

HOW TO INVEST INTERNATIONALLY? REGION AND PROPERTY TYPE ON A GLOBAL SCALE

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The home bias in investment portfolios is very large for real estate. U.S. property investors are only beginning to get interested in the investment opportunities abroad. In the Netherlands, where international real estate investment has been common for some time, about 30% of institutionally held real estate is located on foreign soil. More than half of that is invested inside Europe, however, so the Dutch institutions are less global than they appear. The same "home continent bias" holds for international property investors in the U.K.

This tendency to remain close to home can probably be explained by the high transaction costs (travel), administration costs, and general information disadvantages international investors have relative to their locally specialized competitors. In private markets like the real estate market, information asymmetries go against the international investor, who is likely to be an outsider within most markets unless local trusted partners can be found. This makes private markets difficult for international investment.

Although the home bias in real estate can be explained in the light of these information problems, the question remains whether institutions can reap sufficient benefits from international diversification when sticking to their own continents. Economic integration within continents is increasing, and macroeconomic factors like interest rates, employment, inflation, and GDP growth are showing increasingly stronger relationships within industrialized nations. Because these factors all influence real estate performance, this growing convergence will probably also mean greater integration of continental property markets. Eichholtz, Mahieu, and Schotman [1993] show that foreign trade is predominantly done among countries from the same continent, and that exchange rate volatility is much higher between currencies used in different continents than between the currencies of countries belonging to the same continent. They also find strong continental correlations in property returns.

In other words, it is likely that returns to real estate in countries within continents will show increasing similarities as a result of greater economic integration. For real estate investors wanting to reap the full benefits of international diversification, this implies an increasing need for a global strategy. Thus, we have two conflicting issues: a growing need to invest globally in real estate, combined with the information and transaction cost disadvantages for investors who go beyond their home base or area of expertise. These issues are reconciled through the securitization of real estate.

Securitization paves the way for uninformed investors. While lack of information gets punished in private markets, investors in public markets can remain ignorant while trusting the greater efficiency of these markets. For example, an American investor who wants to gain exposure to real estate in Singapore, but does not know the market very well, can just buy the market: all real estate companies listed in Singapore on a market-weighted basis. That way, the investor knows his returns are somewhat aligned with many other potentially more knowledgeable local players. This opportunity for indexed foreign real estate investment, which is ideal for investors who do not know enough about the foreign markets they want to enter, is made possible through the securitization of real estate. For direct real estate, index tracking is not possible.

Because property securitization solves many of the information problems once inherent in international property investment, it is no surprise that the recent growth of the global property share markets coincides with an increasing interest in international real estate investment. This includes interest by

U.S. institutional investors, who have never been famous for their activities in this field. In the past eighteen months, at least six international property share mutual funds have been established in the U.S., and these funds mostly aim at the institutional market. The global real estate securities market, meanwhile, now counts over 400 listed firms with a combined market capitalization of around U.S. \$375 billion.

Within this article is addressed the very old and often-asked question in real estate: Should one diversify by sector or by region? Here the question is addressed for the first time on an international basis. In remainder of this article, we discuss the data source used, and we review the performance of the global real estate securities market, both when looking at continental property share returns and sectoral returns. Correlations among the continental returns and among the sectoral returns are also examined.

Data

Our data are from the Global Real Estate Securities Database of Global Property Research. This data base provides information on all listed property companies in the world. For this article, only total returns of property companies aggregated to the continental level and to the global sectoral level are used. Three continents are distinguished: Europe, North America, and the Far East, and four property sectors: office, retail, industrial and residential. Property companies are considered to belong to a continent if their main stock market listing is in that continent. As of July 1997, the European index contained 167 companies, the North American 131 companies, and the Far Eastern index 107 companies.

For the sectoral property share indexes, only sectorally specialized property companies are used. Property companies are defined as sectorally specialized if at least 60% of their revenues are derived from one type of real estate. At July 1997, the office index included forty-eight companies, the retail index sixty-nine companies, the industrial index thirteen companies, and the residential index fifty-eight companies.

All returns are logarithmic total returns in U.S. dollar terms, which reflects the situation of an American investor who is not hedged against currency risk. Returns are provided on a monthly basis between January 1984 and July 1997.

