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The Impact of Country Risk on International Real Estate Returns

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Abstract:

Commercial real estate investors have well-established methods to assess the risks of a property investment in their home country. However, when the investment decision is overseas another dimension of uncertainty overlays the analysis. This additional dimension, typically called country risk, encompasses the uncertainty of achieving expected financial results solely due to factors relating to the investment's location in another country. However, very little has been done to examine the effects of country risk on international real estate returns, even though in international investment decisions considerations of country risk dominate asset investment decisions. This study extends the literature on international real estate diversification by empirically estimating the impact of country risk, as measured by Euromoney, on the direct real estate returns of 15 countries over the period 1998-2004, using a pooled regression analysis approach. The results suggest that country risk data may help investor's in their international real estate decisions since the country risk data shows a significant and consistent impact on real estate return performance.

Keywords: *International real estate returns, country risk*

The Impact of Country Risk on International Real Estate Returns

1. Introduction

Commercial real estate investors usually have well-established methods to assess the risks of a property investment in their home country. However, when the investment decision is in overseas another dimension of uncertainty overlays the analysis. This additional dimension, typically called country risk, encompasses the uncertainty of achieving expected financial results solely due to factors relating to the investment's location in another country. Currency fluctuations, profit repatriation issues, macroeconomic performance, political or legal issues are just some of the factors that may create risk in cross-border transactions. In other words, the decision to invest in a foreign real estate market is a two-step decision. In that an investor has to not only assessing the quality of the real estate investment in another country, as would be done for any domestic real estate investment, but the investor needs to evaluate the risk associated with the country in which the property is located. Should the quality of the real estate investment be assessed as good but the country risk assessed as bad, the investment should not be made. Thus, in international investment decisions, considerations of country risk dominate asset investment decisions (Saunders and Lange, 1996). In other words, country risk should be the first level of analysis for internationally active real estate investors.

Little has been done to examine the effects of country risk on international real estate investment. One possible reason for this may be the common misconception that country risk is relevant only to investment in less developed countries and not for developed nations. This is only true, however, if country risk is defined solely in terms of political risk, which is often considered as one and the same as country risk. Political risk measures are based on factors such as frequency of changes in the government; conflicts with other countries; violence; armed insurrections; failure to meet international debt obligations; and so on. Country risk on the other hand encompass many more elements than political risk such as: blocked funds; repatriation constraints in the form of exchange controls; expropriation of property or resources; inconvertibility of currency; war damage; civil strife; actions against personnel, for example, kidnapping; limits on remittances; government interference with the terms of a contract; discriminatory taxation; politically based regulations on operations; and the loss of copyright protection (Howell and Chaddick, 1994; and Buckley, 1992). In other words, country risk is a much broadly concept than simply political risk. As such country risk should be an important determinant of the asset allocation decisions of international real estate investors, even when foreign investment is restricted to developed nations (Erb et al, 1996b).

There are four main contributions of this paper. First, to my knowledge this is the first study to empirically estimate the impact of country risk on the real estate returns using pooled data analysis. To do this we use total returns data and country risk rating on 15 countries over the seven years 1998-2004, while the robustness of the results are examined by testing for structural stability.

Second, in addition to providing information on the significance of country risk on international real estate returns, this research facilitates a comparison of the results within the equity market using country risk rating data, which have produced mixed

results. For instance, Erb et al (1996a) studied the effect of country risk rating from Institutional Investors Country Credit Rating (IICCR) and International Country Risk Guide (ICRG) on 47 countries (twenty-one developed and twenty-six emerging) using data from September 1979 to March 1995. The results indicate the significance of the country risk variable for the full sample (all countries) and the split sample (developed markets and emerging markets). However, in a subsequent paper, using data for the period July 1984 to June 1995, Erb et al (1996b) employed two methodologies: (1) using the lagged value of the risk attribute as the independent variable and (2) the lagged change in the value of the risk attribute as the independent variable and finds that the country risk variable using either a univariate or multivariate approach is insignificant.

Third, this study expends the real estate literature that has previously used the country risk ratings of IICCR (Liang and McIntosh, 2000) and the Economic Intelligence Unit (EIU) (Dockser et al, 2001) with those from another reputable organisation, Euromoney. This is important as the variables used by the various rating agencies for the definition of country risk slightly differ. The Euromoney country risk rating is strongly influenced by the ratings of Moody's and Standard and Poor's credit risk scores, while the IICCR data is based on a survey of bankers. Indeed, Liang and McIntosh (2000) note that while the Euromoney country risk ratings are based on the same scale as that used by IICCR (0 to 100) the authors find that there are significant differences in the ratings of some countries, although the correlation between the two rating scores is extremely high (0.98).

