2017 AREUEA INTERNATIONAL CONFERENCE

July 3-5, 2017

AMSTERDAM, THE NETHERLANDS

Book of Abstracts

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Parallel sessions

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14:30 – 16:00	B1	B2	B3	B4	B5	B6
Parallel sessions B	**Housing & Taxes**	**Housing & Life Cycle**	**Homeownership & Tenure Choice**	**House Price Fundamentals**	**Housing**	**Commercial Real Estate**
	Room C2.05	Room C2.06	Room C0.01	Room C0.02	Room C3.05	Room C3.02

Wednesday July 5th, 2017						
9:00 – 10:30	C1	C2	C3	C4	C5	C6
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Parallel sessions E	**Housing Development: 2**	**House Prices & Externalities**	**House Price Dynamics: 2**	**Homeownership in Germany**	**Property Price Indices**	**Spatial, Transport, Sorting**
	Room C2.05	Room C2.06	Room C0.01	Room C3.05	Room C0.02	Room C3.06

Full Program

Tuesday July 4th, 2017

Welcome and Keynote speech
9:00 - 10:30 Kriterion Film House

Keynote speaker: Paul Hilbers, De Nederlandsche Bank
Real estate and financial stability

Coffee break
10:30 - 11:00 C Building 0 floor hall

Session A 11:00 - 13:00 C Building

Session A1 Housing and the Macro Economy: 1
Chair: Tsur Somerville Room C0.01

China and International Housing Price Growth
by Song Shi, Hamish Anderson, Yuk Ying Chang
Presenter: Song Shi
Discussant: Taojun Xie

Trying to Slowdown a Freight Train: An Evaluation of Chinese Macro-Prudential Policies to Slow the Housing Market by Tsur Somerville, Long Wang, Yang Yang
Presenter: Tsur Somerville
Discussant: Song Shi

How does the housing market respond to macroprudential policies? The case of Singapore
by Rainer Schulz, Shih-Kang Chao, Wolfgang Karl Hardle, Taojun Xie
Presenter: Rainer Schulz
Discussant: Tsur Somerville

Macroprudential Policies in Global Cities amid Rising Chinese Outbound Direct Investments
by Taojun Xie, Hwee Kwan Chow, Guay C. Lim
Presenter: Taojun Xie
Discussant: Rainer Schulz

Session A2 House Price Dynamics: 1
Chair: Damian Damianov Room C2.05

Temporal Dimension in Real Estate Modelling: Determining the Best Fit when Decomposing the Spatial Connections by Jean Dubé, Di Legros, Sotirios Thanos
Presenter: Jean Dubé
Discussant: Damian Damianov

Pair-wise Convergence of Intra-city House Prices in Beijing
by Tommaso Gabrieli, Theodore Panagiotidis, Yishuang Xu
Presenter: Tommaso Gabrieli
Discussant: Jean Dubé

Heterogeneity in house price dynamics by Gabriele Galati, Rob Alessie, Federica Teppa
Presenter: Federica Teppa
Discussant: Tommaso Gabrieli

Getting on and moving up the property ladder: real hedging in the U.S. housing market before and after the crisis by Diego Escobari, Damian Damianov
Presenter: Damian Damianov
Discussant: Federica Teppa

Session A3 Housing Development: 1 **Chair: Paloma Taltavull Room C2.06**
The role of sentiment in optimal development of residential projects by Ziyou Wang, Eddie C.M. Hui *Presenter: Ziyou Wang* *Discussant: Jarjisu Sa-Aadu*
Does State Regulation Matter? The Case of Student Housing Development at State Land Grant Universities by Bruce Cole *Presenter: Bruce Cole* *Discussant: Ziyou Wang*
The uninteded consequences of public-sector-led urban renewal projects by K.W. Chau, Jiancong Liang, Ervi Liusman *Presenter: Ervi Liusman* *Discussant: Bruce Cole*
Foreign Direct Investment and the Level of Residential Investment by James Shilling, Yao Chiang, Jarjisu Sa-Aadu *Presenter: Jarjisu Sa-Aadu* *Discussant: Ervi Liusman*
Session A4 Mortgage: 1 **Chair: Peter Wierts Room C3.05**
Mortgage Contract Choice before the Great Depression by Jonathan Rose *Presenter: Jonathan Rose,* *Discussant: Mihnea Constantinescu*
The Mortgage Credit Cycle by Peter Wierts, Dirk Schoenmaker *Presenter: Peter Wierts* *Discussant: Jonathan Rose*
Credit Rationing and the Demand for Mortgage Debt in the UK by Alla Koblyakova *Presenter: Alla Koblyakova* *Discussant: Peter Wierts*
T**he Knotty Interplay Between Credit and Housing** by Mihnea Constantinescu, Povilas Lastauskas *Presenter: Mihnea Constantinescu* *Discussant: Alla Koblyakova*
Session A5 REITs **Chair: David Ling Room C0.02**
Idiosyncratic risk, Insider ownership and Investment: Evidence from REITs by Ranoua Bouchouicha, Heidi Falkenbach, Simon Stevenson *Presenter: Ranoua Bouchouicha* *Discussant: David Ling*
How do a CEO's political leanings affect a REIT business decisions? by Xiaoying Deng, Paul M. Anglin, Yanmin Gao, Hua Sun *Presenter: Xiaoying Deng* *Discussant: Ranoua Bouchouicha*
The Hybrid Nature of Real Estate Trusts by Yildiray Yildirim, Thomas Emmerling, Thomas Emmerling *Presenter: Yildiray Yildirim* *iscussant: Xiaoying Deng*
Asset Location, Timing Ability, and the Cross-Section of Commercial Real Estate Returns by David Ling, Andy Naranjo, Benjamin Scheick *Presenter: David Ling* *Discussant: Yildiray Yildirim*

Session A6 Land & Zoning **Chair: Peter van Gool Room C3.02**	
The impact of airport noise, land use restrictions and house prices: Evidence from selected regional airports in Poland by Michał Głuszak, Jacek Batóg, Iwona Foryś, Radosław Gaca *Presenter: Michał Głuszak* *Discussant: Andrew Mueller*	
A New Estimate of Elasticity of Substitution between Structure and Land by Tian Luan *Presenter: Tian Luan* *Discussant: Michał Głuszak*	
The Privilege of Power and Wealth: Evidence from China's Urban Land Market by Yang Yang, Wang Long *Presenter: Yang Yang* *Discussant: Tian Luan*	
Zoning and transportation choice: Spatial models of land use and travel behavior by Andrew Mueller, Stephan Weiler *Presenter: Andrew Mueller* *Discussant: Yang Yang*	
Lunch 13:00 - 14:30 CREA Café	
Session B 14:30 - 16:30, C Building	
Session B1 Housing & Taxes **Chair: Oliver Lerbs Room C2.05**	
Price Effects of Real Estate Transaction Taxes: Evidence from Germany by Björn Seipelt, Nico Pestel *Presenter: Björn Seipelt* *Discussant: Oliver Lerbs*	
Heterogeneous effects of declining property transfer taxes on housing market segments in the Netherlands by Mark van Duijn *Presenter: Mark van Duijn* *Discussant: Björn Seipelt*	
Behavioural response to time notches in transaction tax: Evidence from stamp duty in Hong Kong and Singapore by Hiu Fung Tam *Presenter: Hiu Fung Tam* *Discussant: Mark van Duijn*	
Do Local Governments Tax Homeowner Communities Differently? by Roland Fuess, Oliver Lerbs *Presenter: Oliver Lerbs* *Discussant: Hiu Fung Tam*	

Session B2 Housing & Life Cycle **Chair: Amanda Ross Room C2.06**	
Tax-exempted intergenerational transfers: do they reduce household indebtedness? by Yue Li, Mauro Mastrogiacomo *Presenter: Yue Li* *Discussant: Donald Haurin*	
Home Equity and the Timing of Claiming Social Security Retirement Income by Amanda Ross, Naqun Huang, Jing Li *Presenter: Amanda Ross* *Discussant: Yue Li*	
Does Adversity Affect Long-Term Consumption and Financial Behaviour? Evidence from China's Rustification Programme by Yi Fan *Presenter: Yi Fan* *Discussant: Amanda Ross*	
Unlocking Home Equity: Credit Constraints, House Prices and the Federally Insured Reverse Mortgage by Donald Haurin, Samuel Dodini, Stephanie Moulton, Maximilian Schmeiser *Presenter: Donald Haurin* *Discussant: Yi Fan*	
Session B3 Homeownership & Tenure Choice Chair: Gary Painter Room C0.01	
An econometric investigation of home owners and renters in urban India by Debarpita Roy *Presenter: Debarpita Roy,* *Discussant: Younghoon Ro*	
Homeownership: Boon and Bane by Carolin Schmidt *Presenter: Carolin Schmidt* *Discussant: Debarpita Roy*	
Diverted Homeowners and Rental Affordability by Gary Painter, Hyojung Lee, Dowell Myers, JungHo Park *Presenter: Gary Painter* *Discussant: Carolin Schmidt*	
Korean Antichresis and Housing Tenure Changes by Younghoon Ro *Presenter: Younghoon Ro* *Discussant: Gary Painter*	
Session B4 House Price Fundamentals **Chair: Steven Bourassa Room C0.02**	
Bubble Test in London Housing Market by Panagiotis Petris, Panagiotis Alexakis, Georgios Dotsis *Presenter: Panagiotis Petris* *Discussant: Paloma Taltavull*	
On the Adverse Consequences of Constraining Second Home Investments by Christian Hilber, Olivier Schoeni *Presenter: Christian Hilber* *Discussant: Steven Bourassa*	
Revisiting the House Price-Income Relationship by Steven Bourassa, Martin Hoesli, Elias Oikarinen *Presenter: Steven Bourassa* *Discussant: Christian Hilber*	
Explaining House Price Expectations: New International Evidence by Laura Izquierdo Rios *Presenter: Laura Izquierdo Rios*	

Discussant: Panagiotis Petris

Session B5 Housing
Chair: Arno Van Der Vlist Room C3.05

Nonmarket allocation of public housing: empirical evidence from first-come-first-serve and lottery allocation in Amsterdam
by Arno Van Der Vlist, Jos van Ommeren
Presenter: Arno Van Der Vlist
Discussant: Andrew McErlane

The real estate disciplines' introductory principles textbooks resist Schumpeter and change
by Stephen Roulac
Presenter: Stephen Roulac
Discussant: Arno Van Der Vlist

A conceptualisation of UK public-private partnerships (PPP) social infrastructure provision
by Andrew McErlane, Martin Haran and Sharon McClements
Presenter: Andrew McErlane
Discussant: Stephen Roulac

Session B6 Commercial Real Estate
Chair: Marcel Theebe Room C3.02

A Predictive Model of Revenue per Available Room in the Eastern Mediterranean Using Bilateral Exchange Rates by Kerem Yavuz Arslanli, Christopher M. Hannum
Presenter: Kerem Yavuz Arslanli
Discussant: Masaki Mori

Does geographical diversification matter in Corporate Real Estate? Evidence from the US Retail sector
by Gianluca Mattarocci, Lucia Gibilaro
Presenter: Gianluca Mattarocci
Discussant: Kerem Yavuz Arslanli

Value Investment Strategies for Commercial Real Estate by David H. Downs, Eli Beracha, Greg MacKinnon
Presenter: David H. Downs
Discussant: Gianluca Mattarocci

Effect of REIT Ownership on Acquisition Premium and Property Performance
by Masaki Mori, Seow Eng Ong, Jianmei Wu, Fang Zhang
Presenter: Masaki Mori
Discussant: David H. Downs

Coffee break
16:30 - 17:00 C Building 0 floor hall

Canal Boat Tour from University to National Maritime Museum
17:00 - 18:45

Visit National Maritime Museum
18:45 - 19:30

Dinner at the National Maritime Museum
19:30 - 22:30

Wednesday July 5th, 2017

Session C 9:00 - 10:30 C Building

Session C1 Housing and the Macro Economy: 2 Chair: John Clapp Room C2.05

Macropudential Policy, Monetary Policy, and Financial Crisis
by Nan-Kuang Chen, Tzu-Yu Lin
Presenter: Nan-Kuang Chen
Discussant: Bertram Steininger

International Housing Prices: Measuring the Effects of Monetary Policy, Current Account Deficits, and Credit Standards
by Kenneth Roskelley, Randall Campbell
Presenter: Kenneth Roskelley
Discussant: Nan-Kuang Chen

Macroeconomic News and Real Estate Returns
by Bertram Steininger, Tim Kroencke, Felix Schindler
Presenter: Bertram Steininger
Discussant: Kenneth Roskelley

Session C2 Agency & Bargaining in Housing Markets
Chair: Peter van Gool Room C2.06

Disruptive Innovation and Real Estate Agency: The Disruptee Strikes Back
by Seow Eng Ong, Calvin Chua
Presenter: Seow Eng Ong
Discussant: Darren Hayunga

