Performance Characteristics of Global Real Estate Securities

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Introduction

Institutional investors have recently expanded their real estate investment horizons to include publicly-traded real estate shares. These public real estate investments augment portfolios created through private direct ownership vehicles such as commingled funds and separate accounts. The primary force behind the shift into public vehicles is the desire for greater liquidity. The ability to trade claims of property ownership appeals to investors who have traditionally held property in private, illiquid forms. In addition, the daily valuation provided by public markets is attractive to those investors who are uncomfortable with appraisal-based valuations. For these and other reasons, institutional investor demand for publicly traded property shares has increased in the US and abroad.

While international diversification for equity and fixed income portfolios has become common within the institutional investor community, acceptance of international diversification of real estate portfolios has taken longer. Now, rapid growth in the publicly traded property sector has stimulated interest in the performance characteristics of real estate securities traded in markets around the world, as investors see the public markets as a means of achieving international diversification.

The ability to invest indirectly in real estate through property companies now exists in 26 countries. A number of indexes have been created to measure total returns in these countries. Although the composition of the indexes varies as does the calculation of returns, actual performance among the indexes appears similar and the correlation among the indexes is strong.¹ We use the Solomon Brothers Global Property Index (SBGPI) because of the reputation of the index provider, the quality and comprehensiveness of the data, and their choice of property companies for inclusion. The SBGPI covers 320 companies in 17 countries, from July 1989 through January 1996.

The continent on which a property company is listed appears to play a large role in determining performance.² For example, strong correlations exist among the returns of property companies that trade in countries within a continent while large differences exist across continents. For this reason, we focus on property share indexes grouped by continent. Specifically, we analyze performance for the US, the UK, Japan, Europe, and Asia.³

This article provides a US investment perspective. Hence, all returns are expressed in US dollar terms. This assumes that none of the currency risk is hedged, helping to simplify the analysis. An alternative would be to consider local currency returns, which assumes that all currency risk is completely hedged. Since dollar returns are more intuitive for most investors, and conversion from dollars is a fairly straightforward exercise, we have chosen the first course.

¹ For a graphical presentation of the performance of the four most commonly employed indexes, see Exhibit 4 in "International Real Estate Securities Indexes," by P.M.A. Eichholz and K.G. Koedijk, Real Estate Finance, Winter 1996.
³ Throughout this paper, Japanese performance is excluded from Asian performance. Likewise, the performance of UK property is not included in the European category.
Market Size and Growth

The recent growth of the US REIT market has been paralleled in many of the real estate securities markets around the world. Exhibit 1 shows the growth, both in market capitalization and number of traded firms, in the world property share markets. When the index was first calculated in July 1989, total market capitalization was approximately $89 billion. The market lost nearly $15 billion in value through the end of 1992, but since then has more than doubled, rising to nearly $185 billion as of January 1996. The average company size stood at $565 million in July 1989, falling to $367 million as of the end of 1992. By January 1996, the average company size had rebounded to $580 million.

EXHIBIT 1
Size of World Property Markets
July 1989 - January 1996

Growth among the five markets in this study mirrors the overall trend in the global market (Exhibit 2). All except for Asia and the US lost value from 1989 through 1992. During this period, the Asian market nearly doubled in overall market value, while the US REIT market expanded by 20%. Since 1993, all the markets under consideration grew considerably. The UK property sector expanded by 50%, the US market more than quadrupled, Japan's doubled, and the Asian market increased nearly three-fold. Despite the recent growth, however, the Japanese and UK real estate security sectors are currently smaller than they were in 1989.

In many of these markets, the reasons for contraction and growth are similar. The real estate decline of the late-1980s slowed the flow of private debt and equity capital into the sector, causing a decrease in transaction volumes and further erosion in property values. In the 1990s, the public equity market emerged as an efficient way -- or in some cases, the only way -- to draw capital back into the real estate market. As capital entered real estate via the public markets, owners began to convert private portfolios into publicly held shares, creating new opportunities for investors and property owners. As investors have become more accustomed to holding real estate in securitized form, the market has grown at a rapid pace. This growth is expected to continue in the future.
EXHIBIT 2
Size of Property Markets by Continent
July 1989 - January 1996

Source: Salomon Brothers, Heitman Research

Investment Performance
Growth alone is not a sufficient reason for investors to consider a sector of the investable universe. Traditionally, several reasons have been given for holding real estate assets in the institutional portfolio. They include the provision of an inflation hedge, favorable risk-adjusted returns, and diversification. The following section examines whether international real estate securities provide these benefits, and hence, should play a role in the institutional portfolio.

Inflation Hedge
Research tells a clear and consistent story here. International real estate securities have not provided a hedge against inflation, nor are they expected to going forward. This holds for both the expected and unexpected components of inflation over several different time periods and for a large number of countries. The lack of inflation-hedging ability is consistent with findings within the overall equity markets. In short, if reasons exist to hold real estate securities, the provision of an inflation hedge is not one of them.