Finally, previous studies of international real estate investment have tended to rely on notional or market data for their real estate returns with all the inherent problems of defining what is 'prime' property in each country and the different methodologies use by the local real estate agents to calculate returns. This study tries to mitigate these issues by using data from organisations that use the same methodology for calculating returns from actual real estate portfolios.

The remainder of the paper is organised as follows. In Section 2, we justify the choice of our country risk proxy. The data is described in Section 3. The statistical methodology and results are presented in Section 4. Section 5 summarises the findings and suggests future areas of research.

2. Country Risk

The formal evaluation of country risk grew out of the need to evaluate the credit worthiness of sovereign nations, and was extended within the financial sector to evaluate private foreign entities. Country risk assessment often attempts to identify the impact of socio-political changes or relatively infrequent economic shocks that cannot be predicted from statistical analysis of country data. A full risk study therefore theoretically requires qualitative as well as quantitative assessment.

Several sources of information on country risk exist. The nine most popular risk measures, available by subscription or through publications, are described in great detail by Coplin and O'Leary (1994). The authors finding that the main factors examined by the rating organisations are political and economic-financial ones, and the total number of factors used may vary from less than ten to more than twenty.

Important differences were also found in the weights given to the specific factors included in the qualitative component of the overall country risk ratings.

We shall concentrate on only three country risk ratings, the country risk reports of EIU and IICCR used in previous real estate market studies by Dockser et al (2001) and Liang and McIntosh (2000) respectively and the country risk the ratings produced by Euromoney used in this paper.

The EIU country risk reports are published quarterly with monthly updates. These reports summarise the risk ratings for all 100 key emerging and highly indebted countries. The EIU risk rating methodology examines two different types of risk: (1) country risk, as determined by (with weights in parentheses) political (22%), economic policy (28%), economic structure (27%), and liquidity (23%) factors; and (2) specific investment risk. Three different types of specific investment risk are considered: currency risk (associated with accepting foreign exchange exposure against the US dollar), sovereign debt risk (associated with foreign currency loans to sovereign states), and banking sector risk (associated with foreign currency loans to banks).

The Institutional Investor magazine compiles semi-annual country risk surveys (IICCR) which are based on responses provided by leading international banks. Bankers from 75-100 banks confidentially rate more than 135 countries on a scale of 0 to 100, with 100 representing the lowest risk. The individual ratings are weighted with greater weights assigned to responses based on the extent of a bank's worldwide exposure and the degree of sophistication of a bank's country risk model. IICCR country risk surveys are published in the March and September issues of the monthly Institutional Investor's magazine.

Similar, to IICCR the Euromoney Country Risk (ECR) index provides semi-annual country risk ratings and rankings published in March and September. Countries are given their respective scores based on nine components, and are ranked accordingly. In order to obtain the overall country risk score, a weight is assigned to each of the nine categories (political risk, 25%; economic performance, 25%; debt indicators, 10%; debt in default or rescheduled, 10%; credit ratings, 10%; access to bank finance, 5%; access to short-term finance, 5%; access to capital markets, 5%; and discount on forfeiting, 5%). The best underlying value per category achieves the full weighting (10 or 25), while the worst scores zero. A country risk score of 10 (25) implying zero risk, whereas a value of zero implies high risk, i.e. higher the rating the lower the risk. All other values are calculated relative to the best and worst scores. We use the ECR ratings in this paper for two reasons.

First, Dockser et al (2001) note that many of the EIU ratings are not available on a consistent basis for more than a year or two, with data prior to 1999 only available in an aggregate form. In contrast, Liang and McIntosh (2000) used the IICCR data as it is calculated on a consistent basis for many years. The IICCR data, however, is based on much more subjective criteria than rating other systems and since there are numerous factors that simultaneously influence a countries risk whenever country is rated on subjective criteria, it is hard to define the exact parameters taken into account. Thus, the factors used by the surveyed panel are likely to change through time depending on what the panel think is relevant (Erb et al, 1996b). In addition, a

survey based risk assessments is more easily influenced by the subjective biases of the individual risk assessor than would be the case from more quantitative approaches. Coplin and O'Leary (1994) argue therefore that the qualitative aspects used in country risk assessment tend to make the results more of an art than a science. Additionally, the IICCR ratings provide only an overall score of each countries risk. In contrast, the ECR rating are based on both objective and subjective assessment and are constructed on a consistent basis for many years; covers all the countries in this study and more; as well as providing four measures of country risk. The first three measures are Political Risk, Economic Risk and Financial Risk; the fourth is the overall country risk rating. The Political Risk rating captures different aspects of political stability, all of which potentially affect property rights. The Economic Risk rating captures current macroeconomic strengths and weaknesses and so influences future investment returns. Financial Risk rating assesses a country's ability to pay its sovereign debt and so indicates the possibility of the imposition of exchange controls to meet such a crisis[1].