The role of word-of-mouth guidance and salience bias in property transactions: Evidence from the agent selection process by Davin Wang, Boon Ping Chua, Seow Eng Ong
Presenter: Davin Wang
Discussant: Seow Eng Ong

Can Real Estate Agents Provide Expertise to Clients?
by Darren Hayunga, Henry Munneke
Presenter: Darren Hayunga
Discussant: Davin Wang

Session C3 Ownership and lease
Chair: John Anderson Room C3.05

Individual Payoffs and the Effect of Homeownership on Social Capital Investment
by Kiat Ying Seah, Eric Fesselmeyer
Presenter: Kiat Ying Seah
Discussant: John Anderson

Commercial leases, terms and options in the light of game theory
by Charles-Olivier Amédée-Manesme, Francois des Rosiers, Philippe Grégoire,
Presenter: François des Rosiers
Discussant: Kiat Ying Seah

Real Estate Ownership and Life Satisfaction in Transition Countries
by John Anderson
Presenter: John Anderson
Discussant: François des Rosiers

Session C4 Green: 1 **Chair: Avis Devine**	**Room C0.01**
Price Discrimination in the Residential Housing Sector: Evidence from Green Buildings by Bertram Steininger, Carolin Pommeranz *Presenter: Carolin Pommeranz* *Discussant: Avis Devine*	
Split Incentives and Energy Efficiency: Evidence from the Dutch Housing Market by Rogier Holtermans, Erdal Aydin, Piet Eichholtz *Presenter: Rogier Holtermans* *Discussant: Carolin Pommeranz*	
Decomposing the Value Effects of Sustainable Investment: International Evidence by Avis Devine, Erkan Yonder *Presenter: Avis Devine* *Discussant: Piet Eichholtz*	
Session C5 Credit, Securities, and Bonds **Chair: Maarten Van Der Spek**	**Room C0.02**
Decisions on Bond Issuances by Banks by Stanimira Milcheva, Heidi Falkenbach, Holger Markmann *Presenter: Stanimira Milcheva,* *Discussant: Maarten Van Der Spek*	
An Examination of Low-Frequency Volatility of Real Estate Securities by Chyi Lin Lee, Simon Stevenson and Ming-Long Lee *Presenter: Chyi Lin Lee* *Discussant: Stanimira Milcheva*	
The Impact of Leverage on Real Estate Loan Spreads by Maarten Van Der Spek *Presenter: Maarten Van Der Spek* *Discussant: Chyi Lin Lee*	
Session C6 Mortgage:2 **Chair: Moussa Diop**	**Room C3.06**
Strategy for Lenders by Modelling Competitions: Mortgage Default vs Restructuring and Prepayment vs Defeasance by Lok Man Michelle Tong, Gianluca Marcato *Presenter: Lok Man Michelle Tong* *Discussant: Timothy Dombrowski*	
The Importance of Servicer-Originator Affiliation in Loan Renegotiation by James Conklin, Moussa Diop, Thao Le *Presenter: Moussa Diop* *Discussant: Lok Man Michelle Tong*	
Imputing Borrower Heterogeneity and Dynamics in Mortgage Default Models by Timothy Dombrowski, Kelley Pace, Junbo Wang *Presenter: Timothy Dombrowski* *Discussant: Moussa Diop*	
Coffee break **10:30 - 11:00 C Building 0 floor hall**	

Session D 11:00 - 12:30 C Building

Session D1 Housing & Crime
Chair: Daniel McMillen Room C0.01

The Artful Dodger: Is Sydney's Underbelly Pick Pocketing Home Owners?
by Anastasia Klimova, Timothy Balin, Adrian D. Lee
Presenter: Anastasia Klimova
Discussant: Daniel McMillen

The Academic Effects of Chronic Exposure to Neighborhood Violence by Amy Schwartz, Ingrid Elle, Johanna Lacoe, Agustina Laurito, Patrick Sharkey
Presenter: Amy Schwartz
Discussant: Anastasia Klimova

Do More Eyes on the Street Reduce Crime? Evidence from Chicago
by Daniel McMillen, Ignacio Sarmiento-Barbieri, Ruchi Singh
Presenter: Daniel McMillen
Discussant: Amy Schwartz

Session D2 Rental Housing Markets
Chair: Frans Schilder Room C2.05

Immigration and Rental Prices of Residential Housing: Evidence from the Fall of the Berlin Wall
by Kathleen Kuerschner
Presenter: Kathleen Kuerschner
Discussant: Zack Hawley

Rental market underdevelopment in Central Europe: Micro (Survey) and Macro (DSGE) perspective
by Margarita Rubio, Michal Rubaszek
Presenter: Michal Rubaszek
Discussant: Kathleen Kuerschner

The Value of Community: Impact of the Cares Program on Rental Apartments
by Zack Hawley, Andrew Hanson, Geoffrey Turnbull
Presenter: Zack Hawley
Discussant: Michal Rubaszek

Session D3 Office Markets
Chair: Martijn Dröes Room C2.06

Another Look at the Central London Office Market Risk Premium
by Benoit Lefebvre, Alain Coën, Arnaud Simon
Presenter: Benoit Lefebvre
Discussant: Ilir Nase

The Vertical City Revisited. Rent Premiums and Vertical Sorting in Amsterdam's Tall Office Towers
by Ilir Nase, Hilde Remøy, Nick van Assendelft
Presenter: Ilir Nase
Discussant: Benoit Lefebvre

Information Asymmetry, Lease Incentives, and the Role of Advisors in the Market for Commercial Real Estate
by Martijn Dröes
Presenter: Martijn Dröes
Discussant: Za Manaf

Session D4 Mortgage: 3
Chair: Gianluca Marcato Room C3.05

Mortgage Markets and Institutions
by Sariye Belgin Akcay
Presenter: Sariye Belgin Akcay
Discussant: Alla Koblyakova

Cross-Border Residential Lending: Theory and Evidence from the European Sovereign Debt Crisis
by Jaime Luque
Presenter: Jaime Luque
Discussant: Sariye Belgin Akcay

A supply side story of Regional Variations in Mortgage Pricing and Lending Conditions
by Alla Koblyakova, Gianluca Marcato
Presenter: Alla Koblyakova
Discussant: Jaime Luque

Session D5 Green: 2
Chair: Piet Eichholtz Room C3.06

Are Green Labels More Valuable in Emerging Real Estate Markets?
by Odilon Costa, Franz Fuerst, Spenser J. Robinson,
Wesley Mendes-da-Silva
Presenter: Odilon Costa
Discussant: Paloma Taltavull

The Impact of Academic Research: Energy Efficiency Information and Residential Property Valuation
by Piet Eichholtz, Rogier Holtermans, Juan Palacios Temprano
Presenter: Rogier Holtermans
Discussant: Odilon Costa

Green premium for Spanish housing market. A GLS evidence from climatic areas
by Paloma Taltavull, Juan Carlos Perez, Perez Raul, Mora Raul
Presenter: Paloma Taltavull
Discussant: Rogier Holtermans

Session D6 Listed and Nonlisted Real Estate
Chair: Marcel Theebe Room C0.02

The past is not a good predictor of the future, or is it? Another look into performance persistence among core open end European non-listed real estate funds
by Arvydas Jadevicius, Stephen Ryan, Matthias Thomas, Henri Vuong
Presenter: Arvydas Jadevicius
Discussant: Charles-Olivier Amédée-Manesme

U.S. Real Estate Risk Factors
by Jean-Christophe Delfim, Martin Hoesli
Presenter: Jean-Christophe Delfim
Discussant: Arvydas Jadevicius

On the effectiveness and usefulness of portfolio insurance strategies for REITs
by Charles-Olivier Amédée-Manesme, Philippe Bertrand, Jean-Luc Prigent
Presenter: Charles-Olivier Amédée-Manesme
Discussant: Jean-Christophe Delfim

Lunch 12:30 - 14:00 CREA Café

Session E 14:00 - 16:00 C Building	
Session E1 Housing Development: 2 **Chair: Moussa Diop Room C2.05**	
An Econometric Analysis of Housing Supply Dynamics in the United States, 1959-2015 by Anthony Orlando, Christian Redfearn *Presenter: Anthony Orlando* *Discussant: Siu Kei Wong*	
Mobility, investment and property values: it's all in the timing by Geert Goeyvaerts, Sven Damen *Presenter: Sven Damen* *Discussant: Anthony Orlando*	
Housing and Urban Development in (mostly Sub-Saharan) Africa: Lessons Learned, Lessons Not Learned by Moussa Diop, Stephen Malpezzi, Jarjisu Sa-Aadu *Presenter: Stephen Malpezzi* *Discussant: Sven Damen*	
Session E2 House Prices & Externalities **Chair: Peter van Gool Room C2.06**	
The External Cost of Prostitution by Erasmo Giambona, Rafael Ribas *Presenter: Rafael Ribas* *Discussant: Mike Langen*	
The effect of small earthquakes on housing prices in the north of the Netherlands: a spatio-temporal-similarity approach by Nicolas Duran, Paul Elhorst *Presenter: Nicolas Duran* *Discussant: Rafael Ribas*	
The Tale of Two Cities: The Effect of Urban Green Spaces on House Prices in Warsaw by Radoslaw Trojanek, Michał Głuszak, Justyna Tanaś *Presenter: Radoslaw Trojanek* *Discussant: Nicolas Duran*	
Getting Low from Getting High? The External Effects of Coffeeshops on House Prices by Mike Langen, Erdal Aydin, Piet Eichholtz, Nils Kok *Presenter: Mike Langen* *Discussant: Radoslaw Trojanek*	

Session E3 House Price Dynamics: 2 **Chair: Dorinth van Dijk Room C0.01**	
Effect of Subjective Expectations on House Price Dynamics and Housing Demand - Israeli Case by Larisa Fleishman,Alla Koblyakova, Orli Furman *Presenter: Larisa Fleishman* *Discussant: Paloma Taltavull*	
Creating constant quality liquidity indices in thin markets by Dorinth van Dijk *Presenter: Dorinth van Dijk* *Discussant: Larisa Fleishman*	
Agglomeration Effects and Liquidity Gradients in Local Rental Housing Markets by Daniel Ruf *Presenter: Daniel Ruf* *Discussant: Dorinth van Dijk*	
The Role of Liquidity in the Transmission of Volatility Across Housing Markets by Paloma Taltavull, Jens Lunde, Michael White, *Presenter: Paloma Taltavull* *Discussant: Daniel Ruf*	
Session E4 Homeownership in Germany **Chair: Michael Voigtländer Room C3.05**	
The impact of changing user cost on tenure choice – a case study for Germany by Michael Voigtländer *Presenter: Michael Voigtländer* *Discussant: Philipp Marek*	
Do homeowners save more? – Evidence from the Panel on Household Finances (PHF) by Tobias Schmidt, Julia Le Blanc *Presenter: Julia Le Blanc* *Discussant: Michael Voigtländer*	
Homeownership in Germany: it there an East-West divide? by Panagiota Tzamourani,Deniss Bezrukovs *Presenter: Panagiota Tzamourani* *Discussant: Julia Le Blanc*	
The development of home ownership rates in Germany across age groups by Philipp Marek *Presenter: Philipp Marek* *Discussant: Panagiota Tzamourani*	
Session E5 Property Price Indices **Chair: David Geltner Room C0.02**	
Riskiness of Real Estate Development: A Perspective from Urban Economics & Option Value Theory by David Geltner, Anil Kumar, Alex van de Minne *Presenter: David Geltner* *Discussant: Daniel Melser*	
Continuous House Price Tiers in Repeat Sales Estimation by Douglas McManus *Presenter: Douglas McManus* *Discussant: David Geltner*	
Real Estate Index Revisions in Thin Markets by Marc Francke, David Geltner, Alex van de Minne, Robert White *Presenter: Alex van de Minne* *Discussant: Douglas McManus*	
Florida's Boom and Bust: Sample Selection in Home Price Indexes by Daniel Melser *Presenter: Daniel Melser* *Discussant: Alex van de Minne*	

Session E6 Spatial, Transport, Sorting
Chair: Jan Rouwendal Room 3.06

Car travel demand: spillovers and asymmetric price effects in a spatial setting
by Sotirios Thanos, Maria Kamargianni, Andrea Schäfer
Presenter: Sotirios Thanos
Discussant: Jan Rouwendal

Neighborhood Segregation and Black Entrepreneurship by Eric Fesselmeyer, Kiat Ying Seah
Presenter: Eric Fesselmeyer
Discussant: Sotirios Thanos

Spillover Effects of the Infrastructure Spending in China by Jia-Huey Yeh
Presenter: Jia-Huey Yeh
Discussant: Eric Fesselmeyer

Gentrification in the Paris metropolitan area
by Jan Rouwendal, Nathalie Picard
Presenter: Jan Rouwendal
Discussant: Jia-Huey Yeh

Coffee break
16:00 - 16:30 C Building 0 floor hall

Keynote speech and Closing Ceremony
16:30 - 17:30 Room C

David Geltner (Massachusetts Institute of Technology)
Real Estate Price Dynamics and the Value of Flexibility

Canal Boat Trip from University to Levantkade
17:45 - 19:00

Short walk from Pier Levantkade to De Kompaszaal

Dinner at De Kompaszaal, Java Eiland
19:00 - 23:00

Session A

A1 - Housing and the Macro Economy: 1

Yuk Ying Chang, **Song Shi (University of Technology Sydney)**, Hamish Anderson
China and International Housing Price Growth

We document Chinese effects on international residential property price growth. We show the prices rise following falls in China's GDP or when China's savings rate increases. This is consistent with the notion of Chinese investing in overseas property markets when faced with less promising investment opportunities at home and when they have the means to invest offshore. The Chinese effects are stronger when risks are higher in China and for countries; where English is the primary spoken language, with better tertiary education quality, with lower correlations between local property market price growth and China's interest rate returns.

