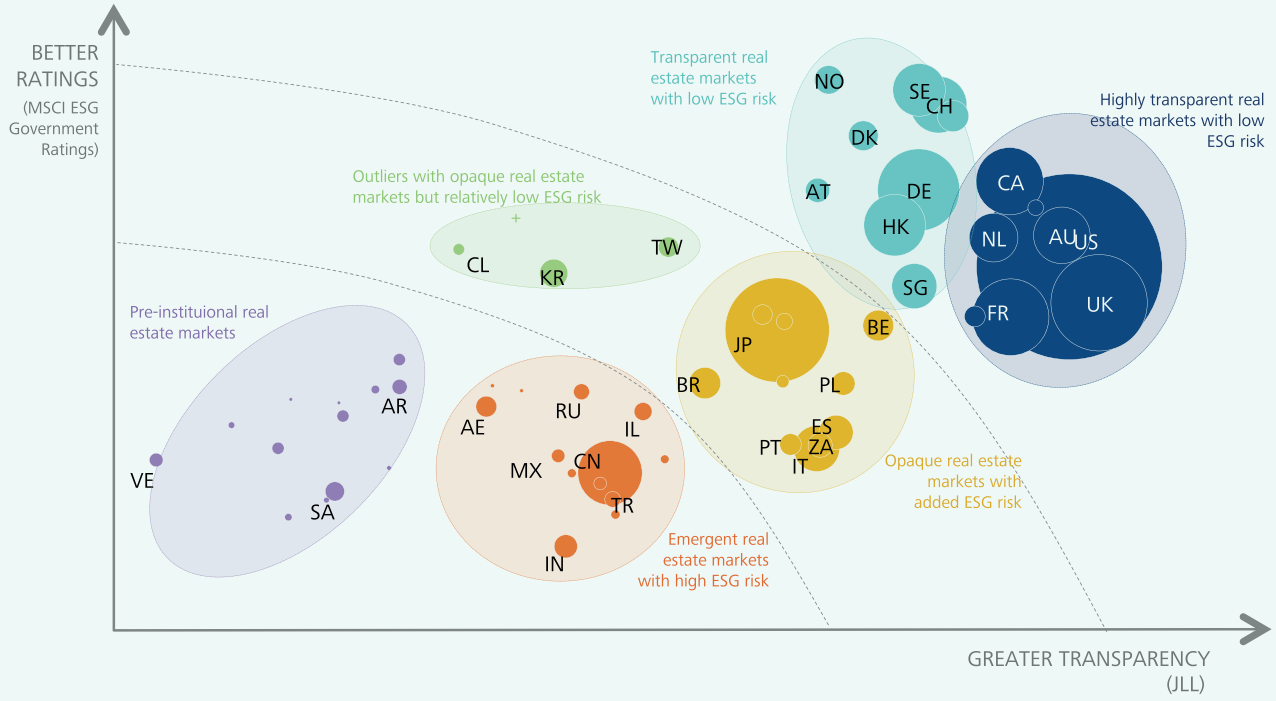
Note: Based on historic, 10 year annualized, return to end 2013 and BarraOne PRE2 Volatility.

OTHER RISK DIMENSIONS OF INTERNATIONAL REAL ESTATE EXPOSURE

Volatility tends to represent the central dimension on which overall market risks are measured, providing a powerful indicator of the possible variations in market performance that can be compared across asset classes. However, a series of more qualitative or institutional risks should also be considered. These institutional considerations involve the environmental, social and governance risks of countries, as well as more real estate-specific factors such as transparency and liquidity.

A summary of these more institutional risk factors is provided in Exhibit 8, which groups countries based on a combination of two main indicators, MSCI ESG Government Ratings and Real Estate Transparency.

Exhibit 8: Institutional real estate risks across global markets: MSCI ESG Government Ratings and Real Estate Transparency



Source: MSCI ESG Research; JLL

Note: Bubble size represents size of institutional real estate market.