Second, the numerical score assigned to each of the four categories of country risk provides a convenient methodology for conducting regression analysis. For example, the sovereign risk credit ratings of Standard and Poor's and Moody's are usually indicated by letters (AAA, AA, etc) and are thus less convenient for statistical analysis, however, Euromoney experts converts the letter grades into numerical values to facilitate their use in an empirical investigation.

Nonetheless, we recognise that the ECR rankings have some shortcomings. First the use of objective and subjective assessment means that there is the possibility of double counting in some categories (Buckley, 1992). Second, Haque, et al (1997) note that the ECR ratings are usually higher for Asian and European countries than Latin American or Caribbean countries than that provided by other agencies such IICCR. Third, Boley et al (2000) note that rating agencies are hesitant to downgrade their country risk ratings for two reasons, First, from a fear of spoiling business relationships and second from a fear of contagion effects across countries in the same region. Nonetheless, Ades et al (1998); Erb et al (1996a, 1996b); and Diamonte and Liew (1996) among others, are supportive of using such ratings in econometric models.

3. Data

Previous studies of international real estate diversification have tended to rely on notional or market data for the real estate returns, with all the inherent problems of defining what is a 'new' or 'prime' office consistently across countries and the problems associated with different methodologies used by local real estate agents to calculate income and capital returns. This study tries to mitigate these issues by using data from organisations that use the same methodology for calculating returns based on the actual performance of real estate portfolios. The returns therefore should be more suitable for the purpose of a comparison of real estate performance across the countries. We use the total returns from a number of data bases for 15 countries over the period 1998 to 2004. The 15 countries are: Australia, Canada, Denmark, Finland,

[1] All but South Africa have Financial Risk scores of 10 (the maximum) and so this measure of country risk is not included in the following analysis.

France, Germany, Ireland, Netherlands, Norway, New Zealand, Portugal, South Africa, Sweden, UK and USA.

Data for 11 countries: Canada, Denmark, France, Germany, Ireland, Netherlands, Norway, Portugal, South Africa, Sweden, and the UK, comes from the Investment Property Databank (IPD). The IPD index is based on the full portfolio records on 35,000 properties from over 500 major investors with a market value of £228bn, at the end of 2004. The sources and methods used by all the other organisations is basically the same as that used by IPD[2].

The US returns series comes from the National Council of Real Estate Investment Fiduciaries (NCREIF) and is based on the performance of 4,713 properties worth $189 billion dollars at the end of 2005. The data for Australia comes from the Property Council of Australia (PCA) who produce an appraisal based index, in conjunction with IPD, compiled from data collected from more that 35 of Australia's largest property investors and managing agents. The index for New Zealand is complied by the Property Council of New Zealand (PCNZ) and like that produced by PCA is compatible with the approaches of the NCREIF in the US and IPD in the UK. The Finish index is produced by Kiinteistotalouden Instituuti (KTI) and is again IPD compliant. The KTI index covers all the major property types in the largest cities in Finland with a total market value of over €12 billion, which is approximately 60% of the value of the holdings of the financial institutions and property companies in Finland.

4. Methodology and Results

The methodology utilises the approach of earlier studies by Erb et al (1996a, 1996b) and Diamonte and Liew (1996) who used IICCR and ICRG country risk data as independent variables to assess the performance of emerging equity markets. However, this paper uses the country risk scores from Euromoney as the independent variable, while the dependent variable is the total returns of direct real estate in 15 countries over the period 1998 to 2004.