Tsur Somerville (University of British Columbia), Long Wang, Yang Yang
Trying to Slowdown a Freight Train: An Evaluation of Chinese Macro-Prudential Policies to Slow the Housing Market

This paper examines the effectiveness of Chinese government macroprudential policies in slowing their housing market. In late 2010 and early 2011 the Chinese government imposed a variety of restrictions on the number of houses individuals could buy, what sources of funds they could use for down-payments, and the minimum size of these down-payments. The timing of these policies varied by city. In addition, in certain local governments only implemented the policies in select districts, or exempted smaller units from the policies. We take advantage of the differences in the cross-sectional and temporal introduction of the restrictive policies to test for their effectiveness in both slowing house prices and reducing market activity, the two stated goals of the Chinese government. We use difference in difference type tests to identify the effectiveness of the policies: comparing aggregate housing market measures in a panel of cities, in group of cities with districts that imposed restrictions and some that did not, and then in a smaller group of cities between the performance of smaller units that were not affected by some of the policies applied to larger units. For two cities we test individual unit transaction data across urban districts with and without certain policies. Consistently we find the same results: little effects on prices or price appreciation, significant short-run declines in transactions that dissipate after six months. The policies were ineffective in slowing the housing market much beyond an initial short-run negative effect.

Taojun Xie, Shih-Kang Chao, Wolfgang Karl Hardle, **Rainer Schulz (University of Aberdeen)**
How does the housing market respond to macroprudential policies? The case of Singapore

House price growth and excessive lending was at the core of the financial crisis in 2007/08. Since then, many countries have supplemented their regulatory regimes with macroprudential policies to guard against systemic risk. Singapore is one of the first countries to apply measures to this effect to the housing market. Several papers provide evidence that such measures can counter overheating of house prices. However, such measures will also affect the real wealth of those owning houses. We assess this for Singapore by testing for stochastic dominance at different orders over all rounds of cooling measures. We find that the social welfare of those owning in the private housing sector is curtailed by the measures, whereas those owning in the public sector are less affected. This outcome fits well with Singapore's intention to ensure that its residents can participate in the country's economic growth by owning public housing. It also indicates that the Singaporian authorities target the measures successfully.

Hwee Kwan Chow, Guay C. Lim, **Taojun Xie (Singapore Management University)**
Macroprudential Policies in Global Cities amid Rising Chinese Outbound Direct Investments

The recent decade has seen a surge in outbound direct investment (ODI) from China into the real estate sector of many global cities. Such capital inflows can trigger expectation-driven boom-bust cycles in house prices that can have significant macroeconomic cost, as highlighted by the global financial crisis. It is thus unsurprising that policy makers in global cities respond to increasing demand from foreign real estate investors by imposing more stringent measures on them as compared to local buyers. A common approach is to employ macro-prudential policy measures such as lower loan-to-value ratios and higher stamp duties on foreign investors. It provides us with an opportunity to explore how macro-prudential policies should be implemented in global cities or small economies open to international capital flows. In this paper, we analyse the policy responses to increasing Chinese ODI in a two-step approach. We first establish the empirical association between Chinese ODI and the house prices in global cities. We then investigate the effects of alternative macro-prudential policies through the lens of a dynamic stochastic general equilibrium model which features housing as an internationally traded investment. Our analyses suggest: 1) a time-varying LTV ratio marginally improves welfare, 2) a more responsive stamp duty on foreign investors is welfare-improving, especially when shocks originate from abroad.

A2 - House Price Dynamics: 1

Jean Dubé (Université Laval), Di Legros, Sotirios Thanos
Temporal Dimension in Real Estate Modelling: Determining the Best Fit when Decomposing the Spatial Connections

Recent developments in spatial econometrics offer a way to explicitly account for spatial effects in Hedonic pricing (HP) models. However, real estate transactions occur over space and at a specific (moment in) time, which requires modifications in the construction of the “typical” symmetric weight matrix to decompose the spatial effect into two distinct components: i) a multidirectional spatial “peer” relation; and ii) a unidirectional spatial connections from past sale prices. These connections are captured through the specification of spatio-temporal weight matrices. This paper emphasizes the role of time in the price determination process, demonstrating how to select the best specification for spatio-temporal models. Based on an empirical application using residential transactions in Aberdeen, Scotland, the results clearly show that the two spatiotemporal components, the multidirectional “peer” and the unidirectional comparable past sales, must be treated as separate in Spatio-Temporal Autoregressive (STAR) models. Furthermore, the information of past comparable sales exhibits temporal friction (decay), providing no improvement to the overall model fit beyond the elapse of 6 months. The inverse temporal transformation is also shown to work best in capturing temporal friction (or decay).

Tommaso Gabrieli (University College London), Theodore Panagiotidis, Yishuang Xu
Pair-wise Convergence of Intra-city House Prices in Beijing

This paper examines the long-run convergence of houses price across the eighteen Beijing districts using monthly dataset that spans from January 2006 to December 2014. Following a recently developed pair-wise convergence approach, we conduct the unit root tests on all N(N-1)/2 possible pairs of housing price differentials across the N districts of Beijing. In this way, it needs not to select any base-district or regional average as the benchmark. A two-stage approach is employed in this study. In the first stage, the unit root test is adopted to investigate the convergence of house price differentials across Beijing. By finding that over half of the intra-city house price differentials are stationary, we move to the second stage of the investigation where we analyse the drivers of convergence. We investigate whether the probability of stationarity is affected by income differentials across the eighteen districts, as well as the demographics differentials and supply-side factors. The relationship between the price differentials and those drivers is evidenced to be negative. Furthermore, the findings in this study reveal that the half-life of a shock to long-run price equilibrium is positively affected by distance and housing supply while little evidence can be found for the influences from income or population density.

Gabriele Galati, Rob Alessie, **Federica Teppa (De Nederlandsche Bank)**
Heterogeneity in house price dynamics

We study the extent to which house price dynamics differ across market segments, and factors determine this heterogeneity. We address these issues by analysing a data set of individual houses and mortgages, based on a survey of about 500 Dutch households conducted over the period 2003-2016. We estimate a dynamic panel data model of house price dynamics by means of the Arellano-Bond estimator. Two main empirical results emerge. First, we generally find that house price dynamics imply a convergence towards their long-run equilibrium value, as indicated by a negative serial correlation coefficient and a positive estimated mean reversion coefficient. There is evidence that the housing market in the Netherlands is inefficient. Second, there is important heterogeneity across different market segments, with some markets being more “cyclical” than others. In particular, the speed of convergence of house price dynamics and the efficiency of housing markets depends on the geographical location, the degree of urbanization, and the type and year of construction of a house.

Diego Escobari, **Damian Damianov (Durham University)**
Getting on and moving up the property ladder: real hedging in the U.S. housing market before and after the crisis

Real hedging is the practice of getting onto the property ladder in order to trade up to a larger home in the future. When “starter homes” and “trade up" homes are highly correlated, real hedging can reduce the volatility of future housing cost. We present a theoretical framework to explore how the value of the real hedge depends on key characteristics of housing price dynamics, including correlations in the appreciation rates between house tiers, as well as volatility and momentum in the appreciation of home values. Empirically, while controlling for the potential endogeneity of housing bubble bursts across different U.S metropolitan areas, we find a significantly higher correlation in the appreciation rates across tiers in the period after the housing crisis. We conclude that real hedging has become more attractive in the period after the crisis, in particular in high value markets and in markets exhibiting strong momentum in returns as measured by the Standard & Poor's CoreLogic Case-Shiller tiered house price indices.

A3 - Housing Development: 1

Ziyou Wang (The Hong Kong Polytechnic University), Eddie C.M. Hui
The role of sentiment in optimal development of residential projects

The residential property market is characterized with cyclical price movements and long development lead-time. Developers are faced with challenging decisions such as the optimal timing and density of their projects in order to ride the boom-bust cycles. The increasingly important role of market sentiment further complicates this situation. Standard economic models may result in sub-optimal solutions when the effect of sentiment is overlooked. In this paper, we developed an option-based dynamic model to address this issue. We show, by both mathematical derivation and numerical analysis, that the expected waiting time to invest exhibits a U-shape pattern against sentiment; and the turning point of the U-shape pattern is more likely to appear earlier in projects with longer development periods. Meanwhile, as market sentiment intensifies, the optimal density and project value declines, ceteris paribus. Through this analysis we emphasis the importance of considering market sentiment in residential development decisions, and illustrate the complexity of the task. Market sentiment affects optimal start time, development density and project value. Standard economic models should be revised to take into account this behavioral factor.

Bruce Cole (The Greener Institute for Social Policy Research)
Does State Regulation Matter? The Case of Student Housing Development at State Land Grant Universities

This paper provides empirical evidence that considerably more time is required to complete student housing projects at public universities in states with excessive regulatory oversight. The quality and availability of student housing is an important criterion in college selection. Not having adequate facilities available in a timely manner can affect an institution's competitiveness. Research findings suggest that state land grant universities that use Public Private Partnerships to develop new student housing facilities reduce their project completion time. This research has implications for the regulation of state institutions of higher education, how public university administrators' choose between contract procurement methods for developing new student housing and where developers of student housing will choose to focus their marketing efforts.

K.W. Chau, Jiancong Liang, **Ervi Liusman (The Chinese University of Hong Kong)**
The uninteded consequences of public-sector-led urban renewal projects

Based on empirical observations from Hong Kong, we found that public sector led redevelopment projects have a negative impact on the prices of older nearby housing units. The same negative impact does not exists in private sector redevelopment projects. The results are consistent with our conjecture that the real redevelopment option of a housing unit will be lower by a nearby public sector led redevelopment projects. This is further confirmed by the weakening of such effects as the distance between the nearby housing unit and the redevelopment project increases.

James Shilling, Yao Chiang, **Jarjisu Sa-Aadu (University of Iowa)**
Foreign Direct Investment and the Level of Residential Investment

We use data from the Organization of Economic Cooperation and Development (OECD) and the International Monetary Fund (IMF) to examine the effect of foreign direct investment on the level of residential investment. We estimate a model in which the supply and demand for (the stock of) housing determines not only rents, house prices, and vacancies, but also the flow-level demand for housing and gross residential investment. We then posit that foreign direct investment is a shock to collateral values that may cause the asset price of houses to move in the opposite direction of rent and cause a move to home ownership and an adjustment of the housing stock. To test this hypothesis, we regress gross residential investment on a measure of foreign ownership in each of the 57 countries in our sample plus various control variables (including the effect of cyclical income, the nominal mortgage interest rate, the prior period's housing stock scaled by potential real GDP, etc.). The availability of panel data for each country allows us to control for unmeasured country fixed effects and for any year-specific common time trends in the data. We find large estimated elasticities for foreign direct investment, particularly in countries like Australia, New Zealand, Norway, Singapore, and Switzerland. The results are consistent with inelastic supply schedules and inconsistent with elastic supply schedules.

A4 - Mortgage: 1

Jonathan Rose (Federal Reserve Board, Washington)
Mortgage Contract Choice before the Great Depression

The real estate credit market in the United States before the Great Depression provides a useful laboratory for studying mortgage contract choice. A wide variety of contracts were in use and the nonfarm mortgage market was essentially free from government policy to promote any particular contract. To analyze contract choice, I have assembled a new sample of nonfarm mortgage loans outstanding in 1930 and linked by borrower to the household census. I find that, while contracts similar to those employed widely today in the United States—i.e. long-term fixed-rate fully amortized contracts—were widely available, relatively prosperous households tended to embrace short-term contracts that had no or infrequent amortization. I suggest this is because such households did not place much weight on the refinancing risk that such contracts entailed, while at the same time they valued the optionality of making amortization payments at will.

Peter Wierts (De Nederlandsche Bank and VU University Amsterdam), Dirk Schoenmaker
The Mortgage Credit Cycle

This paper provides a model of the mortgage credit cycle. All agents react individually to house price developments, while collectively creating a mortgage credit cycle. The main result is a reduced-form house price equation that shows how changes in fundamentals can set off an endogenous cycle. The endogenous feedback effects from house price changes lead to pro-cyclical credit supply, adaptive house price expectations, wealth effects and delayed responses in housing supply. Jointly, these effects lead to persistence in house prices and mortgage credit followed by turning points. Bank capital buffers and loan-to-value (LTV) caps for households dampen the mortgage credit cycle, next to increasing resilience against house price shocks.