Superior Risk-Adjusted Returns
Though international real estate can provide favorable returns, historical performance varies by continent. For example, $1,000 invested in the UK property sector in July 1989 would have fallen to $607 by November 1992, and then nearly doubled to $1,200 by mid-1995 (Exhibit 3). At the end of January 1996, the original $1,000 would be worth $1,132. This represents a compound annual return of 1.9% over the full period. The story is similar in Europe, but worse in Japan, where the original $1,000 would be worth $677 in January 1996. Over this time period, the compound annual growth rate of Japanese property stock index was -5.7%.

4 The most recent of these studies is Crocker, Liu, D. Hartzell and M. Hoesli, "International Securities as an Inflation Hedge," forthcoming in 1996 in Real Estate Economics.
In the US and Asia, the performance was significantly better. The hypothetical $1,000 invested in the US index grew to $1,620 by 1996, while the same amount invested in Asia would have grown to $4,468. In the case of the US, this represents a compound annual return of 7.5%, compared to 15.2% earned in Asia. In all cases, except for Europe, the best performance occurred from the end of 1992 through the middle of 1994, corresponding to the period during which substantial new capital entered many of these sectors.

As a final performance comparison, property shares underperformed common stock returns in all of the continents except Asia (Exhibit 3, Panel B). The gap between a country’s real estate securities index and its common stock index was greatest in Asia, where the stock index return lagged that of real estate by 24.2 percentage points. US real estate underperformed UK stock by 11 percentage points. Overall, the Common Stock world index outperformed the real estate world index by 290 basis points.
EXHIBIT 3, Panel B
Compound Annual Returns, Variability and Risk-Adjusted Returns for International Real Estate Securities
July 1989 to January 1996

<table>
<thead>
<tr>
<th></th>
<th>Real Estate Securities</th>
<th>Common Stocks</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
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<tr>
<td>US</td>
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<td>13.1</td>
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<tr>
<td>Europe ex-UK</td>
<td>1.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Japan</td>
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<tr>
<td>Asia ex-Japan</td>
<td>25.2</td>
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</tr>
<tr>
<td>World</td>
<td>6.4</td>
<td>19.2</td>
</tr>
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</table>

Source: Salomon Brothers, Heitman Research
SD = standard deviation, annualized
M/SD = mean divided by standard deviation

Variability of Returns

Returns on publicly traded real estate securities exhibit greater variability than private market investments. Exhibit 4 provides an example of this, using the US markets. Because private real estate investors typically appraise their properties just once per year, the variability of returns is low. The appraisal-based smoothing of the private market real estate return series is particularly apparent relative to the transactions-based return series of public real estate securities.

Graphs such as Exhibit 4 have led analysts to ask whether real estate securities exhibit behavior more similar to private real estate or to common stock. One study of US REITs concluded that they are hybrid investments. Since US tax law requires that 95% of net income be passed through to investors in the form of dividends, the income component of total return looks like real estate. By contrast, the price component of return moves closely with the stock market, and hence looks like investment in common stocks. The combination of the income and appreciation components leaves us with a hybrid asset. Since the structure of securities markets differs internationally, it is instructive to segment total return into its price and income components to analyze performance more thoroughly.

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\footnote{Anne Mengden and David J. Hartzell, “Real Estate Investment Trusts: Are they Stocks or Real Estate?” Salomon Brothers Inc Real Estate Research, August 1986.}
EXHIBIT 4
Return Volatility: Public and Private US Real Estate
March 1993 - March 1996

(%) Return

Source: Salomon Brothers, NCREIF, Heitman Research

With few private market real estate performance indexes outside of the US, it is difficult to compare public and private real estate directly on an international basis. As a proxy for this, we have compared the components of return of the international securities indexes to those of the overall equity market. Our logic: if a strong relationship exists between returns on property stock and common stock, it would be difficult to conclude that property stock performance represents private real estate performance.

We have examined the relationship between the price component of real estate securities returns and the price component of the corresponding common stock markets (Exhibit 5). Commonly referred to as beta, this relationship measures the slope coefficient

EXHIBIT 5
Relationship of Property Stock Performance to Overall Equity Market
July 1989 - January 1996

Source: Salomon Brothers, Heitman Research
in a regression of real estate security return on stock market return. A beta of one indicates that movements in the real estate security market are exactly related to movements in the stock market. The betas shown in Exhibit 5 are calculated on a 30-month rolling basis.