Performance by Region

Exhibit 1 shows how the three continents have performed since 1984. Looking only at the attained level of the indexes, the Far East has shown the strongest performance: \$1 invested in the Far Eastern property share market in December 1983 was worth over \$12 by July 1997. Compared to that, the performance of Europe and North America is a bit weak. The same dollar invested in either of these two markets would be worth only about \$3.75 by July 1997. The certainty of receiving this payoff, however, is much greater in Europe and North America. The graph clearly shows a higher volatility for the Far Eastern property share markets.

Exhibit 2 provides numerical information on the performance of these three markets. The numbers are based on annualized monthly returns. The standard deviation of the Far Eastern returns is much higher than those for Europe and North America: 27.63% versus 13.74% and 15.49%, respectively. On a risk-adjusted basis, the performances of the three regions do not differ very much. The ratio between the average return and the standard deviation is 0.71 for Europe, while it is 0.66 for the Far East and 0.63 for North America.

Exhibit 2 also gives correlations among the continental property share markets. For an American real estate securities investor, investing in the other two continents can be useful, as the correlations are between 0.3 and 0.4. Judging from the reported correlation numbers, the European and Far Eastern markets have comparable potential for the diversification of an otherwise American property share portfolio.

Based on the findings from the continental property share indexes, we conclude that American property share investors can use foreign property share markets to alter the risk/return profile of their portfolios. They can lower their risk through diversification, and they can move toward the right along the efficient frontier (higher returns with higher risk) by adding Far Eastern property shares to their portfolios.

Performance by Sector

Diversification across sectors is another way of reducing overall portfolio volatility. This, too, can be accomplished through property shares. Property share investors have two ways of doing this. They can buy the shares of property companies with a diversified real estate portfolio, or they can buy a diversified portfolio of the shares of companies specializing in one type of real estate.

According to the data base of Global Property Research, 188 firms are diversified across property type, while 235 property companies are specialized. The specialized companies may be able to generate superior performance due to better information and more knowledge of their specific markets. Recent research has shown that specialized American REITs do perform better than their diversified competitors (see Eichholtz, Op't Veld, and Schweitzer [1997]). If this finding can be extended to property companies outside the U.S. the best strategy to diversify internationally across property types would be to build a portfolio of property companies specialized in different types of real estate.

Exhibits 3A-3D provide graphs of the performance indexes constructed for each of the four property types distinguished in this article. The graphs show that residential real estate has been the best performer in the period considered. Residential real estate has shown the highest average return, and \$1 invested in December 1983 would be worth \$6.25 in July 1997. This compares favorably with the end value of a similar investment in the office, retail, and industrial property share markets. The same dollar invested in industrial property companies would have been worth \$5.23 in July 1997. For retail property companies, that would have been \$4.59, and for office property companies, \$3.74.

Residential real estate especially appears to have held strong during the real estate crisis of the late 1980s and early 1990s. As the graphs show, the industrial, and to a lesser extent, the office property companies, were adversely affected by the market developments that occurred at the time, while the index for residential real estate did not show a similarly strong downward movement. Retail properties worldwide also performed relatively well during the general real estate crisis. In the period after that, office property companies performed relatively poorly, and their returns did not seem to make up for lost ground during the crisis period. This contrasts with the industrial property companies, which have shown strong performance since the early 1990s.

Another interesting observation from the graphs of the sectoral property share indexes is that the residential property companies were not affected by the stock market crash of October 1987, while the property companies investing in commercial real estate were. This may indicate less stock market sensitivity for residential real estate than for commercial real estate, which is in line with intuition and previous research.

Exhibit 4 shows how these index movements translate into returns and volatility numbers. Judging from the average returns, the less a property type has traditionally been regarded as investment grade, the better the performance. The average annualized monthly return for residential property companies is 13.49% in the sample period. For industrial property companies, the second-best performer in terms of average return, it is 12.17%. Retail property companies average 11.21%, and office companies 9.71%.

Including the standard deviations of these returns in the analysis does not alter the attractiveness of residential property companies. They show a standard deviation comparable to office and retail real estate. On a risk-adjusted basis, therefore, their performance remains strong. On the other hand, the high average return for industrial property companies is matched by a high standard deviation, 22.37%. In the sample period, industrial property companies generate the least attractive risk-adjusted returns.