Alla Koblyakova (Nottingham Trent University)
Credit Rationing and the Demand for Mortgage Debt in the UK

This paper has analysed different responses to tightening credit conditions and changes in mortgage market regulation from various regions and different household types. The empirical estimations employed three reduced form equations, to estimate demand for mortgage debt. The methodological approach employs a double hurdle model. A truncated regression and its empirical specification seek to reflect the presence of credit rationing, thus accounting for significant changes in financial regulation regime. The econometric focus of the paper is the second hurdle (the size of mortgage debt) in a double hurdle model, and the impact on this hurdle by the choice of mortgage instrument. The cross sectional estimations employed Understanding Society Survey Data, covering newly originated mortgages for the period 2001-2014. The main contribution of the paper is that it offers empirical evidence of that since 2008 the North, Yorkshire, East Midlands, Wales, and Northern Ireland experience rationing in access to both variable and fixed mortgage credit funds, while Scotland and the West Midlands had limited access to fixed rate mortgage credits. The younger population, classified as first time buyers continues to be constrained by mortgage credit funds. Variable mortgage holders have been more responsive to changes in interest rates representing liquidity constrained groups. Another contribution is the consideration of increasing integration between mortgage and wholesale funds, which gives evidence of lenders' profitability motives, rationing the supply of fixed rate funds for the liquidity constrained households. Policy implications might include awareness of the possibility of an asymmetric response to tightening lending conditions within the mortgage market across regions which may assist in implementation of financial regulation measures, as the results suggest that even under a national mortgage market where legislative policies do not differ by region, the interaction of a national mortgage market with regional economies generates regional effects, observed by different mortgage choice decisions.

Mihnea Constantinescu (Bank of Lithuania), Povilas Lastauskas
The Knotty Interplay Between Credit and Housing

We employ the recent Jordà et al. (2016) and Knoll et al. (Forthcoming) datasets to investigate the long-run relationship between house prices and credit volume, allowing for interest rate, real exchange rate and real GDP. We refine the analysis using more recent data at the quarterly-level to define relevant co-integrating relationships across a number of European economies. Housing and credit cross-sectional averages are included in the analysis to detect potential spill-over effects. Empirical results indicate an uneven feedback mechanism between credit and housing – the full loop is established only for several countries in the dataset. Important results relate to the statistical properties of the housing time series. Grouping countries for panel-like econometric exercises may lead to spurious regression results, poor inference and misleading policy implications. Short-run compared to long-run dynamics may often lead to contradicting policy advice if the order of integration of the house price series is not properly accounted for.

A5 – REITs

Ranoua Bouchouicha (University of Reading), Heidi Falkenbach, Simon Stevenson

Idiosyncratic risk, Insider ownership and Investment: Evidence from REITs

Managers and shareholders have different exposures to the firm′s risk. Whereas fractional shareholders are able to diversify their investments, the managers′ wealth is often concentrated in the firm they manage. This concentration induces managers to choose less risky investment than the optimal for fractional shareholders (Jensen and Meckling, 1976). The managers reduce the risk through choosing low risk assets or by using too little debt and underinvestment. To our knowledge, there are only two papers that address the relationship of insider ownership, risk and leverage for REITs. For U.S. REITs both Capozza and Seguin (2003) and (Dolde and Knopf, 2010) address the role of insider ownership on risk taking and leverage. In this paper, we contribute to the literature on insider ownership and underinvestment. Unlike earlier literature, however, we focus our attention on the idiosyncratic risk. Our focus is motivated by the fact that as fractional investors can diversify their portfolios (and idiosyncratic risk) effectively and the managers′ wealth is concentrated in one company, the key difference in the risk exposures of investors and managers is the exposure to idiosyncratic risk. This implies that the optimal level of investment is higher from the perspective of the fully diversified shareholder than from the perspective of a non-diversified manager (Panousi and Papanikolaou, 2012). Despite the pronounced role of idiosyncratic risk in REIT sector, the relationship between idiosyncratic risk and investments and the potential consequences of governance on it remains unexplored for REITs. We contribute to the existing literature by investigating the governance channels that reduce the effect the of idiosyncratic risk on investment in the case of REITs. In our analysis, we distinguish between systematic uncertainty and idiosyncratic uncertainty as there is a difference in hedging these two types of risk. We find a statistically and economically significant relationship between investment and idiosyncratic risk. Depending on the specification and controls used, a one standard deviation increase in the idiosyncratic volatility is associated with a 2.63% to 3.02% decrease in the investment rate. As the mean investment ratio in our sample is 17%, this is a substantial decrease. On the contrary, the systematic component of risk has no statistically significant effect on investment rate. This is an important finding, as REIT sector has a high level of idiosyncratic risk. We investigate the effectiveness of the governance channels for REITs in reducing the effect of idiosyncratic risk on investment. We focus on the ownership structure and the dividend payout since REITs are characterised by a particular regulatory framework related to the breadth of ownership and dividend payouts. Interestingly the difference in sensitivities of investment to idiosyncratic risk on high and low levels of insider ownership is not statistically significant. Our result differs from the finding of Panousi and Papanikolaou (2012), suggesting that there is a REIT specific monitoring element.

Xiaoying Deng (Shanghai University of Finance and Economics), Paul M. Anglin, Yanmin Gao, Hua Sun

How do a CEO’s political leanings affect a REIT business decisions?

Business decisions made by the real estate industry can have a profound effect on the well-being of people who live, work, or shop in these buildings. While these decisions may be informed by evidence, the available evidence is often incomplete, unrepresentative or otherwise less than ideal. Therefore, the personal opinions or judgments of senior executives can have an effect. In this paper, we study these effects in two parts: risk-taking and Corporate Social Responsibility (CSR) activities. Since political opinion is a relatively stable measure, which is also associated with preferences for risk and CSR, we examine how the political leanings of the CEO are related to these effects. Based on the data from 1999 to 2013, we find that Real Estate Investment Trusts (REITs) with Democrat-leaning CEOs tend to take more risks, as evidenced by higher levels of leverage, more capital expenditures and risky investments. We further find that politically active CEOs are more broadly engaged in different types of CSR activities.

Yildiray Yildirim (City University of New York), Thomas Emmerling (M&T Bank Cooperation), Thomas Emmerling
The Hybrid Nature of Real Estate Trusts

When do real estate trusts exhibit superior performance, when they mimic the underlying real estate or when they behave like stock? We test whether real estate trusts outperform common stock only when it mimics underlying property fundamentals. We also explore what capital market conditions correspond to and/or contribute to when securitized real estate behaves more like underlying property fundamentals. To explore this issue, we examine the investment performance of real estate trusts over the Great Depression and also the Great Recession. A distinguishing feature of our study is that we are the first to analyze the investment performance of real estate trusts (RETs), the predecessor to modern day real estate investment trusts (REITs), which traded over the late 19th and early 20th century. We compare the behavior and performance of RETs to REITs in the process. We find evidence consistent with the notion that securitized real estate exhibits superior performance only when it mimics the direct real estate market. This performance is fueled in part by cheaper borrowing costs, greater availability of debt and equity financing, and loosening credit standards. With the advent of a crisis, securitized real estate exhibits a greater co-movement with common stock. When this occurs, real estate behaves in a similar fashion to common stock and any abnormal performance disappears. This corresponds to tighter lending conditions and higher borrowing costs. We also show that RETs behave in a similar fashion to REITs.

David Ling (University of Florida), Andy Naranjo, Benjamin Scheick
Asset Location, Timing Ability, and the Cross-Section of Commercial Real Estate Returns

This study examines the sensitivity of equity REIT returns to the time-varying MSA allocations of REIT underlying property portfolios. Using a large sample of individual commercial property holdings, we find significant cross-sectional and time variation in REIT geographic exposures and the ability of these exposures to explain the cross-section of REIT returns. Importantly, the pattern of MSA exposure effects changes quickly as local market information is incorporated into property values both across MSAs and over time. We further find evidence consistent with REIT managers being able, on average, to both identify MSAs that will outperform in the following year and overcome the costs and delays associated with increasing allocations to these MSAs. This ability to time allocation decisions is most prevalent in non-Gateway markets and varies significantly across MSAs and over time. Furthermore, the ability to time entry into high performing markets is concentrated in well diversified REITs and those with relatively low levels of financial constraint. Financially flexible firms with a larger platform and experience owning and operating properties in multiple markets are better positioned to quickly act on investment opportunities they identify in major MSAs. In contrast, the ability to time market exit is more highly correlated with a firm’s perceived growth options and investment opportunities.

A6 - Land & Zoning

Michał Głuszak (Cracow University of Economics), Jacek Batóg, Iwona Foryś, Radosław Gaca
The impact of airport noise, land use restrictions and house prices: Evidence from selected regional airports in Poland

Airport operation generates several externalities, some of which manifest on the property market. One of the most profound is the aircraft noise, and the consequences it has for real estate values. According to numerous empirical studies coming from different countries (although mostly from US) airport noise has significant negative impact on house prices. Furthermore the airport operation influences local planning and is often converted into restrictive local zoning plans, limiting the potential development on area affected. Last but not least, in Poland due to significant impact of an airport on the environment, according to the Environmental Protection Act (2001) Limited Land Use Areas (LLUAs) are created around airports. In Poland only selected airports have established limited land use areas (LLUAS). During the study period LLUAS were introduced around: Warsaw Modlin airport in Nowy Dwór Mazowiecki, Poznań-Ławica airport in Poznań, Warsaw Chopin airport in

Warsaw, Kraków-Balice airport, Wrocław-Starachowice airport, and Katowice airport in Pyrzowice. Introduction of both local zoning plan and LLUA can additionally influence the house prices. This negative effect can be both direct and indirect. The direct effect is linked to restriction that decrease the development potential of properties within the area affected. The indirect effect comes from increased awareness of general public (and house buyers) about the negative externalities generated by the airport. It can be argued that higher awareness can later translate into revealed preferences on the housing market, and as the consequence is discounted in residential prices.

The paper attempts to assess the influence of the airport on the property prices, and disentangle the effects of (i) airport noise and (ii) land use restrictions (introduced via zoning plans and LLUAs). While the former effect was covered by many articles, the later effect is relatively understudied. Moreover, the majority of empirical evidence comes from mature economies (mostly US, and Western Europe), thus it is not sure whether the findings fully apply to other urban and economic setting. It can be argued that on the emerging market, given (i) relatively low environmental and legal awareness of house buyers, (ii) low transparency and less efficient market, the negative effect of the airport operation might not be fully discounted in property values. The article aims to address these concerns and fill the gap in the literature regarding relations between airport operation and property market.

In order to address the research problem we studied the housing market around five regional airports in Poland: Bydgoszcz-Szwederowo airport, Szczecin-Goleniów airport, Pyrzowice airport, Poznan-Ławica airport, Krakow-Balice airport. In the case of former two airports local authorities has not introduced LLUAs, whereas in the case the latter three LLUAs were adapted during the study period. We use spatial hedonic regression to assess the joint effect of airport noise on property prices. The analysis utilizes the data on housing transactions within chosen research area around the airport. Data on house sails were obtained from notarial acts gathered in the Real Estate Cadastre and the National Geodetic and Cartographic Resources. To address the problem of endogenity, and to assess the causal effect of introduction of LLUA on house prices we use Diffference-In-Differences (DiD) approach.

Tian Luan (The George Washington University)

A New Estimate of Elasticity of Substitution between Structure and Land

The elasticity of substitution of land for structure is an important parameter in standard urban model and has major implications for housing supply in cities. Past studies report a wide range of estimates from 0.27 to 1.52. This study differs from previous research in the following several ways: First, it considers buildings throughout a large city covering a wide range of FARs rather than just suburban low-density units. Second, land values are based on actual transactions instead of appraisals or imputations. Third, building FAR is based on what was actually constructed immediately after the land purchase. Finally, alternative estimates are constructed using assessment rather than market land values and using only low density housing. Consistent with the engineering literature on building height and construction cost, elasticity of substitution is shown to be significantly below unity for higher FAR units. Specifically, while the elasticity of substitution for single family housing is 0.72, it is only 0.33 for newly built apartments containing both low and high density structures. Finally, estimates for high density development using assessed land values are close to unity. This suggests that assessors and appraisers might use the Cobb-Douglas Production function but the market does not.

Yang Yang (National University of Singapore), Wang Long

The Privilege of Power and Wealth: Evidence from China's Urban Land Market

Using a comprehensive, unique, and representative dataset of 316,342 transactions from 2000 to 2016 in approximately 2,300 counties of urban China, the paper examines the underlying mechanisms that drive the price premiums in land auctions. We find that SOEs pay 14% more than do their non-SOE counterparts for a comparable land parcel in auctions. Similarly, individual buyers pay 16% more than do firms when acquiring a comparable land parcel. We conclude that the starting bid fully explains the price premiums SOEs pay as they bid up land prices to acquire quality land parcels, while a relatively weak bargaining power contributes to the price premiums paid by individual buyers. Our difference-in-difference estimations show that the Economic Stimulus Program significantly increases the price premiums SOEs pay in land acquisitions, and the price premium decreases over time with the depletion of the distributed funds.