Strong linkages between real estate and the wider economy have already been established in a number of studies (see Key et al, 1994 for an extensive review). In addition, the results of Erb et al (1996a, 1996b) and Diamonte, and Liew (1996) suggest that a univarate model, with only country risk as the independent variable, may be miss-specified. So to account for the impact of other macro-economic factors and to avoid model misspecification we include real GDP and Inflation as two other explanatory variables in our model. The real GDP data for the 15 countries comes from the Global Market Information Database. The inflation data is from Thompson-Datastream. The final linear model is chosen is therefore:

$$\mathrm{Ret}_{it} = \alpha + \beta \mathrm{CR}_{it} + \beta \sum \mathrm{X}_{it} + \varepsilon_{it} \qquad 1$$

where: Ret_{it} = total real estate return for country i, at time t

[2] See "IPD Measurement Methods": http:/www.ipdglobal.com/about_ipd/ipd_methods.asp

CR_{it} = the Euromoney country risk variables; Overall Country Risk (OCR), Political Risk (PR) and Economic Risk (ER) at time t.
X_{it} = a number of economic variable thought to influence real estate returns for country i, at time t (e.g. real GDP and inflation)
ε_{it} = residual country specific return, at time t.

Since, the all three country risk indices are designed such that the higher the index number, the lower the risk assessed for the country we hypothesise a negative relationship between each country risk score and real estate market returns. Based on previous research a positive relation is hypothesised between real estate returns and the two macro-economic variables; GDP and inflation.

Given the small number of time periods (7) and the larger number of countries (15) we pooled the data of all 99 observations (data on returns for Denmark, Portugal and, Norway are not available for 1998 and 1999) for each variable to estimate equation 1, in order to utilize as much of the data as possible and to improve the relative precision of the estimated coefficients. However, the pooled data results impose the restriction that parameters are the same in each of the seven periods, i.e. the structure of the underlying equations has not changed. To test for the structural stability of the model we the dummy variable approach associated with Gujarati (1970a and 1970b). The test for structural shift in the model suggested by Gujarati (1970a and 1907b) is based on the significance of the changes in the intercept coefficients in the post 1998 period. Using the pooled data we therefore also estimate the following equation:

$$Re_{it} = \alpha + \beta CR_{it} + \beta \sum X_{it} + \beta D_{1999} + \beta D_{2000} .... + ... \beta D_{2004} + \varepsilon_{it} \qquad 2$$

We assume D = 0, for 1998, the control year, D = 1 for 1999 (0 for other years), D = 1 for 2000 (0 for other years), etc. The model specifies that only the intercept parameter varies. Given this assumption, if the differential intercept coefficients (β_{1999}, β_{2000}, β_{2001}, ...β_{2004}) are statistically significant, then a structural shift of the underlying equation has occurred with regard to the intercept over the seven-year-period, which implies that the model parameters for each period are different.

Maddala (2001) however warns against making inferences about stability or instability of the dummy variable coefficients by looking at the t-values alone. Accordingly, we also perform the restricted F test suggested by Gujarati (2003) to compare the pooled data estimate results (equation 1) with the time-dummy variable results (equation 2). The test follows an F-distribution with m and n-k degrees of freedom and is calculated as follows:

$$F = \frac{(R_{UR} - R_R)/m}{(1 - R_{UR})/df} \qquad 3$$

where: R_{UR} is the unrestricted R^2 of the model including the time dummies and R_R is the restricted R^2 of the pooled data estimate, m is the number of restrictions, and df is the degrees of freedom (n-k) where n is the number of observation and k is the number of coefficients in the unrestricted model (see Gujaranti, 2003).

The pooled regression results of equation 1 are presented in Table 1 for each individual measure of country risk: Overall, Political and Economic (models 1 to 3) and for the Political and Economic risk variables together (model 4). The overall country risk variable (OCR) and the economic risk variable (ER) both show a significant (at the 6% level) and negative relationship with international real estate returns (models 1 and 3, respectively). In contrast, the political risk (PR) score whilst showing the correct sign (-ve) is insignificant at even the 15% level. Furthermore, when the PR and ER variables are estimated jointly the there is clear evidence of multicolinearity between the two variables with now both coefficients proving to be insignificantly different from zero (model 4). This implies that the political and economic risk scores are measuring similar characteristics of country risk. This is also indicated by the high degree of correlation between PR and ER at 0.99.

Table 1: Pooled Regression Results 1998-2004

Model	1		2		3		4	
Variables	Coefficient	T-stat	Coefficient	T-stat	Coefficient	T-stat	Coefficient	T-stat
Constant	16.22	2.74	12.40	2.31	11.30	3.30	12.35	2.31
OCR	-0.11	1.91						
PR			-0.29	1.39			-0.07	0.26
ER					-0.30	1.90	-0.26	1.30
Inflation	-0.27	0.74	-0.13	0.37	-0.21	0.60	-0.24	0.65
Real GDP	1.85	8.16	1.83	8.03	1.84	8.14	1.84	8.10
Adjust R2	40.40		39.35		40.38		39.79	

Real GDP shows a significant and positive relationship with total real estate returns, as indicated in previous studies. In contrast, the inflation variable shows the wrong sign and is insignificant in all models, which maybe due to the low levels of inflation in the sampled countries over this period.

