Jiyoung Chae

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EDUCATION	**University of Illinois at Urbana-Champaign (UIUC)**, IL

- Ph.D. in Economics .... Expected May 2021
- M.S. in Policy Economics (MSPE) 2014

Konkuk University, Seoul, South Korea

- B.A. in Economics 2006
- Study Abroad at UIUC .... 2005 – 2006

FIELDS Applied Econometrics, Spatial Econometrics, Urban Economics, Real Estate Economics

RESEARCH

WORKING PAPERS

[1] A Flexible Model for Spatial Volatility with an Application to the Chicago Metropolitan Housing Market (**Job Market Paper**)
Revise & Resubmit, Spatial Economic Analysis

[2] Spatial Market Inefficiency in Housing Market: A Spatial Quantile Regression Approach (with Anil K. Bera)
Revise & Resubmit, Journal of Real Estate Finance and Economics

[3] Bayesian Inference in Spatial Stochastic Volatility Models with An Application to House Price Returns in Chicago (with Süleyman Taşpınar, Osman Doğan, and Anil K. Bera)
Revise & Resubmit, Oxford Bulletin of Economics and Statistics

[4] The House Price-Supply Curve: A Spatial Panel Approach

WORK IN PROGRESS

[1] Is this time really different? Impacts of COVID-19 on state and local economies and housing markets (with Ivan Andres Flores Caceres, Youngwook Jung, and Geoffrey J.D. Hewings)

RESEARCH EXPERIENCE

Regional Economics Applications Laboratory (REAL), UIUC

Research Assistant to Geoffrey J.D. Hewings .... Spring 2017 – Present

- Analyze housing market conditions for Illinois metropolitan areas; forecast housing prices and sales using time series models; prepare monthly, quarterly and annual reports for the Illinois Association of Realtors.
- Evaluate how the housing market has changed over the last 10 years from 2008 to 2018 in terms of sales, median prices, inventory and days on market.
- Conduct original research on the spatial spillover effects in the Chicago housing market.

Department of Economics, UIUC

Research Assistant to Anil K. Bera .... Fall 2013 – Spring 2014

TEACHING EXPERIENCE

Department of Economics, UIUC

Teaching Assistant, Microeconomic Principles (Undergraduate) .... Fall 2015 – Fall 2016

CONFERENCE PRESENTATIONS

Spatial Econometrics Association (SEA 2019, Pittsburgh)	Nov 2019
Midwest Econometrics Group (MEG 2019, Ohio State University)	Oct 2019
Mid-Continent Regional Science Association (MCRSA 2019, Madison)	Jun 2019
Applied Economics, Regional and Urban Studies (AERUS 2019, UIUC)	Apr 2019

OTHER CONFERENCE ACTIVITIES	Discussant, Spatial Econometrics Association (SEA 2019, Pittsburgh)	Nov 2019
	Participant, Midwest Econometrics Group (MEG 2019) Mentoring Workshop	Oct 2019
	Discussant, Mid-Continent Regional Science Association (MCRSA 2019, Madison)	Jun 2019

AWARDS & SCHOLARSHIPS	Travel Grant, Department of Economics, UIUC	2019
	Travel Grant, Midwest Econometrics Group (MEG 2019) Mentoring Workshop	2019
	Travel Grant, North Central Regional Center for Rural Development	2019
	Summer Research Fellowship, Department of Economics, UIUC	2015, 2016
	Econometric Game in Amsterdam, Department of Economics, UIUC	2016
	Graduate Fellowship, Department of Economics, UIUC	2014 – 2015
	Study Abroad Scholarship (at UIUC), Konkuk University	2005 – 2006
	Academic Excellence Scholarship, Konkuk University	2005 – 2006

PROFESSIONAL EXPERIENCE

The Korea Scoring Company, Seoul, South Korea

Senior Consultant   Apr 2010 – Jul 2012

- Developed credit scoring models that help clients to classify consumer loan applications and minimize credit default risk; performed analyses of financial, demographic, behavioral, and economic data as related to credit risk.

The Nielsen Company, Seoul, South Korea

Senior Analyst   Oct 2006 – Mar 2010

- Conducted statistical and econometric models to quantify and evaluate marketing activities and presented business insights to clients; trained new analysts on a monthly basis regarding modeling, programming, and presenting.

PROFESSIONAL SERVICE

Referee Service: *The Annals of Regional Science*

SKILLS

R, Stata, ArcGIS, GeoDa, MATLAB, Eviews, SAS, LaTeX, Excel Visual Basic, Microsoft Excel, Microsoft Word, Microsoft PowerPoint.