Andrew Mueller (University of Denver), Stephan Weiler

Zoning and transportation choice: Spatial models of land use and travel behavior

This paper develops a spatial econometric model of transportation mode choice and tests the impact of zoning and other built environment variables on the choice of non-auto alternative transportation. We explicitly account for spatial heterogeneity and spatial dependence using the Spatial Durbin Model. Using a unique combination of travel, employment, and built environment datasets from the City and County of Denver, Colorado, we confirm previous results that built environment variables have a small impact on choice of transportation mode. Furthermore, we find that residential zoning around a place of residence is associated with increased auto mode choice, while business zoning ¾-1 mile from a residence leads to a greater likelihood of alternative modes of transportation.

Session B

B1 - Housing & Taxes

Björn Seipelt (Cologne Institute for Economic Research), Nico Pestel
Price Effects of Real Estate Transaction Taxes: Evidence from Germany

This paper empirically assesses the impact of the German real estate transaction tax on prices and economic activity in the construction sector by using panel data on quarterly real estate transactions on the county level and construction sector activity on the federal state level. In line with previous research, first results indicate that the tax is overshifted on the seller such that the percentage drop in prices is even higher than the actual change in the tax rate. The basic regression approach is then augmented by various spatial components in order to capture spillover effects of closely located sample units. Subsequent results suggest that almost the entire incidence is on the seller whilst there is no evidence for overshifting left. Contrastingly, the construction sector does not reflect entirely compelling evidence in favour of changes in people's behaviour towards the acquisition of property in response to changes in the tax rate.

Mark van Duijn (University of Groningen)
Heterogeneous effects of declining property transfer taxes on housing market segments in the Netherlands

After the global financial crisis, housing markets became dysfunctional. In 2011, the Dutch government decided to decrease the property transfer tax from six to two percent to stimulate the owner-occupied housing market. It is well documented that taxes levied on the sale of purchase of a house decrease the number of sales and housing prices. However, it is assumed that these effects are general for the whole housing market. This study investigates the heterogeneous effects of the declining property transfer taxes on the number of sales and house prices on different segments of the housing market. Our data show that the tax decline caused higher number of sales and housing prices for lower quality houses compared to higher quality houses. These results are strengthened if we compare regions with population growth and regions with population decline. This suggests that the property tax decline has immediate policy implications. The associated welfare gains of declining property transfer taxes are mostly transferred to lower quality housing markets and shrinking areas.

Hiu Fung Tam (London School of Economics)
Behavioural response to time notches in transaction tax: Evidence from stamp duty in Hong Kong and Singapore

To moderate speculation in housing market, multiple Asian cities implemented transaction tax notches on holding period of property. Using administrative transaction record of property trading, this paper studies the behavioural response in the timing of transaction, tax incidence and selection of buyers using the policy changes in Hong Kong and Singapore. Tax notches on holding period generate significant tax avoidance bunching in the timing of transaction, and properties were less likely to be resold even one year after the tax last applies, suggesting plausible crowd out of transactions. I construct and use a new dataset on government estimated rental rate to estimate the tax incidence and find evidence that buyers bear significant tax burden even when tax-free alternatives are available in the market. Evidence shows that time notches on holding duration produce selection effect among buyers with different ex ante probability of trade in the taxable holding period. Estimates suggest that traders on average are willing to wait for 3-4 weeks to avoid 1% of transaction tax, and each week of delay in transaction would generate loss in the trading surplus at 0.3 % of property value.

Roland Fuess, **Oliver Lerbs (ZEW Mannheim)**
Do Local Governments Tax Homeowner Communities Differently?

This paper investigates whether and how strongly the share of homeowners in a community affects residential property taxation by local governments. Different from renters, homeowners bear the full property tax burden irrespective of local market conditions, and the tax is more salient to them. "Homeowner communities" may hence oppose high property taxes in order to protect their housing wealth. Using granular spatial data from a complete housing inventory in the 2011 German Census and historical war damages as a source of exogenous variation in local homeownership, we provide empirical evidence that otherwise identical jurisdictions charge significantly lower property taxes when the share of homeowners in their population is higher. This result appears to be independent of local market conditions, which suggests tax salience as the key mechanism for this effect. We find strong positive spatial dependence in tax multipliers, indicative of property tax mimicking by local governments.

B2 - Housing & Life Cycle

Yue Li (VU University of Amsterdam and Netspar), Mauro Mastrogiacomo
Tax-exempted intergenerational transfers: do they reduce household indebtedness?

Using the mortgage loan level data (LLD) collected by the Dutch National Bank (DNB), we study the effect of the extension of a tax benefit to intergenerational transfers that was into play in the aftermath of the credit crisis and aimed to reduced indebtedness, specifically for underwater mortgages. Using newly collected administrative micro data with high frequency, we are able to identify voluntary repayments on mortgage loans. We find that during the period of the extension of the tax benefit, mortgage voluntary repayments have increased. Also, when the tax incentive has motivated debt reduction, this did not happen for the group of highly indebted households specifically. This suggests that stimulating intergenerational transfers can be an effective tool to shorten household balances, but more targeting is needed if one wants to reduce high indebtedness of for instance underwater mortgage loans.

Amanda Ross (The University of Alabama), Naqun Huang, Jing Li
Home Equity and the Timing of Claiming Social Security Retirement Income

This paper examines how changes in house prices affect the timing of when eligible individuals start to receive Social Security Retirement Income (SSRI). As changes in the price of housing and SSRI withdrawal decisions are likely to be correlated with unobserved local demand shocks, we employ an instrumental variables strategy using the land supply elasticity of an MSA interacted with the national housing price index changes as an instrument for the value of a home. We find that an increase in the value of a home causes elderly individuals to delay SSRI claiming once they are eligible during the housing boom period, but we do not find a statistically significant impact on the claim decision during the bust period. Our findings highlight the potential channel of cashing out home equity in replace of receiving SSRI early for seniors to finance retirement during the housing boom period.

Yi Fan (National University of Singapore)
Does Adversity Affect Long-Term Consumption and Financial Behaviour? Evidence from China's Rustification Programme

In this paper I examine the long-term consequences of adversity on consumption and financial behaviour, using the largest forced migration experiment in history. From 1966 to 1978, 17 million urban youths in China, mostly junior or senior high school graduates, were sent to the countryside to do farm work for an average of three to four years under a rustication policy. Using data from the mini-census in 2005, I find that the rusticated generation behaves more conservatively than the non-rusticated generations over the long term, as they consume less housing and purchase more insurance and pension. In addition to the cross-generational influence, I investigate the intra-generational effects of rustication with data from the Chinese Household Income Project and the

Chinese Twins Survey in 2002. A similar conservative behavioural pattern is revealed. Individuals with rustication experience spend less on housing, accumulate more saving and insurance, and invest less in risky assets, compared to their age-eligible but non-rusticated peers. Applying a habit-forming model, I suggest that one interpretation for the conservative behaviour lies in the habits formed during adversity. The results shed light on how a policy, especially in the early stage of life, influences one generation over the long term.

Donald Haurin (Ohio State University), Samuel Dodini, Stephanie Moulton, Maximilian Schmeiser
Unlocking Home Equity: Credit Constraints, House Prices and the Federally Insured Reverse Mortgage

We investigate whether a federal policy intervention, the Home Equity Conversion Mortgage (HECM), increases home equity borrowing in areas that are credit constrained. We estimate intertemporal and spatial differences in the proportion of seniors in a ZIP code that originate HECMs relative to other channels of home equity borrowing from 2001 to 2012. Unlike other borrowing channels, we find that HECM originations increase in credit constrained areas as home equity increases. While higher rates of other types of borrowing are associated with higher foreclosure rates, we find that HECM borrowing has a negative or insignificant relationship with later foreclosure rates.

B3 - Homeownership & Tenure Choice

Debarpita Roy (Amity University)
An econometric investigation of home owners and renters in urban India

This study seeks to analyse the effect of household characteristics on the tenure status of a household for the urban areas of India. For the purpose of this study two tenure classes are considered, owner occupier households and renter households. Data employed for the study are unit level data from the National Sample Survey Organisation (NSSO) 49th and 58th rounds on housing characteristics for the years 1993 and 2002 respectively. It is across 16 of the most populous Indian states. Results indicate probability of ownership vis-à-vis renting depends on the financial status as well other socio economic characteristics of the household. The technique employed is logistic regression. Interestingly households belonging to certain vulnerable categories and having lower consumption expenditure like female headed households, SC/ST/OBC households and blue collar worker households' have higher probability of owning, as per the first level of the analysis. To explore further two routes are followed. Firstly, the effect of interaction effects involving the dummy variables designating these groups and the log of monthly consumption expenditure is assessed. Secondly, the marginal effect of the log of monthly consumption expenditure is analysed across its different levels and over different dummy variables of household characteristics. The main result from both analyses indicates that monthly consumption expenditure which is a proxy for a household's income is not as important a factor for ownership for the vulnerable households as for others. It appears to be a more important factor for the higher monthly consumption expenditure households, as per the outcomes of this study. This analysis adds to the existing body of literature in three ways. First and foremost, no such study has been attempted for India trying to understand how household level characteristics affect probability of ownership of houses. Second even in the international literature, no study of tenure status and choice has sought to capture the actual magnitude of probability change through marginal effects as this study does. Third, the findings from this study can form the background to policy discussions on housing ownership enhancing prescriptions.

Carolin Schmidt (Heilbronn University and University of Tuebingen)
Homeownership: Boon and Bane

Using system GMM, this paper estimates a dynamic panel model for 21 industrialized countries with different levels of homeownership to investigate whether owning makes an economy stronger (boon?) or weaker (bane?). This research is underpinned by the assumption that the positive effect of homeownership becomes outweighed by the negative effect at high levels. The results confirm that low to intermediate levels of homeownership have a positive association with GDP growth, but that there is a turning point at homeownership rates of around 68 percent. This results implies that homeownership can be boon up to a certain point and bane when this point is exceeded.

Gary Painter (University of Southern California), Hyojung Lee, Dowell Myers, Jung Ho Park
Diverted Homeowners and Rental Affordability

Although much has written about the housing market collapse of 2006-2009 and the decline in rental affordability, studies linking the two have been relatively scarce. This paper posits a direct link between shifts in homeowner/rental demand. In so doing, this paper notes that 8.4 million would-be homeowners (the expected number given market and demographic characteristics in 2000) have been shifted to renting or have left the housing market in 2015. These diverted homeowners triggered a cascade of adjustments throughout the rental housing market. The results of this study suggest that a one-percentage point lower homeownership rate than was expected increases lower quartile, median, and upper quartile gross rent by about 42, 49, and 80 dollars respectively. The increased demand for rental housing also increases rent burden. We find that a one-percentage point increase in diverted homeowners raises the share of rental households paying 30% or more of household income on rent by 3.3 percentage points, and the share of households paying 50% or more by 3.0 percentage points.

