Introduction to the Special Issue

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The annual MNM conference, an ongoing joint initiative of the Massachusetts Institute of Technology, the National University of Singapore, and Maastricht University, was held in Singapore in 2009, and at MIT near Boston in 2010. The 2009–2010 MIT-NUS-Maastricht issue of the *Journal of Real Estate Finance and Economics* contains selected papers of both conferences.

As always, the papers cover a wide choice of real estate topics, mostly related to commercial real estate. Of the 10 papers in this issue, the first five concern the commercial real estate markets. The next paper studies the financing of REITs, and the last four papers deal with mortgages and mortgage backed securities, all focusing on mortgage default and the foreclosure process.

Serguei Chervachidze and William Wheaton present us with a paper that provides an interesting answer to the question in its title: “What determined the Great Cap Rate Compression of 2000–2007, and the dramatic reversal during the 2008–2009 Financial Crisis?” Cap rates are essentially, of course, measures of the asset prices of commercial investment properties (normalized by the initial income, and inverted to be expressed as an initial income return). Cap rates are therefore among the most studied of real estate phenomena. But the Chervachidze-Wheaton model seems to be particularly effective at explaining both cross-sectional and longitudinal variations in cap rates. The dataset used to test the model is particularly broad and deep (almost 30 years and 30 MSAs), and the longitudinal explanatory power is obtained largely by innovatively introducing two macro-economic regressors: the general corporate/treasury bond risk premium, and the amount of debt relative to GDP. These variables, which reflect the general “bullishness” or “bearishness” (the dominance of “greed” or “fear”) in the overall economy and the

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capital markets, had an intriguingly large role in the general evolution of pricing in investment real estate assets, at least during the boom and bust of the 2000s. Of course, the question is then begged (for subsequent research): what drives the general rise and fall of leverage and the corporate/treasury risk premium in the capital markets?

Maria Ibanez and Anthony Pennington-Cross in their paper “Commercial Property Rent Dynamics in U.S. Metropolitan Areas: An Examination of Office, Industrial, Flex and Retail Space” examine the rate of adjustment in rental rates to equilibrium after a supply or demand shock from 1990 to 2009. While prior literature has been limited to office and retail properties in limited cities in US and Europe, this paper covers four property types and 34 metropolitan areas. The Hendershott *et. al* error-correction model is used to capture short term dynamics and long term trends. The authors find many similarities in how different property types respond to economic activity and supply changes. They also document substantial heterogeneity in long run and short run rent dynamics.

Dean Gatzlaff and Cynthia Holmes’ paper is entitled: “Estimating Transaction-Based Price Indices of Local Commercial Real Estate Markets Using Public Assessment Data”, and it provides an interesting contribution to the rapidly advancing field of commercial property transactions-based price indices. Gatzlaff and Holmes show that it is possible to produce reasonably well behaved repeat-sales indices of commercial properties even with relatively small sample sizes, such that indices of individual property types within the State of Florida can be produced. Gatzlaff and Holmes’ index is based on a public database compiled by the Florida Department of Revenue, and they increase the effectiveness of the transaction price data by also using property assessed values (made for property taxation purposes). Gatzlaff and Holmes also examine the question of systematic differences in pricing history between larger ($> \$2.5$ million) properties that may typify the “institutional” investment arena versus smaller ($< \$2.5$ million) properties that are traded among smaller local or private investors. Interestingly, they do not find significant differences in the pricing histories of these two groups of properties, at least at the aggregate level within Florida.

“Commercial Real Estate, Information Production and Market Activity” by David Downs and Nuray Guner examines the role of information production by appraisals and transactions in commercial real estate markets. In particular, the authors study the extent to which appraisal-based information production complements or substitutes for transaction-based information production. The data comprises over 100,000 transactions from 2001 through 2009 in the US. Using proxies for appraisal-based and transaction-based information production, the study finds evidence of a negative relation between transactions and appraisers across markets, supporting the substitution hypothesis, and that the substitution effect is more pronounced in transparent markets.

Colin Lizieri and Gianluca Marcato’s paper entitled: “Pricing Inefficiencies in the Private Real Estate Market Using Total Return Swaps” addresses a new and potentially important phenomenon in real estate investment, the trading of price index derivatives. Such forward or futures contracts could revolutionize the industry, allowing synthetic investment and hedging that could promote more efficient investment and risk management. A market for IPD price index swaps developed and grew rapidly in the UK starting in 2005. While this market has suffered setbacks since the financial crisis, it stimulated some interesting research in both the academic

and industry domains, and the potential remains for such synthetic investment products to arise again either in the UK or elsewhere. Lizieri's and Marcato's paper extends the basic Geltner-Fisher model for the pricing of a swap contract on an index that possibly smoothes and lags an underlying cash market (which may itself have pricing inertia) and where the index itself cannot be directly traded (apart from the derivative), hence requiring equilibrium price modeling of the derivative rather than traditional arbitrage pricing. The authors' model includes and focuses on the effects of transactions costs, execution time, and cash flow timing. Their simulation analyses suggest that actual pricing in the UK swaps market in the years just before and during the financial crisis displayed evidence of some inefficiencies, probably reflecting illiquidity and learning effects in a new market, and/or strong market "sentiment" effects on the prices of the derivatives.