Betas change over time, as illustrated in Exhibit 5. For example, all of the betas were close to one at the beginning of the sample period, diverging thereafter in many cases. The US beta varied between 0.6 and 1.0, while the Asia beta declined over time to 0.6, from 0.8. This indicates that real estate securities in Asia showed increasing divergence from Asian stocks over this time period. Japanese betas increased in the early portion of the sample period, then declined toward the end. European and UK betas were consistently near one throughout the period, indicating a strong relationship with the stock market. From this analysis, we conclude that price movements in real estate securities tend to parallel price movements in stocks.

On the income side, dividend policies of US REITs differ substantially from those of non-property corporations. US REIT income streams, based on mandated distributions, behave like those of private market real estate. REITs in the US employ a residual dividend strategy, paying out almost all of the cash generated, while common stocks pursue a managed dividend policy. This means that the correlations between the income returns of US public real estate and US common stock are negative and significantly different from zero (Exhibit 6).

EXHIBIT 6
Public Real Estate and Common Stock
Income Return Correlations
July 1989 - January 1996

By contrast with the US, the correlations between the income return for public real estate and the stock market were between zero and one for the other markets studied. Japan represents an exception to this pattern. In Japan, the correlation is consistently equal to one, indicating that real estate security and common stock income move in tandem. The income component is a very small contributor to total return for both real estate and non-real estate companies in Japan. Combined with the results shown for the price component in Exhibit 5, this indicates that there is very little difference in Japan between a
real estate security portfolio investment and a common stock portfolio investment. While the conclusion is not as strong in the other non-US markets, there is still a strong relationship between the public real estate sector and the overall equity market.

### Risk-Adjusted Returns

As indicated previously, equity market returns exceeded those of real estate securities in all cases except Asia. In addition, in all cases except Europe, property sector standard deviations exceeded equity market standard deviations. With lesser returns and greater standard deviations, risk-adjusted returns were inferior in the property sector relative to the overall stock markets. Therefore, investments in property companies, except in Asia, did not achieve the objective of providing superior risk-adjusted returns.

### Diversification

Given that real estate securities do not provide an inflation hedge or superior risk-adjusted returns, the other investment benefit to examine is whether they provide diversification within a mixed-asset portfolio. Going in, we assumed that international property share investments would have similar diversification attributes to international common stock investments, which have been demonstrated to improve the risk/return profile of domestic-only portfolios. Exhibit 7 shows property index correlations by continent in Panel A and overall common stock index correlations by continent in Panel B. At least two conclusions emerge:

- In every instance, the correlation between property markets (Panel B) is less than the correlation between the same continents' overall equity markets (Panel A). In many cases, this difference is significant. Lower correlations imply greater diversification opportunities. These results suggest that international property investments can provide effective diversification -- even better than common stock -- for mixed-asset investors.

#### EXHIBIT 7, Panel A
Return Correlations -- Property Stock

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<thead>
<tr>
<th></th>
<th>UK</th>
<th>US</th>
<th>Europe</th>
<th>Japan</th>
<th>Asia</th>
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<tr>
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Source: Salomon Brothers, Heitman Research

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EXHIBIT 7, Panel B
Return Correlations -- Common Stock Returns

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<tr>
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<th>UK</th>
<th>US</th>
<th>Europe</th>
<th>Japan</th>
<th>Asia</th>
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<tbody>
<tr>
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<td>0.81</td>
<td>0.81</td>
<td>0.60</td>
<td>1.00</td>
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</tbody>
</table>

Source: Salomon Brothers, Heitman Research

♦ Japanese stocks tend to move closely with Asian stocks, as indicated by the correlation coefficient of .91 in Panel B. By contrast, property stocks in Japan and in the Asian countries exhibit a much lower correlation of .11. This indicates that property stocks could play an important role in diversifying an Asian portfolio. A similar conclusion can be drawn for the UK relative to the rest of Europe.

**Conclusion**

From an examination of international real estate security performance, we draw the following conclusions:

♦ Real estate securities do not provide an inflation hedge;
♦ Real estate securities do not outperform the stock market on a risk-adjusted basis; and
♦ Relative to common stock investments, real estate securities provide greater diversification across continents, as implied by lower correlations.

If an investor desires equity diversification, the real estate securities sector provides it more efficiently than the overall equity sector. The question of whether international securities provide real estate exposure is difficult to answer at this point, but these securities tend to exhibit behavior similar to the stock markets upon which they trade.

Research in the US has shown that efficient real estate portfolios contain a 75% to 85% allocation to private real estate, and a 15% to 25% allocation to public real estate securities.7 The benefit of liquidity, and the ability to gain exposure to sectors not typically held in private portfolios, exceed the cost of increased volatility exhibited by a real estate securities portfolio. Preliminarily, a similar argument can be made in the international real estate securities market. The diversification benefits obtained potentially exceed the marginally inferior risk-adjusted returns provided by real estate securities relative to common stocks. As more data become available, including a longer time series and greater detail on the property type focus of the individual companies that underlay each of the indexes, more research can be done on these issues.

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