Younghoon Ro (Korea Institute of Public Finance)
Korean Antichresis and Housing Tenure Changes

Recent changes in Korean housing rental market can be epitomized as the housing tenure shift from pure Chonsei – Korean Antichresis - towards hybrid rental with various combinations of deposit and monthly rent payment. Chonsei has been the most popular and dominant form of housing rental tenure up until 1995 Census, taking 30% share after the 53% of owner-occupying household. Chonsei is a lease contract in which landlord and tenant swap the property and the lump-sum cash and agrees to return both assets to each other at the expiration of lease contract, while netting out implicit periodic rent and interest payment streams during the lease period. This kind of unbundling the right-of-use and exclusion (usufruct) from the property rights and transferring to the tenant in return for the deposit money can be interpreted as a secured lending with the property itself as the collateral or pledge. Chosei is not unique in the world since the antichresis contract had been into practice for very long time in many civil law countries like France, Spain, Boliva and Louisiana state in U.S. In that sense Chonsei can be called as the South Korean version of the antichresis. Currently, the top 4 major cities of Boliva has 10 to 12% of homes under antichresis, which is around 1/4 of the total rental housing. We found that the total sum reached 430 trillion KRW (a little less than $400 billion) in 2014 after the Chonsei deposit inflation period of 2012- 2013. With both the rate of interest and inflation prevailed so low, landlords would not lease their house in the pure form of Chonsei and tenants also can not afford to come up with the increased lump-sum deposit money. As the investment opportunity return on the deposit money become so low and Chonsei offering so scarce that landlords' started to transform the pure Chonsei tenure into some hybrid rental form with the combination of deposit and monthly rental payment. We call it semi-Chonsei hereafter. The purpose of this paper is to examine how Chonsei renters changed their housing tenure and what is the main driver in the occupancy change during the period of 2012-2015. Based on the 2,315 sample Chonsei households found in Korean (panel) Survey of Household Finance and Welfare, we classified the year 2012 Chonsei renters into 3 mutually exclusive groups: (i) continuous Chonsei renters afterwards, (ii) year 2012 Chonsei renters who came to experience semi-Chonsei or some combination of rent and deposit rental mode afterwards, (iii) year 2012 Chonsei renters who became owner-occupiers as of 2015. The multi-nomial and ordered probit model of tenure mobility was adopted to obtain the following regression result. As the household's net wealth accumulation become low and the current income become large in the sample, the year 2012 Chonsei renters will be more likely to experience semi-Chonsei or rental with deposit and monthly rent payment(hereafter we call it hybrid rental). The explanatory variables like householder's age, sex, education level, marital status, and the size of the household have statistically significant impact upon the tenure change from Chonsei to owner-occupier mode, while these demographic factors do not affect the behavioral tenure change of Chonsei to semi-Chonsei or hybrid rental. All these findings are in line with a priori anticipation since becoming a homeowner involves various demographic considerations while the choice between Chonsei, semi-Chonsei, and hybrid rental with the combination of deposit and rent is purely a financial decision-making matter. Even with this trend of rental tenure change from pure Chonsei toward some form of monthly payment so important in the market, we predict that in near future pure Chonsei will not become extinct and Korean housing rental market will witness the various arrays of rental contracts. Then the differential income tax treatment towards deposit money and explicit rent payment would result in the equity and economic inefficiency issues. By reviewing the long history of Korean taxation of housing rental income, we come to the conclusion that taxation-or-exemption-principle on the basis of whether the landlord owns three of more houses, or whether rental house is expensive one, etc. is not an adequate policy criterion for rental income taxation. The previous presumptive taxation methodology of converting Chonsei deposit money into implicit rental income by multiplying some rate of investment return could no longer be viable in the period of low interest rate. It also needs to be reminded that the deposit money provided by tenant is in essence landlords' debt incurred together with house rental, and should be returned to landlords at the end of contract.

B4 - House Price Fundamentals

Panagiotis Petris (National and Kapodistrian University of Athens), Panagiotis Alexakis, Georgios Dotsis

Bubble Test in London Housing Market

Following a recently developed recursive right tailed test in real time monitoring, we investigate for exuberant behavior of house prices in London market. To avoid any possible averaging bias, we implement the test in all inner and outer London Boroughs, considering real house price paid data. We calibrate prices by incomes, setting a fundamental measure, to identify if explosiveness in dwelling prices is due to the presence of a speculative bubble contained in the unobservable component of the asset (house) price, or is controlled by the character of the fundamental series (incomes). Empirical results denote the existence of a recent bubble episode in four (4) all outer London boroughs, out of the total thirty three (33) at 1%, 5% and 10% significance level. The date stamping procedure reveal strong evidence that the bubble has not burst yet.

Christian Hilber (London School of Economics), Olivier Schoeni

On the Adverse Consequences of Constraining Second Home Investments

We investigate how political backlash against wealthy second home investors in high-amenity places – tourist areas or superstar cities – affects local residents. We develop a general equilibrium model and exploit a quasi-natural experiment – the 'Swiss Second Home Initiative' (SHI) – to test the key predictions of the model. Consistent with theory, we find that the SHI, which banned the construction of new second homes in desirable tourist locations, lowered transaction prices of primary homes in affected areas by around 12 percent but did not adversely affect prices of second homes. Our findings suggest that the negative effect on local economies dominated positive amenity-preservation effects. We conclude that constraining second home investments may reinforce rather than reduce wealth inequality.

Steven Bourassa (Florida Atlantic University), Martin Hoesli, Elias Oikarinen

Revisiting the House Price-Income Relationship

This study undertakes a systematic analysis of the relationship between house prices and personal income by deriving a simple spatial equilibrium model and conducting an empirical analysis using data for the 50 largest U.S. Metropolitan Statistical Areas (MSAs) for the period 1980-2014. In the empirical analysis, we apply state-of-the-art panel data analysis tools, define income in multiple ways, allow for regional heterogeneity, and control for spatial dependence and endogeneity. Both theoretical considerations and empirical findings lead us to conclude that the house price-income ratio is not a good indicator for house price bubbles. We find that the house price-income ratio is not stable in the long run for most cities. In contrast, panel regression models that allow for regional heterogeneity and control for endogeneity yield stationary equations for house prices in most MSAs. Among other findings, we show that it is important to allow for heterogeneity across locations when analyzing the relationship between house prices and income. The findings also have implications for trends in the wealth-income relationship.

Laura Izquierdo Rios (VU University of Amsterdam & De Nederlandsche Bank)

Explaining House Price Expectations: New International Evidence

The purpose of this paper is to provide new empirical evidence on how individuals forecast house prices, using data from 12 different European countries. Persistence and mean reversion are found to be the main drivers behind expectations, mirroring the boom and bust cycle found in house prices. There is also evidence for a moderating relationship between persistence and mean reversion, which dampens the housing cycle. Lastly, expectations vary widely depending on the location of the individual, highlighting the importance for a regional approach for future regulation.

B5 – Housing

Arno Van Der Vlist (University of Groningen), Jos van Ommeren

Nonmarket allocation of public housing: empirical evidence from first-come-first-serve and lottery allocation in Amsterdam

Public housing is allocated using nonmarket mechanisms such as waiting time and lotteries. We examine allocation outcomes of waiting lists and lotteries for Amsterdam. Our identification strategy is based on information on households and public houses that are usually allocated to households using waiting lists but which are allocated for a short period using lotteries. We use the households' waiting times to elicit information on the value of winning a lottery. Winning a lottery reduces waiting time by 6.5 years, which has a value of €50,000 in Amsterdam City. We demonstrate also that the match of households and housing characteristics differs with allocation mechanism. Through lotteries, public housing appears to be misallocated across households.

Stephen Roulac (University of Ulster)

The real estate disciplines' introductory principles textbooks resist Schumpeter and change

It is broadly recognized that real estate has been subjected to a veritable tsunami of change forces dramatically impacting and buffeting.These changes are not necessarily reflected in the focus of research topics investigated by the property research community. Mainstream real estate textbooks are even more innocent of these forces and their implications. Consequently, the academy is not well serving students studying property, as learning resources are predominantly anchored in conventional practices applicable in the pre-innovation, pre-information era.

This paper explores how the implications of change influence the concerns of property scholars, generally, and the contents of property curriculums, specifically. While the majority of real estate textbooks evaluated in the 1994 review were no longer in the market a decade later, significantly, the books that survived were more traditional than the books that are no longer on the market. Notably, the survivors had become more non-traditional, placing relatively greater emphasis on topics other than law and brokerage. Replacement books not in the market in 1994, were fundamentally even more traditional – in their emphasis on law and brokerage – than the collection of real estate principles books were a decade ago. Strikingly, economics was less emphasized in 2004 than it was a decade earlier.

While both the economy and the real estate discipline changed profoundly over the 1994-2004 decade, the real estate principles textbooks did not well reflect that reality. While the economy represented real-time empirical validation of Schumpeter's classic principle of creative destruction, the same conclusion does not apply to the real estate principles textbook market. In the market for real estate principles textbooks, the status quo was reinforced, while the influence of the more progressive approaches declined, as the creative is much of what has been destroyed.

At a time when the economy is more complex and the factors that influence future performance of property goods and services enterprises are more complex than simple, more dynamic than static, greater in number rather than fewer, many studying real estate principles at colleges and universities are likely to find that the textbooks that they would learn from are less than adequate. Those pursuing real estate careers, whose initial knowledge foundation is built upon deficient, rather than superior professional services, shall be more likely to miscalculate in their decision-making, generally, and in making capital commitments, specifically.

Andrew McErlane (University of Ulster), Martin Haran and Sharon McClements

A conceptualisation of UK public-private partnerships (PPP) social infrastructure provision

As the UK continues to transition from the Private Finance Initiative (PFI) to Private Finance 2 (PF2), the UK PPP marketplace remains in a state of uncertainty. Furthermore, derived from low market activity, this new PPP innovation has undergone limited operationalisation, transpiring in a knowledge gap pertaining to PF2. Through a bi-quantitative methodology, this research addresses these knowledge gaps. Specifically, through datasets ascertained from Infrastructure Journal (IJ) Online Database, this investigation profiles current PPP social infrastructure market activity in terms of capital value and deal number. This is complimented with evidence gathered through survey questionnaires. Key findings reveal PPP overall is an attractive framework for social infrastructure investment and provision. Moreover, of the changes implemented through PF2, the expedited procurement process has been the most auspicious.

B6 - Commercial Real Estate

Kerem Yavuz Arslanli (Istanbul Technical University), Christopher M. Hannum

A Predictive Model of Revenue per Available Room in the Eastern Mediterranean Using Bilateral Exchange Rates

In an era of exchange rate volatility, performance of hospitality industry assets may be highly sensitive to currency shocks which affect international demand, such as the fall in the value of the Russian Ruble in late 2014. We aim to create a systematic and meaningful predictive model to give insight for managers and investors in the hospitality industry in this region regarding which bilateral exchange rates to watch most closely and particularly the timing of anticipated effects. This study will examine the relationship between revenue per available room (RevPAR), the key measure of operational performance in the hospitality industry, and bilateral exchange rates in eight countries of the Balkans and Eastern Mediterranean. The study methodology follows a LASSO penalized regression model for simultaneous and systematic selection of variables and lag lengths and estimation of model parameters.

Gianluca Mattarocci (University of Rome), Lucia Gibilaro

Does geographical diversification matter in Corporate Real Estate? Evidence from the US Retail sector

Real estate represents a key and strategic asset of the firms' balance sheet for all the major corporations worldwide (e.g. Zeckhauser and Silverman, 1983) and nowadays it represents a

strategic asset for any type of corporation (Roulac, 2001). The main motivation proposed in literature in order to justify the importance of the corporate real estate (hereinafter CRE) assets owned is to reduce the risk perceived by investors and increase their performance expectation (Hwa, 2007). An additional effect of the CRE is to increase the financing capability of the firm due to the increasing value of collateral that may be provided and normally the lower financial constraints may have a positive effect on the growth perspectives for the firm (Alimov, 2016).

CRE is normally considered a source of diversification for the firm that allows to stabilize the income over time and reduces the risk assumed by shareholders. Empirical evidence on the impact of the amount of exposure on the risk assumed is still limited and there are no clear evidences of the potential advantages related to reducing the risk assumed by shareholders (Seiler, Chatrath and Webb, 2001).

Empirical evidence shows that higher exposure to real estate implies lower average returns and an higher sensitivity to systematic risk (Deng and Gyouko, 1999). The detailed analysis of real estate assets owned shows that if the attention is focused only on instrumental real estate assets the unexpected performance of firms with higher exposures is higher than other firms (Tuzel, 2010). The impact of the real estate ownership on the stock market performance is significantly different on the basis of the overall market condition and normally in a crisis scenario the lower performance of high CRE firms is more significant (Liow, 2004). An higher exposure on real estate is normally considered a proxy of higher potential diversification benefits for shareholders (Liow and Nappi-Choulet, 2008) but, even if is clear in the literature that value of real estate owned is affect by their location (e.g. Roulac, 1995), there is no evidence on the impact of the geographical features of the real estate portfolio owned on the firm’s value.

The paper evaluates the role of geographical diversification of corporate real estate for a representative set of US firms in the retail sector. The sample considers all the listed US firms classified in the retail sector available in the Bloomberg database at the end of 2016 for which real estate asset owned geographical features are disclosed in the form 10k (section properties).

Results show that diversification policies in the corporate real estate portfolio affect the performance of firm and normally an higher diversification implies difference in the results achieved due to a difference in the demand of the share issued by retail firms with diversified and concentrated real estate portfolio. Investors accept to pay a premium for firms that have a real estate asset portfolio diversified but the size of the premium may be affected by the international exposure that is normally not appreciated by the financial markets.

David H. Downs (Virgina Commonwealth University), Eli Beracha, Greg MacKinnon
Value Investment Strategies for Commercial Real Estate

This paper examines the value effect hypothesis with respect to commercial real estate properties. Value based investment strategies have attracted growing attention by fund managers for a wide range of asset classes. However, until recently, scant research has focused on institutional-grade commercial real estate. Our analysis uses a large, proprietary property-level dataset with appraisal based returns on the commercial real estate properties that are included in the NCREIF Property Index (NPI). Classifying high cap rate properties as value properties and controlling for location, property type and time period, we examine whether and the extent to which value properties outperform other properties in terms of raw and risk-adjusted returns. Our results show that high cap rate (value) properties earn higher returns compared with low cap rate properties, and outperform low cap rate properties on a risk-adjusted basis. The return differential is statistically significant, economically meaningful, and holds across property types and over the real estate cycle. Moreover, the value effect is evident both within and across locations so that, on average, higher cap rate properties within a category of CBSA outperform lower cap rate properties from the same CBSAs and higher cap rate CBSAs outperform lower cap rate CBSAs. Our analysis also examines the source of the value effect and finds that, other than for apartment properties, higher cap rate

properties outperform lower cap properties due mostly to higher income. Real estate investors and academics should find interest in our analysis given the evidence we provide on the strength and consistency of the value effect based on individual property data.