- Environmental, Social and Governance (ESG) Risks at the country level. Many ratings of national risk focus on financial or sovereign risk often associated with risks of sovereign default and the transparency of governance. Beyond sovereign risk, there is a range of environmental and social factors that are increasingly being considered by investors as representing current or potential future risks across countries. These factors range from natural resources and environmental externalities to human capital risks. The results shown on the chart are based on the MSCI ESG Government Ratings, which draw from the broad range of Environmental Social and Governance Factors for over 130 countries. These ratings identify a country's exposure to and management of environmental, social, and governance risk factors and explain how these might impact on the long-term sustainability of its economy. By providing a long-term view on sustainability, the ratings aim to complement traditional government debt analysis for analyzing a country's credit-worthiness.
- Real Estate Transparency. The well-established 'Transparency Index' produced by Jones Lang Lasalle (JLL) is based on five dimensions of real estate transparency: Performance Data (e.g., performance series, valuations, market data), Market Fundamentals, Governance of Listed Vehicles (including financial disclosure), Regulatory and Legal (such as enforceability of contracts) and disclosure through the Transaction Process. Over the past 15 years the Transparency Index has captured improvements in real estate transparency across global markets, but also continuing variations between 'highly transparent' countries such as Australia, Canada, UK and US, and 'opaque' ones such as Ghana, Nigeria and Venezuela.

The relationship between these variables suggests that countries can be categorized into one of five main groups, as follows:

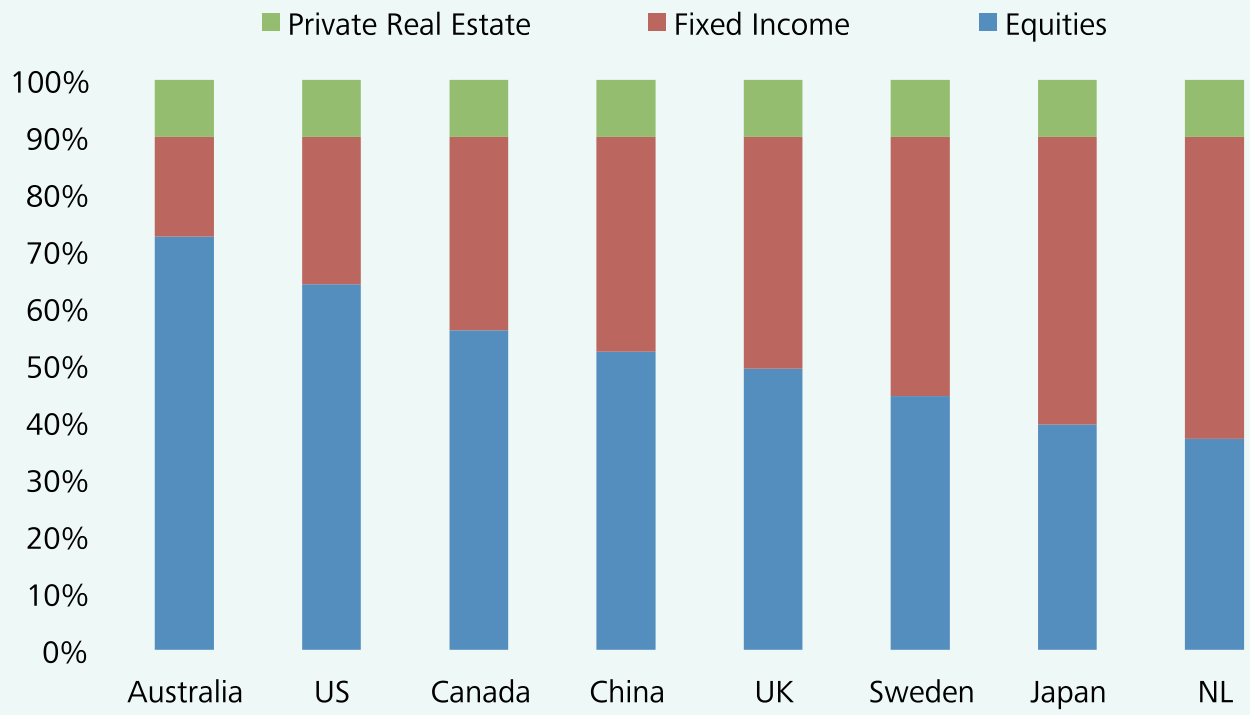
- Highly transparent real estate markets with strong MSCI ESG Government Ratings. As noted by JLL, these countries tend to be at the forefront of the "rising trend among governments and business to encourage a culture of 'open data,' supported by technological advancement." From a real estate perspective, each of these countries, with the exception of France, has a quarterly mark-to-market national performance series. Together, they represent 55% of the value of the global real estate market as represented by the countries in the chart, and are often seen as the core of a global institutional real estate portfolio.
- Transparent real estate markets with strong, if varying MSCI ESG Government Ratings. Many of these countries, including the Nordics, Switzerland and Germany have MSCI ESG Government Ratings at least as high as the first category, but their real estate markets lack the same level of transparency, often having annual rather than quarterly performance series and less disclosure of market fundamentals. There are however, marked variations in ESG ratings for these countries with, for instance, Hong Kong and Singapore having far lower ratings than, say, the Nordic countries.
- Opaque real estate markets with added ESG Government Risk. This category includes large real estate markets such as Brazil, Japan, Italy and Spain that suffer from some real estate opaqueness. Although they are termed 'transparent' by JLL, they are qualitatively less transparent than the first two categories and generally have lower ESG ratings.
- Emergent real estate markets with high ESG Government Risk. The countries in this category suffer from both opaqueness and low MSCI ESG Government Ratings.
- Pre-institutional markets, such as Argentina, Kuwait and Saudi Arabia.