PERSONAL INFORMATION

Immigration Status: U.S. Permanent Resident (Green Card holder)

Citizenship: South Korea

Language: English (fluent), Korean (native)

REFERENCES

Anil K. Bera (Chair)	**Daniel McMillen**
Department of Economics	Department of Finance
University of Illinois at Urbana-Champaign	University of Illinois at Chicago
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Geoffrey J. D. Hewings	**JiHyung Lee**
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ABSTRACTS

A Flexible Model for Spatial Volatility with an Application to the Chicago Metropolitan Housing Market (Job Market Paper)
Revise & Resubmit, Spatial Economic Analysis

I propose a flexible spatial volatility model for squared returns using a Box-Cox transformation for simultaneously testing space-varying volatility and its functional form. The maximum likelihood (ML) method is used to estimate this model and Monte Carlo simulations are conducted to investigate the finite sample performance of the ML estimator. Using housing price data from Chicago, I empirically demonstrate substantial evidence of spatial dependence in volatility and explicitly address the validity of a log-linear specification, after which I propose a new practical indicator, called neighborhood elasticity, which determines how volatility in one neighborhood is linked to that in surrounding neighborhoods. The average annual elasticity is found to be 0.4 across different spatial weight matrices, which can be used as a benchmark to compare different housing markets and a tool for policy makers to assist them to avoid volatility transmission and the risk of contagion in the housing market. Finally, to identify whether the neighborhood elasticity remains constant over time, adjusted quasi score (AQS) tests for testing the presence of temporal heterogeneity in spatial parameters in spatial panel data models are considered. The test results reveal that the neighborhood elasticity becomes homogeneous after controlling for both spatial and temporal heterogeneity in the intercepts of the model.

Spatial Market Inefficiency in Housing Market: A Spatial Quantile Regression Approach (with Anil K. Bera)
Revise & Resubmit, Journal of Real Estate Finance and Economics

This paper explores the implication of spatial volatility in the context of market efficiency in finance literature. More specifically, this study investigates whether the housing market is spatially efficient by examining linear and nonlinear spatial dependence patterns in housing returns. The spatial ARCH-type model and its extension to the quantile model that allows for possible heterogeneous effects of spatial dependence are applied to house price data in the broader Chicago area. Our study reveals a number of interesting new insights into the spatial market efficiency of the housing market. Specifically we find: i) while housing returns are not correlated over space, squared returns, which represent volatility, exhibit significant spatial dependence, i.e., spatial market inefficiency and, therefore, the neighborhood housing returns contain information for spatial prediction, and ii) the degree of inefficiency varies over quantiles; the spatial dependence is conspicuously distinct from the lower quantiles to the higher quantiles with a gradual increasing trend.

Bayesian Inference in Spatial Stochastic Volatility Models with An Application to House Price Returns in Chicago (with Süleyman Taşpınar, Osman Doğan, and Anil K. Bera)
Revise & Resubmit, Oxford Bulletin of Economics and Statistics

In this study, we consider a spatial stochastic volatility model in which the latent log-volatility term is specified through a spatial autoregressive process. Though there is no spatial correlation in the outcome equation (the mean equation), the spatial autoregressive (SAR) process defined for the log-volatility term introduces spatial dependence in the outcome equation. To introduce the Bayesian Markov chain Monte Carlo (MCMC) estimation approach, we transform the model such that the outcome equation is in the form of log-squared terms. We approximate the distribution of the log-squared error term in the outcome equation with a finite mixture of normal distributions such that the transformed model turns into a linear Gaussian state-space model, where the log-volatility equation constitutes the state equation. We develop an MCMC algorithm in which the latent log-volatility term is considered as an additional parameter to facilitate the posterior simulation. Our simulation results indicate that the Bayesian estimator has satisfactory finite sample properties. We investigate the empirical validity of our specification by using the price returns of residential properties in the broader Chicago area for the years 2014 and 2015.

The House Price-Supply Curve: A Spatial Panel Approach

This paper investigates spillover effects of house supply on nearby house prices across the housing cycle. Over the past five years, housing inventory shortages have been a primary factor in rising house prices. At the same time, demand for housing has risen aggressively as the job market has improved and millennials are aging into homeownership. The combination of limited homes on the market with high buyer demand has pushed house prices above what they were at the peak of the housing boom in early 2006. The underlying reasoning behind this idea - low supply should lead to price increases - is clear and some influential research has strongly suggested the inverse relationship by applying matching models to the housing market. However, there is a surprising lack of empirical work done on this inverse relationship, in particular, at the level of the local housing market. Furthermore, no empirical research has addressed the role of spatial spillovers between different regions in the relationship. Using a spatial panel model for 77 community areas within the Chicago area between 2009 and 2018, the study shows substantial asymmetric spatial effects; for instance, how the nearby house supply can serve as a key determinant on house prices in a boom period. However, these effects may not hold during market downturn.