Masaki Mori (National University of Singapore), Seow Eng Ong, Jianmei Wu, Fang Zhang

Effect of REIT Ownership on Acquisition Premium and Property Performance

This study examines the relationship between Real Estate Investment Trust (REIT) ownership, acquisition premiums and property performance. We focus on industrial properties in Singapore, where the REIT market is still in its expansion stage and the sale and leaseback (SLB) deal is prevalent among REITs. We compare the acquisition prices and rents of industrial properties owned by REITs with those of comparable properties owned by non-REITs utilizing the propensity score matching method. We find that industrial REITs pay price premiums on properties they acquire, as compared with non-REIT property owners. The price premium is only statistically significant in SLB transactions (33.2% to 36.2%). We further find that REITs charge higher rents only on SLB properties than non-REIT property owners: 25.9% to 40.1% higher. The results suggest that REIT ownership itself does not create price and rental premiums, SLB transactions do. This implies that buyers and sellers seem to be appropriately pricing the transactions while accounting for the rental differentials.

Session C

C1 - Housing and the Macro Economy: 2

Nan-Kuang Chen (National Taiwan University), Tzu-Yu Lin
Macropudential Policy, Monetary Policy, and Financial Crisis

This paper develops a dynamic stochastic general equilibrium (DSGE) model in which firms and intermediaries are both subject to borrowing constraints. We then study the welfare implications of the macro-prudential policy setting counter cyclically loan-to-value (LTV) ratio, and credit market intervention. Impulse responses show that the stabilization effect of a policy rule largely depends on the source of shock. The welfare analysis indicates that the LTV ratio rule is Pareto improving while the credit intervention is not. In particular, the LTV rule responding to output enhances the social as well as individual groups' welfare most significantly. On the other hand, the credit intervention policy raises the output level and households' consumption, but nevertheless fails to improve agents' well-being because it leads to higher volatilities of major economic aggregates.

Kenneth Roskelley (Mississippi State University), Randall Campbell
International Housing Prices: Measuring the Effects of Monetary Policy, Current Account Deficits, and Credit Standards

We investigate the direct impact that monetary policy and current account balances have on housing markets, as well as their indirect impact through changing credit standards. Using an unbalanced panel of 57 countries from 1990-2014, we regress real housing returns on cumulative Taylor rule deviations and changes in current account balances relative to GDP. Unlike prior studies, we use central bank surveys and economic data to identify credit demand and credit supply shocks related to monetary policy and current account deficits. Our preliminary findings indicate that monetary policy does not explain the observed housing returns. In fact, tight monetary policy is correlated to higher housing returns. Current account deficits, on the other hand, are correlated with higher housing prices. Part of this correlation, however, simply reflects that higher housing demand, and thus higher credit demand, result in larger current account deficits. Finally, we find that credit standards are capable of explaining some portion of housing returns over select sub-periods, but that these results are quite sensitive to the choice of the sub-period.

Bertram Steininger (RWTH Aachen University and ZEW Mannheim), Tim Kroencke, Felix Schindler
Macroeconomic News and Real Estate Returns

This paper extends recent evidence on the relationship between macroeconomic news announcements and common stock returns for the real estate market in the U.S. and the U.K. Similar to common stocks, we find economically large announcement returns for real estate of 0.17% in the U.S. and 0.05% in the U.K. These high average daily returns are not explained by the surprise component released on announcement days. We find that the returns of listed real estate in excess of (or orthogonal to) common stocks are positive on macroeconomic announce-ment days but virtually zero on all other days.

C2 - Agency & Bargaining in Housing Markets

Seow Eng Ong (National University of Singapore), Calvin Chua
Disruptive Innovation and Real Estate Agency: The Disruptee Strikes Back

The real estate agency industry has seen the emergence and growth of disruptive technology and innovation to the extent that real estate agents view search portals such as Zillow and Purplebricks as serious competition. In response to these threats, a major real estate agency in Singapore, OrangeTee launched a property agent review and rating program, called Property Agent Review (PAR), to provide better information on their agents for prospective clients. The PAR program provides a natural experiment to test the effect of informative reviews and ratings on agent performance in terms of commissions and transactions. This is done via a difference-in-difference approach, carefully controlling for observed agent characteristics and market conditions. This paper also analyses the informativeness of reviews.

Davin Wang (National University of Singapore), Boon Ping Chua, Seow Eng Ong
The role of word-of-mouth guidance and salience bias in property transactions: Evidence from the agent selection process

Conflicts of interests between principals and agents coupled with information inefficiencies inherent in the real estate industry create challenges in the agent selection process. Results from a survey study demonstrate that principals resort to traditional and electronic “Word-of-Mouth” (WOM / eWOM) strategies to overcome these informational inefficiencies to facilitate the agent selection process. WOM strategies used in the agent selection process are important because successful selection of a “good” agent reduces any subsequent contractual risk. However, reliance on WOM guidance, whether traditional or electronic, reinforces specific cognitive biases towards “salient” features in the subjective information that is shared. These features form the basis of a salient bias within principals towards the agent selection process.

Darren Hayunga (University of Georgia), Henry Munneke
Can Real Estate Agents Provide Expertise to Clients?

This article investigates the ability of real estate agents to trade on asymmetric information. Prior studies find that agents do not increase house prices for clients, and may even decrease transaction values. To test the asymmetric information hypothesis, we first focus on agents’ acquisition of residential property. Purchases offer direct evidence of their ability to trade on superior knowledge and bargaining savvy while in competition with all other market participants. We also examine the interactions between agents and other market participants using a bargaining model that mitigates omitted variable concerns in prior studies. The results demonstrate that agents are superior bargainers to individuals but not other investors. We also find that agents’ are able to buy low and sell high across the economic cycle from 2002 to 2013.

C3 - Ownership and lease

Kiat Ying Seah (National University of Singapore), Eric Fesselmeyer
Individual Payoffs and the Effect of Homeownership on Social Capital Investment

Are all social capital investments equal in the eyes of homeowners and renters? Presumably, social capital investments that lead to increases in home values provide stronger incentives for homeowners than renters. In contrast, for social capital investments that do not directly impact home values, one would not expect homeowners and renters to differ in their investment rates. In this paper, we test this hypothesis using confidential and detailed individual-level panel data from Los Angeles county. We estimate the effect of homeownership on social capital investment, i.e., participation in social-capital creating activities, using a bivariate probit model and fixed effects models that control for individual-specific, time-constant heterogeneity that would otherwise cause omitted variable bias. Each model addresses the endogeneity of homeownership differently with identification arising from different sources. We find strong evidence that homeownership increases the rate of participation in block meetings, a social capital investment that should affect property values, and find no homeownership effect on three other social capital creating activities that likely do not: volunteerism, participation in a local political organization, and participation in a civic group. The results suggest that the effect of homeownership on social capital investment depends on whether the returns to such investments accrue solely to homeowners.

Charles-Olivier Amédée-Manesme, **François des Rosiers (Université Laval),** Philippe Grégoire
Commercial leases, terms and options in the light of game theory

In this paper, a lease rate valuation model is developed whereby the market rent is subject to binomial movements. We then consider a commercial leasing game where different renters, large and small, find a location in different buildings owned by competing landlords operating under a rent negotiation process. When supply for office space exceeds demand from large firms, the latter always pay an advantageous rent. We demonstrate theoretically that small firms are better off in a building containing a large firm and thus will accept to pay a premium to lodge in such buildings rather than opting for a lower rent in a building occupied by small firms. The conditions leading to opposite results are also discussed in the paper. Using data from New York City, Chicago and Los Angeles, we discuss lease rates in light of the predictions of our theoretical model.

John Anderson (University of Nebraska)
Real Estate Ownership and Life Satisfaction in Transition Countries

In this paper I examine the relationship between home and other real estate ownership and self-reported life satisfaction of households in transition countries. I use the recently-released 2016 Life in Transition Survey data (LITS III) for this purpose. This dataset, collected by the European Bank for Reconstruction and Development (EBRD) includes survey responses of 51,000 households across 30 transition countries. The countries covered are former centrally-planned economies that have transitioned to more market-oriented economies. The housing stock of these countries has been privatized to varying degrees over the transition period. In addition, the breakup of collective farms has provided many households with land parcel titles, conferring real estate assets to them. Detailed questions on housing tenure and real estate asset ownership are used to determine whether reported life satisfaction is enhanced by ownership. The hypothesis tested in this paper is whether real estate ownership, including a primary residence, a second home, or land, contributes to life satisfaction. In the LITS III data, life satisfaction is measured on a 5-point scale. The survey data also provide a wide variety of household characteristics, including demographic information, income, and other key control variables needed to test the potential channels by which ownership may a¤ect life satisfaction. Consequently, the empirical modeling strategy is to estimate multinomial logit models to investigate the relationship between real estate ownership and life satisfaction. Empirical results from the variety of models estimated here strongly support the hypothesis that real estate ownership is associated with greater life satisfaction.

C4 - Green: 1

Bertram Steininger (RWTH Aachen University), Carolin Pommeranz
Price Discrimination in the Residential Housing Sector: Evidence from Green Buildings

We analyze whether higher energy efficiency labels of residential apartments are associated with higher rental price premiums that landlords use for price discrimination in the German rental housing market. Since we assume the pricing strategy to be based on grouping of tenants across local market segments, we double-sort our housing data according to the average rental price increase and the average purchasing power. Results from spatial regression models indicate that rental price premiums are obtained for high efficient and discounts for less efficient apartments, but premiums are significantly larger in market segments with high housing pressure and high purchasing power. This indicates that property sellers are able to transfer more consumer surplus in market segments with high competition and a high ability to pay due to their empowered position.

Rogier Holtermans (University of Southern California), Erdal Aydin, Piet Eichholtz
Split Incentives and Energy Efficiency: Evidence from the Dutch Housing Market

Among policy makers and academics, there is an ongoing discussion on the potential barriers to energy efficiency investments in the residential real estate market. One of the oft-mentioned potential barrier relates to the differing incentives between landlords and tenants. Since landlords do not pay the utility costs, under the condition that energy efficiency investments are not perfectly capitalized in the rental market, landlords may underinvest in energy efficiency. However, there is no clear evidence indicating whether this is the case. In this paper, using a large panel dataset from the Dutch housing market, we investigate whether tenure status affects the level of energy efficiency. Using information on nearly three million homes and their residents over six years, we track the over-time change in tenure status, from a rental to an owner-occupied home.

Avis Devine (University of Guelph), Erkan Yonder
Decomposing the Value Effects of Sustainable Investment: International Evidence

While some evidence exists on the benefits of sustainable investment for publicly traded real estate firms, little is known as to how such benefits materialize within the firm, especially on an international scale. We decompose the effects of sustainable investment on the value and performance of listed real estate investment firms across countries with and without mandatory environmental reporting on investment properties. In the US, a country without requisite reporting, we find that REITs with a more sustainable portfolio experience higher rental income, higher operating expenses, and lower interest expenses, increasing cash flows available for distribution to shareholders. These firms also carry lower systematic risk, are subject to less uninformed trading, and attract higher premiums to NAV. We find less nuanced results for real estate investment firms in the UK, which face mandatory environmental reporting. Our findings suggest that environmental reporting requirements may facilitate improvements in the environmental performance of properties and enhance transparency.

C5 - Credit, Securities, and Bonds

Stanimira Milcheva (University of Reading), Heidi Falkenbach, Holger Markmann

Decisions on Bond Issuances by Banks

While the market for Mortgage Backed Securities (MBS) in Europe largely dried up during the Global Financial Crisis (GFC), the markets for covered bonds and senior unsecured bonds remained active and provided resilient vehicles for long-term wholesale funding for European banks. We assess the long-term funding decision making process of 402 European banks between 2006 and 2014. We use a conditional probit model to assess the joint decision of a bank to issue each of the securities as compared to the remaining two options for long-term wholesale funding. The novelty of this paper lies in simultaneously accounting for the choice between the three securities implying dependence between the decisions to issue either instrument. Our findings suggest that illiquidity is the main driver to choose a covered bond over an MBS or a senior unsecured bond in every period. We find that excluding the GFC period, the preference of banks to issue an MBS over a covered bond or a senior unsecured bond is driven by credit risk concerns. The decision to issue senior unsecured bonds instead of secured bonds is related to the depository ratio of the bank as well as credit risk concerns. Those bonds seem to be an alternative to deposits in particular during crisis periods. Overall, the three long-term funding instruments seem to serve different purposes in liability portfolio management and can provide useful vehicles in efficiently distributing risks to investors.