A range of additional considerations needs to be incorporated to arrive at a meaningful allocation to individual markets. These include differential return expectations with, for instance, Asian and perhaps the US markets generally expected to generate stronger, demographically driven, growth than the Eurozone. They also include the costs of such exposures. These costs can relate to a range of dimensions including the increased need for staffing and oversight, higher fees, currency hedging and tax leakage. Although these differential cost and return assumptions do not directly impact on the risk of international exposure, they can have a significant implication for risk-adjusted returns.

INTERNATIONAL EXPOSURE FOR INVESTORS OUTSIDE THE US

While the US example provides a compelling case for international exposure for a US-based investor, the implications vary significantly from country to country. On the one hand, domestic markets varied in their risks and the extent to which they were correlated with other markets. For instance, the Dutch, Swedish and German markets had less risk than the US, so the case for international exposure could be less significant than for a US investor. On the other hand, the multi-asset-class context might vary and this could have implications for the risk contribution of real estate. These variations in the multi-asset-class context were summarized by the Towers Watson survey on pension fund allocations (see Exhibit 1) with, for instance, Australian, US and UK pension funds tending to have far higher allocations to equities compared with bonds than Dutch, Japanese and Swiss pension funds. For equity-dominated investors, real estate tended to reduce multi-asset-class risk, and for the bond-dominated it tended to increase it.