The correlations among the sectoral property share indexes reported in Exhibit 4 are somewhat higher, on average, than the correlations among the continental property indexes. They vary between 0.5 and 0.7. This could indicate that it is more important to diversify across continents than across property types. The correlations among the commercial property types seem especially high. Between office and retail real estate, for example, the returns show a correlation of 0.63, and between office and industrial property company returns, the correlation is 0.71. The returns of residential property companies show relatively low correlations with the other property types.

This finding is in line with intuition, as the residential property market differs fundamentally from the markets for commercial real estate. First, demand for living space is probably less sensitive to the

business cycle than the demand for offices and retail real estate. Second, the market for residential real estate may be less prone to overbuilding. Grenadier [1995] shows theoretically that some property types' supply is likely to be much better adjusted to demand than others. Overbuilding is less likely for property types for which construction times are relatively short and for which the demand is not cyclical. Residential real estate fits that description well, while commercial real estate generally does not. The difference in cyclical behavior of the different property types may well explain the relatively low correlations found here.

Thus, based on the data analyzed here, we conclude that the case for including the shares of residential property companies in an indirect real estate portfolio is very strong. Not only have they generated the highest average return with the lowest volatility, they have done that independently from the returns to the property companies specializing in other types of property. In other words, they can substantially improve the performance of a property share portfolio of mixed property types.

Conclusion

Based on the findings reported here, we find that the correlations among regional property share markets are lower than those among the property share markets aggregated by sector. Correlations among the former markets vary between 0.3 and 0.4, while they are between 0.5 and 0.7 among the latter markets. This may indicate that property markets are more strongly segmented among regions than among sectors, and that strengthens the case for international diversification rather than diversification across property types.

Another interesting finding is the strong performance of the residential property share sector, both on a simple return and on a risk-adjusted return basis. The low correlations residential property company returns exhibit with the returns on companies that invest in commercial property types make the former group an interesting addition to an international property share portfolio, and the label "investment grade" would fit many residential property companies well.

Endnotes

Eichholtz, P., R. Mahieu, and P. Schotman. "Real Estate Diversification: By Country or by Continent?" Paper, Limburg Institute of Financial Economics, 1993.

Eichholtz, P., H. Op 't Veld, and M. Schweitzer. "Outperformance: Does Managerial Specialization Pay?" Working paper, Limburg Institute of Financial Economics, 1997.

Grenadier, S. "The Persistence of Real Estate Cycles." *Journal of Real Estate Finance and Economics*, 10 (March 1995).

Exhibit 2: Sample Statistics for Property Shares by Region Annualized monthly returns in U.S. dollars

Legend for Chart:

A - Europe
 B - North America
 C - Far East

	A	B	C
Mean	9.70	9.80	18.37
Standard Deviation	13.74	15.49	27.63
Mean/Standard Deviation	0.71	0.63	0.66
Correlations			
Europe	--	0.31	0.33
North America	--	--	0.40

Source: Global Property Research.

Exhibit 4: Sample Statistics for Property Shares by Sector Annualized Monthly Returns in U.S. Dollars

Legend for Chart:

- A - Office
- B - Retail
- C - Industrial
- D - Residential

	A	B	C	D
Mean	9.71	11.21	12.17	13.49
Standard Deviation	14.18	13.11	22.37	14.50
Mean/Standard Deviation	0.68	0.86	0.54	0.93
Correlations				
Office	--	0.63	0.71	0.63
Retail	--	--	0.57	0.49
Industrial	--	--	--	0.48

Source: Global Property Research.

GRAPH: Exhibit 1 - Property Share Returns Indexes by Region

GRAPH: Exhibits 3A - Residential Property Companies Total Return Index

GRAPH: Exhibit 3B - Industrial Property Companies Total Return Index

GRAPH: Exhibit 3C - Retail Property Companies Total Return Index

GRAPH: Exhibit 3D - Office Property Companies Total Return Index

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By PIET M.A. EICHHOLTZ

Piet M.A. Eichholtz, is a managing director of Global Property Research in Maastricht, the Netherlands.

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