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Introduction to the Special Issue of International Real Estate Review

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1. Introduction

The four articles presented in this special issue of the International Real Estate Review were prepared for and presented at an international real estate symposium organized by DePaul University, which took place on 3-4 July 2012 at the Grand Hyatt Hotel, Macao SAR China.¹ Each paper subsequently went through the typical review process of the International Real Estate Review.

The four papers cover a wide range of topics, from the role of public markets in international real estate diversification, to international evidence on REIT (Real Estate Investment Trust) market anomalies, to house price inflation in China, and to evidence on the relative performance of private equity real estate joint ventures. The papers presented here generated spirited discussions at the conference. Those attending the conference offered helpful comments and suggestions.

¹ I would like to thank Ko Wang, Rose Lai, and the four invited paper authors and referees who contributed to the success of the conference. I would also like to thank the other presenters and other participants in the conference, Scott Fung, Jeff Fisher, Bob Edelstein, Jarjis Sa-Aadu, Susanne Cannon, and Tyler Yang.

2. Summary of This Issue

In the first article of this volume, Brian A. Ciochetti, Rose Lai, and I measure the benefits of international real estate diversification in an equilibrium framework in which public real estate markets play a key role in determining the extent to which international property returns move together in dramatic fashion and in which portfolio volatility will be reduced by cross-border property investment. The basic idea of the model is quite simple. The model assumes that real estate assets can be held in one of two different organizational forms: either through publicly-traded real estate investment trusts (REITs) or nonpublicly-traded private equity real estate funds. An immediate shock in one market need not, however, cause an immediate effect in the other market but the two markets will, over time, move back into equilibrium with one another, but not until capital flows from one market to the other.

Further, over time publicly-traded REIT markets in the various countries may become more synchronized, reflecting increased integration and interdependence. The latter feature of publicly-traded REIT markets has received much attention in the literature, while the former feature has not. In this setting, international diversification should have little effect on the variance of one's portfolio under the following conditions: (1) if public real estate markets are integrated internationally, as it helps to ensure that public real estate securities prices are positively correlated across international borders and moving together in lockstep; and (2) if, at a minimum, public and private real estate markets are partially segmented (in the sense that returns on real estate assets will be equal across domestic markets in equilibrium). When the partially segmented assumption is relaxed to almost or complete segmentation from one another, significant differences in returns across the two markets will persist, essentially guaranteeing some positive diversification effects even if public real estate markets completely integrated. These results imply that it is possible to reach the wrong conclusion about the benefits of cross-border property investment unless one couches the analysis in terms of a rational, sentiment-based model of private and public equity securities, in which the supply of capital in these segmented markets affect the prices of public real estate securities relative to prices of the actual real estate.

The major empirical problem faced in testing this theory is accounting for partially segmented real estate markets. Data are needed not only on the returns on publicly-traded REIT securities across different markets, but also on commercial real estate returns for these same countries. The data

requirements limited the analysis to the years in the paper (i.e., 1998 to 2012), and to fourteen European countries, three Pacific Rim countries, and the United States.

The findings in the paper suggest that U.S., European, and Pacific Rim real estate investors gain much by international diversification, with the latter gaining somewhat more than U.S. investors. The results vary across tax-transparent European countries with respect to the market relatedness to the world factor, with public real estate securities in tax-paying European countries having characteristics of both stocks and real estate more so than in tax-transparent countries. One interesting question is whether the results extend in general to other Pacific Rim countries and what happens over time to international real estate diversification benefits after countries start a publicly-traded REIT market.

In the second article of this volume, Mehmet Akbulut, Su Chan, and Mariya Letdin analyze whether REIT securities just normally trade like stocks or real estate. For their analysis, Akbulut, Chan, and Letdin examine three stock price calendar anomalies to determine the extent to which REIT securities behave similarly to general stocks with respect to the manifestation of these anomalies. The anomalies they consider are effects related to day of the week (Monday), turn of the month (year), and seasons of the year (May-to-October) and holidays.

The Akbulut, Chan, and Letdin analysis is interesting and insightful. REITs are among the least risky of industries and the least likely to be subject to overconfidence bias in pricing of all securities. Overconfidence is likely to influence the judgment of investors relatively more when they are analyzing relatively vague, subjective information than when they are evaluating REIT securities with stable existing operations and few growth options.

There is overwhelming evidence in the literature that abnormal stock (non-REIT) returns are associated with day of the week, turn of the month, turn of the year as well as with seasons of the year and holidays. These returns are not attributable to an inappropriate adjustment for risk, nor are they unique to one historical period.

Akbulut, Chan, and Letdin point out that calendar effects for REITs are not universal across countries. The study uses post 1990 returns on REITs from twenty-two countries around the world to test whether REIT securities behave like stocks in the general market with respect to the manifestation of calendar

anomalies. These countries span North America, Australia, Asia, Europe, and Africa.