Exhibit 9: Multi-asset-class allocations for major global markets

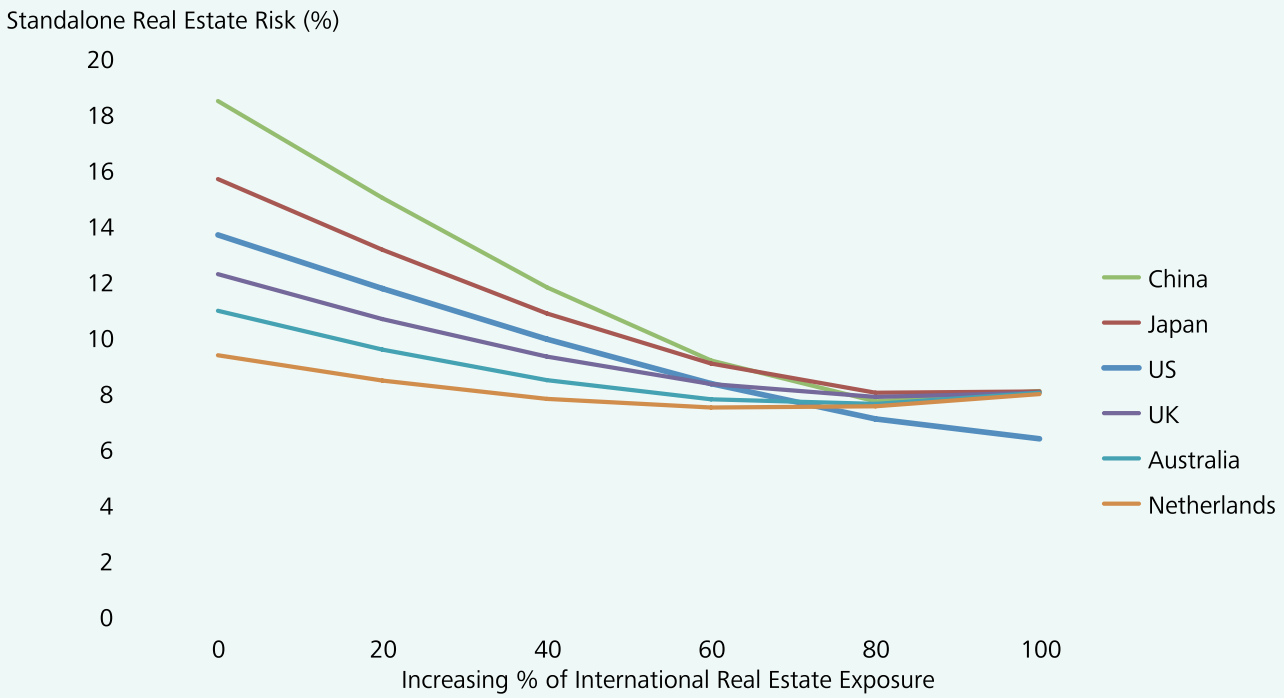


Source: MSCI Asset Owner Survey, Towers Watson

Note: Indicative asset class allocations assuming 10% in Real Estate and remainder split between Equities and Fixed Income. For purpose of comparison, other asset classes such as Private Equity & Hedge Funds allocated in proportion to Equities/Fixed Income.

The implications of these differences are summarized in Exhibit 10, which shows the risks of real estate exposure for different countries at different levels of international exposure. In all cases, the international and domestic exposures were assumed to be leveraged at 20% loan-to-value. Our study suggests that the more volatile markets of China, Japan and the US would benefit most significantly from international exposure. For China, for instance, the standalone risk of domestic exposure of 18.45% was reduced to 7.69% by increasing international exposure to 80%.

Exhibit 10: Multi-asset-class allocations for major global markets



Source: Reseach

Note: Risk estimates based on different international real estate exposures, assuming 20% loan-to-value for domestic exposure and 20% loan-to-value for international exposure.

CONCLUSION

Real estate home bias is starting to decline, with asset owners in many countries already investing internationally, or actively exploring the options for building such exposure. This trend is running in parallel with more risk managers seeking to integrate real estate risk analysis with other asset classes in their portfolio management processes. The diversification benefits of investing internationally can significantly reduce the risk of real estate exposure. As always with real estate, the implications vary from country to country and from investor to investor. A range of other factors also needs to be considered, such as return objectives and the risks associated with implementation and market pricing. But these trends, complemented by the increasing availability of real estate platforms through which investment can take place, are set to further erode the home bias that has, until recently, been a major characteristic of the real estate asset class.

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Ninth Floor
Ten Bishops Square
London E1 6EG
United Kingdom
+44.20.7336.9200

enquiries@ipd.com

@ipdnews