Table 2: Test of Model Stability: 1998-2004

	Coefficient	T-stat	Coefficient	T-stat	Coefficient	T-stat	Coefficient	T-stat
Constant	15.93	2.46	11.14	1.88	12.90	3.21	10.28	1.75
OCR	-0.10	1.59						
PR			-0.22	0.90			0.21	0.61
ER					-0.32	1.88	-0.42	1.75
Inflation	-0.16	0.36	0.04	0.09	-0.12	0.31	-0.01	0.02
Real GDP	1.82	6.59	1.77	6.41	1.81	6.65	1.80	6.58
D1999	-0.76	0.42	-0.37	0.20	-1.32	0.70	-1.67	0.85
D2000	-0.73	0.41	-0.53	0.28	-1.55	0.88	-2.25	1.07
D2001	-0.40	0.21	-0.43	0.21	-1.11	0.60	-1.77	0.83
D2002	-2.59	1.40	-2.56	1.32	-3.27	1.82	-3.87	1.88
D2003	-0.22	0.12	-0.29	0.15	-0.69	0.38	-1.05	0.54
D2004	-0.51	0.29	-0.17	0.09	-1.18	0.67	-1.70	0.86
Adjust R2	38.55		37.39		39.24		38.81	
F test	0.52		0.50		0.70		0.75	

Table 2 presents the stability test results using the dummy variable approach of Gujarati (1970a, 1970b). The calculated t-statistics of the time dummies (β_{1999}, β_{2000}, β_{2001}, ...β_{2004}) in Table 2 indicate that in no period is there evidence of a change in the intercept across all models, at the usual levels of significance. A result confirmed by the restricted F tests suggested by Gujarati (2003) shown in the final row of Table 2. The F test statistics show that across all model specifications there is no evidence of structural instability, as the computed F statistics are all well below the 5% critical values (2.2). In other words, the country risk scores show a significant and consistent impact on real estate return performance and as such country risk

ratings should prove helpful to investor's in their international real estate allocation decisions.

5. Conclusion

The move to globalise stock and bond markets has also encouraged investor's to consider international real estate. However, investment overseas leads to an additional risks faced by investors not found in their local market, country risk, which dominates any asset investment decisions and so should be the first level of analysis in any international diversification strategy. The growth in international real estate investment has therefore under-scored the importance of using reliable country risk assessment when undertaking international investment. However the impact of country risk on international real estate investment has received scant attention in the real estate literature.

To examine the impact of country risk on international direct property investment we use the annual returns of direct real estate from 15 countries and the country risk ratings from Euromoney. The returns data used is constructed on a consistent basis and based on performance of actual portfolios. This data used in preference to usual data sources which are based on notional returns in order to increase the comparability of the returns from differing countries across the world. We empirically estimated the impact of country risk on the international real estate returns using pooled data analyses, the robustness of the results examined by testing for structural stability. The results suggest that country risk ratings have a significant and consistent impact on real estate return performance and therefore should help internationally active real estate investors in their asset allocation decisions.

This research like all others is subject to a few caveats. First, the analysis and methodology examined in this paper deals only with country risk, and does not attempt to address any addition return that investors may require for the additional risk associated with the local real estate market. Such local market risks can vary significantly from one country to the next, even for countries with similar country risk profiles. For instance, Keogh and D'Arcy (1994) find that even within Europe the real estate markets of London, Barcelona and Milan display markedly different levels of market maturity and hence local market risk. The country risk scores used here, however, should already capture a significant portion of this local real estate market risk since country risk and real estate market risk tend to be related.

Second, the countries analysed, apart from South Africa, are well developed politically and economically and so display low levels of country risk. Indeed, all but South Africa score the maximum 10 out of 10 on the Financial Risk index. In addition, all of the 15 countries, excluding South Africa, rank in the top quartile on all four country risk ratings produced by Euromoney in each and every year from 1998 to 2004. However, it is the countries with the lowest economic, political and financial country risk scores that need the most attention when analysing international real estate investment. So although the results of this study indicate the significance of country risk ratings on real estate returns future studies should examine a wider and more diverse group of countries.

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