When Akbulut, Chan, and Letdin examine the turn of the month anomaly, they get striking results. They find a significant difference (more positive) in the turn-of-the-month effect between REITs and their stock market counterparts for seven countries, the U.S., Mexico, Japan, Singapore, Malaysia, U.K. and France. Akbulut, Chan, and Letdin also find that the turn-of-month effect is significantly stronger (more positive) for the FTSE EPRA/NAREIT global real estate index than in the MSCI world index which captures large and mid-cap representation across twenty-three developed market countries.

With respect to the other calendar anomalies, the evidence is mixed: Australia, U.K., and France are the only REIT markets exhibiting significantly lower (more negative) Monday returns than their stock market counterparts; seasons of the year (higher returns from November to April than from May to October) effects are detected in thirteen REIT markets, of which six markets are in Asia, and holiday effects (significantly higher returns on pre-holiday trading days) are observed in six countries (Mexico, Australia, Japan, Singapore, Malaysia, and the U.K.). These results raise some important questions about whether REITs are stocks or real estate and invite further research into the important question of what drives REIT stock prices.

In the third article of this volume, Weida Kuang and Peng Liu examine the relatively rapid increased in house prices and the rate of consumer non-housing inflation in China over the period from 1996 to 2010. Kuang and Liu consider a consumer who is planning to buy a home in which he or she will live for T periods. There are two goods, housing and other consumption. Consumers maximize lifetime utility subject to a lifetime budget constraint. The solution to this maximization problem yields demands for housing and other consumption, which are functions of the temporal relative prices of housing and of other consumption in that period.

Kuang and Liu introduce a flow-supply equation to explain the number of houses built. The underlying thesis of the flow-supply equation is that, in general, builders compare house prices with construction costs to determine the volume of residential construction that can be profitably undertaken (relative to the volume of profitable commercial real estate construction). The volume of new residential construction actually undertaken also depends upon

the availability and the cost of mortgage credit. Cost of construction depends upon the average hourly earnings of labor in the construction industry, the cost of capital, and land costs.

Kuang and Liu assume monetary policy is designed to stimulate economic growth and help control annual house price inflation. When interest rates are low, buying a newly constructed home becomes more affordable for home buyers and increases the demand for homes. If the supply of new homes remains relatively constant and the demand increases, then the prices of homes will increase. The correlation between inflation and house prices, then, works through commercial estate prices. In cities where land availability is limited, there is a crowding out effect where commercial real estate prices are positively correlated with investment in housing. As commercial real estate prices increase, there is an increase in consumer prices. Hence, Kuang and Liu conclude that there is a strictly positive correlation between inflation and house prices.

Kuang and Liu analyze the relation between house prices and inflation from 1996 to 2010 in a cross section of thirty-five cities in China. The findings lead the authors to conclude that the relation between house prices and inflation is asymmetric; the impact of inflation on housing price is larger than the impact of housing prices on inflation. With the rise in house prices being more than that of inflation, housing acts as a hedge inflation. This finding explains a lot of the speculative fervor in housing markets in China. Kuang and Liu also find that house prices in China are driven by higher household incomes. This result is comforting to the thesis that house prices are demand-driven and the higher the demand, the higher the price.

In the fourth and final article, Charlie Wurtzbach and I study the relative performance of private equity real estate joint ventures using new data that connect investment style, ownership structures, and quarterly cash flows for a large sample of sold properties from 1978-2009. Real estate joint ventures are investment vehicles of vast importance to real estate investors. Real estate joint ventures are formed by two or more entities for the purpose of investing or operating real estate assets. They are often used to invest in acquire large projects on the theory that market inefficiencies in real estate markets increase with deal size, and that these inefficiencies benefit buyers more than sellers. Another reason for investing in large projects is the belief that there are large economies of scale that would give a large joint venture an overwhelming advantage over smaller, non-joint venture investors.

Offsetting these benefits, however, is the existence of moral hazard problems. Moral hazard can cause real estate joint venture partners to take on excessively risky projects as a way to maximize the call option value embedded in their equity holding. Joint venture partners also have an incentive to take on excessively risky assets so as to maximize performance fees. Performance fees are typically calculated as a fraction, e.g., 20%, of the return in excess of a benchmark or hurdle rate; although performance fees can range up to 50% of the return in excess of a benchmark or hurdle rate. These fees can motivate joint venture partners to take on risk to increase the return on the funds invested.

The study compares the return performance of real estate joint venture projects with the return performance of otherwise comparable whole assets using quantile regressions. A major benefit of quantile regression is that it allows a useful means of testing whether joint venture projects are more concentrated in the tails of the return distribution – particularly in the left (low end) tail – than are whole assets.

The study finds two major results. Controlling for characteristics of the investment like property yield, loan-to-value ratio, holding period, property type, and time of acquisition, the results provide evidence of poor performance by real estate joint ventures versus whole assets, both at the bottom of the return distribution as well as at the top of the distribution. In addition, the study rejects the null hypothesis that real estate joint ventures experience abnormal returns, which in effect supposes joint venture partners are motivated by moral hazard considerations when selecting their investments. No doubt it would be interesting to ask whether the present findings are applicable to joint venture investments outside the U.S. that are in search of high yield.