Woei-Chyuan Wong, Seow-Eng Ong and Joseph Ooi look at initial public offerings in the Asian REIT market. More specifically, in their paper entitled "Sponsor Backing in Asian REIT IPOs", they investigate whether underpricing in these IPOs is related to the fraction of shares held by the IPO's sponsor, i.e. the pre IPO shareholder(s), usually insiders of the REIT. Ongoing commitment of these sponsors serves as a strong market signal of the quality of the share offering, and may therefore alleviate investors' concerns relating to agency issues. The fact that REITs in the Asian markets are externally managed likely aggravates these agency conflicts, and may make sponsor commitment even more important in Asia than in the rest of the world. The approach taken by the authors is based on the notion that the sponsor jointly decides on the degree of underpricing and the proportion of shares to retain. They find a significantly positive two-way association between underpricing and share retention, which is consistent with the signaling hypothesis.

Peng Liu and Dan Quan look at the institutional structure surrounding commercial mortgage backed securities, and its effect on foreclosure risk. Their paper does exactly what is suggested by the title "Foreclosure of Securitized Commercial Mortgages – A Model of the Special Servicer". The foreclosure process of commercial mortgage backed securities is managed by an entity called the special servicer, often a holder of first-loss bonds. This servicer has considerable leeway in the final foreclosure decision, and his interests may conflict with those of other bondholders. This paper is the first to build a theoretical model of the special servicer, taking into account his different income streams, and it sheds light on his influence on the actual foreclosure decision. The authors use their model for a number of simulations. Based on reasonable parameters, they show that the special servicer may well extend the life of the loan beyond the point that is optimal for the other – senior – bond holders. The authors conclude their study with a few specific recommendations to change the design of the service contracts of commercial mortgage backed securities aimed at aligning the interests of the special servicer with those of the other bond holders.

The paper by Xudong An, Vincent W. Yao, Yongheng Deng and Eric Rosenblatt, entitled: "Model Stability and the Subprime Mortgage Crisis" explores the question of how exactly did it happen, technically, that the actual performance of subprime home mortgages was so far below the presumably rational expectations and forecasts made at the time the loans and securities based on them were being issued. The authorship team examines types of econometric models of mortgage default that were widely used in both academia and industry before the crisis. They find that the

parameters of such models are highly unstable. They also find that the predicted default rates are very sensitive to the input historical data on which the models are calibrated. The historical experience in the sub-prime lending market was short, and changing prior to the financial crisis. Both the model parameter instability and the input historical data shift resulted in drastic under-prediction of default rates. The models, meant to be rational and technical tools to improve decision-making, were in fact misleading and perhaps abetted the behavioral forces in the marketplace prior to the financial crisis, suggest the authors in this very topical paper.

The paper by Marshall Gangel, Michael Seiler, and Andrew Collins is entitled: “Exploring the Foreclosure Contagion Effect Using Agent-Based Modeling”. This paper is interesting both for the current importance of its topic, as well as for the type of methodology which it employs. To our knowledge this is the first paper to introduce agent based modeling (ABM) to the real estate literature. ABM uses relatively large computing capacity to simulate the behaviors of multitudes of individual agents over time. It has become a widely used and accepted methodology to model social and biological phenomena such as the propagation of contagious diseases. The authors’ insight is that home foreclosures may exhibit some of these same types of features, and therefore that ABM may provide interesting insights. Indeed, the word “contagion” is often applied to the effect of large numbers of foreclosures, as nearby homes’ values are reduced by a sufficient number of foreclosures in the neighborhood. But previous studies have only applied traditional econometric models to study the phenomenon empirically. The authors’ ABM builds upon the existing empirical literature to calibrate the “agents” (homes) behavior, and can then be used to simulate scenarios beyond what the empirical data provide, and to explore the nature of “emergent” behaviors, characteristics of the market as a whole resulting from interaction among individual behaviors. An intriguing finding of this paper is that the length of time a property remains in foreclosure without resolution can be crucial to the emergent result in the marketplace. The danger of a market collapse can greatly increase if the foreclosure process is very lengthy, something which should be amenable to policy interventions.

The last paper in this issue is entitled “Residential Mortgage Default: The Roles of House Price Volatility, Euphoria and the Borrower’s Put Option”. This study, written by Wayne Archer and Brent Smith, examines the effect of euphoria on mortgage default. Euphoria or investor sentiment would lead to anticipated increases in house prices and a perceived reduction in risk. The authors use a number of proxies for euphoria – causal proxies measured by pre-origination rate of house price appreciation over different periods, and effect proxies measured by patterns in mortgage lending that arise from euphoria such as debt-to-income ratio, high-risk loans, loans on risky properties, etc. Using data from Florida, the paper finds evidence that pre-origination price appreciation and the environment for euphoria are significant determinants of default, controlling for borrower and put option factors.

Altogether these 10 papers are a rich trove of analysis and discovery, spanning the work of scholars from three continents. We hope you enjoy the papers and find them useful.

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