Chyi Lin Lee (Western Sydney University), Ming-Long Lee, Simon Stevenson

An Examination of Low-Frequency Volatility of Real Estate Securities

Real estate securities have a number of distinct characteristics that differentiate them from stocks generally. Key amongst them is that under-pinning the firms are both real as well as investment assets. The connections between the underlying macro-economy and listed real estate firms is therefore heightened importance. To consider the linkages with the underlying macro-economic fundamentals we extract the 'low-frequency' volatility component from aggregate volatility shocks in 11 international securitized real estate markets over the 1990-2014 period. This is achieved using Engle and Rangel's (2008) Spline-Generalized Autoregressive Conditional Heteroskedasticity (Spline-GARCH) model. The estimated low-frequency volatility is then examined together with low-frequency macro data in a fixed-effect pooled regression framework. The analysis reveals that the low-frequency volatility of real estate securities has strong and positive association with most of the macroeconomic risk proxies examined. These include interest rates, inflation, GDP and foreign exchange rates. Differences between real estate securities and common stocks have also been identified.

Maarten Van Der Spek (Abu Dhabi Investment Authority)

The Impact of Leverage on Real Estate Loan Spreads

This article examines the relationship between the amount of leverage and the spread a borrower needs to pay on a real estate loan. Although this relationship has been analyzed on many occasions, a strong relationship has never been really proven due to the endogeneity of the loan-to-value choice. By introducing an instrumental variable that measures the quality of the underlying building and by focusing on one property type – the office market – it is possible to demonstrate that the influence of leverage on the spread is actually quite strong. Other important variables are the size of the property, cap rates, market risk measures, and loan-specific characteristics such as the debt service coverage ratio, maturity, prepayment, and whether the originator is a bank. I also prove that the quality of the underlying real estate is an important factor for lenders in setting the loan-to-value ratio.

C6 - Mortgage:2

Lok Man Michelle Tong (University of Reading), Gianluca Marcato

Strategy for Lenders by Modelling Competitions: Mortgage Default vs Restructuring and Prepayment vs Defeasance

We build a two-stage competing risk model for pricing four types of early termination options written on commercial mortgages: default vs restructuring and prepayment vs defeasance as two pairs of competitions. It is the first study to consider restructuring as a “competitor” with default. The key feature of our model is to introduce collateral underlying property market supply constraints into a property price process which would determine values of early termination options. Our simulations find out greater probability to restructure mortgages by replacing constant payment mortgages or interest only mortgages with graduated payment mortgages and to prepay in cash. We also prove that tightening property supply constraints pushes up values of default, restructuring and prepayment by pricing their analogous options: default (a series of compound European Call on Put options), mortgage restructuring (an exchange option between mortgages with different cash flow structures), prepayment in cash (a series of compound European Call on Call options), and defeasance (an exchange option of more liquid assets with less liquid ones) in different scenarios. Therefore, we suggest controlling property supply constraints as an alternative risk management measure for mortgage markets.

James Conklin, **Moussa Diop (University of Wisconsin),** Thao Le

The Importance of Servicer-Originator Affiliation in Loan Renegotiation

This paper presents evidence that affiliation between the mortgage servicer and the originator provides a mechanism to reduce information frictions inherent in debt renegotiation. We find that originator-servicer affiliation increases the likelihood of modification by 10%-23% using a large sample of delinquent securitized non-agency mortgages. Post-modification, affiliated loans are also 6.7% more likely to not return to severe delinquency within 12 months. Further examination reveals that affiliation affords servicers lower-cost access to borrower and loan information, thus improving their ability to implement effective debt restructuring strategies. In the absence of standardized information transmission between originators and servicers, information critical for debt renegotiation will be lost as banks disintegrate origination and servicing.

Timothy Dombrowski (Louisiana State University), Kelley Pace, Junbo Wang

Imputing Borrower Heterogeneity and Dynamics in Mortgage Default Models

The determinants of mortgage default have been an area of rising interest since the Great Recession of 2008. One of the distinguishing features of mortgage default analysis is that predictor variables are often only recorded at origination. However, variables such as credit scores and income vary over time. Our focus is to develop a ridge regression model to impute the dynamics of time-varying predictors and to capture unobservable borrower heterogeneity. After allowing for imputed dynamics and borrower heterogeneity, we find increased importance for full documentation relative to the loan-to-value ratio.

Session D

D1 - Housing & Crime

Anastasia Klimova (University of Technology Sydney), Timothy Balin, Adrian D. Lee
The Artful Dodger: Is Sydney's Underbelly Pick Pocketing Home Owners?

We estimate the impact of crime on property prices in Sydney metropolitan, by implementing a hedonic pricing two-stage least square model. Using comprehensive crime and real estate databases from 2000 to 2010, we hypothesise and find that, certain types of offences, violent crime and property crime have a significant negative impact on real estate prices. The negative impact of violent crime and property crime on house prices persists differently in different socioeconomic areas. The analysis revealed that crime is endogenous to house prices. This study has found that in Sydney metropolitan the effect of crime on real estate prices is relatively smaller compared to that found in recent studies which solve for endogeniety.

Amy Schwartz (Syracuse University), Ingrid Elle, Johanna Lacoe, Agustina Laurito, Patrick Sharkey
The Academic Effects of Chronic Exposure to Neighborhood Violence

We estimate the causal effect of repeated exposure to violent crime on test scores in New York City. We use two distinct empirical strategies; value-added models linking student performance on standardized exams to violent crimes on a student's residential block, and a regression discontinuity approach that identifies the acute effect of an additional crime exposure within a one-week window. Exposure to violent crime reduces academic performance. Value added models suggest the average effect is very small; approximately -0.01 standard deviations in English Language Arts (ELA) and mathematics. RD models suggest a larger effect, particularly among children previously exposed. The marginal acute effect is as large as -0.04 standard deviations for students with two or more prior exposures. Among these, it is even larger for black students, almost a 10th of a standard deviation. We provide credible causal evidence that repeated exposure to neighborhood violence harms test scores, and this negative effect increases with exposure.

Daniel McMillen (University of Illinois), Ignacio Sarmiento-Barbieri, Ruchi Singh
Do More Eyes on the Street Reduce Crime? Evidence from Chicago

Chicago's Safe Passage program attempts to ensure the safety of student traveling to and from schools by placing civilian guards along specified routes. The program was launched during the 2009-2010 school year and now serves 140 schools. We use data from more than 10 years of geocoded Chicago police reports and school level data to analyze the effects of the Safe Passage program on crime rates and the rate of absenteeism from schools. Our findings suggest that the program is an efficient and cost effective alternative way of policing with direct effects on crime and student's outcomes. Exploiting both spatial and temporal variation in the implementation of the program, we find that the presence of guards result in lower levels of crime, with violent crime declining by 14% on average. The rate of absenteeism is estimated to decline by 1.1 percentage points. We find no evidence of spillovers of crime to areas that are not along the Safe Passage routes.

D2 - Rental Housing Markets

Kathleen Kuerschner (Otto-von-Guericke University Magdeburg)

Immigration and Rental Prices of Residential Housing: Evidence from the Fall of the Berlin Wall

The fall of the Berlin Wall on 9th November 1989 sparked a mass exodus of East Germans to West Germany. This paper exploits the natural experiment provided by the unexpected disintegration of socialist East Germany to study the impact that immigration has on residential housing rents in recipient regions. Using a spatial correlation approach, annual district-level migration data for 1991 and 1992 and unique rental price indicators from Germany's major regional property market information system, we find strong evidence for a positive and sizeable effect of immigration on rental prices of residential housing in West German urban districts. A one percent population increase due to immigration is associated with an approximate increase in minimum and average category rents by 4.8 and 3.3%, respectively. Additional explorations that employ an IV approach based on various exogenous origin-region push factors related to the deteriorating economic conditions in East Germany yield estimates of even larger magnitude. These results suggest that immigration has important economic effects outside the labour market, traditionally the prime domain of economic enquiries into the consequences of immigration. Our findings cast doubt on the appropriateness of this bias in focus and provide first indications to surmise how the recent refugee crisis, analogously featuring a sizeable exogenous migrant inflow to Germany, may likewise affect local residential property markets. Albeit related empirical evidence on the latter migration phenomenon is still scarce, the present study points towards a crucial channel through which the mass arrival of refugees may affect local residents in destination regions.

Margarita Rubio, **Michal Rubaszek (National Bank of Poland)**

Rental market underdevelopment in Central Europe: Micro (Survey) and Macro (DSGE) perspective

The low share of the private rental market, observed in most Central European countries, including Poland, might be considered as a serious structural weakness. For that reason, in this paper we first explore the possible causes of this rental market underdevelopment by conducting an original survey among a representative group of 1005 Poles. We find that households' preferences, which are tilted towards owning, and strongly in influenced by economic and psychological factors are one of the main reasons behind the small size of the rental market in Poland. Next, using a macro DSGE model, we propose a set of reforms that aim at improving the efficiency in rental markets. We show that (i.) changing tenant protection regulations, (ii.) removing fiscal incentives for owning and (iii.) improving the standard of rental services would more than double the private rental share, and hence contribute to macroeconomic stability.

Zack Hawley (Texas Christian Univerrsity), Andrew Hanson, Geoffrey Turnbull

The Value of Community: Impact of the Cares Program on Rental Apartments

Renters of multi-unit housing structures report weaker ties to their community than other renters and owner occupants. In response to the lack of a sense of community in multi-unit rental structures, owners and managers of these properties have implemented planned programs to establish stronger community ties for residents. We examine the effect of one such program, the Cares program, on the rental price of apartments using both a standard hedonic approach as well as matching techniques designed to limit unobservable differences between treated and comparison units. Our results using propensity score matching and Mahalanobis distance measures to identify comparison units, suggest that monthly rents are between 5.7 and 9.8 percent higher for apartment units that offer the Cares program, indicating that renters are willing to pay a premium for a sense of community.

D3 - Office Markets

Benoit Lefebvre (Paris Dauphine University), Alain Coën, Arnaud Simon
Another Look at the Central London Office Market Risk Premium

The direct risk premium is one of the most elusive concepts in real estate. One of the main purposes of this study is to deeply investigate on the determinants of the premium for the Central London market between 2002-Q2 and 2015-Q3 using a Vector Autoregression model. We will also shed some lights on the role of central banks on the historical value of the risk premium. Indeed, since the global financial crisis central banks have used unconventional monetary policies increasing the quantity of money available in the economy and creating structural changes. To pick-up the relation between real estate and money supply, we have constructed a monetary index adapted to office market. We find that the lagged values of the vacancy rate, the employment in services, the FTSE 100 and the autoregressive parameter of the premium were the main determinants of the historical risk premium. We show also that office market reacts to a monetary rise through an upward adjustment of prices and of the premium. Finally we study the structural changes introduced by the monetary policy using a Structural VAR modeling and impulse response functions.

Ilir Nase (TU Delft), Hilde Remøy, Nick van Assendelft
The Vertical City Revisited. Rent Premiums and Vertical Sorting in Amsterdam's Tall Office Towers

This paper investigates the impact of vertical location and tenant sorting on commercial office rents within the tall office towers of Amsterdam. In economic geography and urban economics' approach to productivity tall buildings constitute an important, density-increasing typology that fosters agglomeration. Through spatiotemporal modeling 627 office rent transactions in 33 tall office buildings in Amsterdam rented during the period 2000-2016 this paper provides empirical evidence to the growing body of knowledge on the economics of height. The results indicate positive rent premiums for higher floor locations consistent across various specifications, strong premiums associated with reportedly high-output industry sectors and a weak presence of vertical sorting. The good performance of the OLS model with submarket fixed effects indicates the strong delineation of the office submarkets in Amsterdam.

Martijn Dröes (University of Amsterdam), Boris Ziermans, Philip Koppels
Information Asymmetry, Lease Incentives, and the Role of Advisors in the Market for Commercial Real Estate

Using a unique transactions dataset, this paper examines the determinants of lease incentives in the Amsterdam office market. The study focusses on the type of landlord involved (institutional/privately owned) and whether the tenant or landlord used an advisor to help negotiate the lease. The results show that an institutional landlord, ceteris paribus, offers 3 percentage points more incentives than a private owner. In addition, a landlord who uses the services of an advisor pays 9 percentage points less incentives. An advisor at the side of the tenant increases incentives by 7 percentage points. If both parties use an advisor there are no additional benefits in terms of lease incentives. Further results show a positive effect of accessibility, the lease term, and economic cycle (bust) on lease incentives. The results in this paper highlight the crucial role of market information, information asymmetry, and bargaining in the market for commercial real estate.

D4 - Mortgage: 3

Sariye Belgin Akcay (University of Reading)

Mortgage Markets and Institutions

This paper focuses on the institutional characteristics of the residential mortgage markets. The instutional quality is among the factors affecting the efficiency of financial intermediation in the mortgage markets, and hence the development of these markets, because the institutions influence the allocation of resources, and determine the rules of the game in the markets. The institutional characteristics of the mortgage markets include accessibility of credit information, variety of mortgage products, foreclosure procedures, types of contracts, and protection of the rights of the participants of mortgage markets etc. In addition, discrepancies in institutional quality contribute to differentiation efficiency of financial intermediation in the mortgage markets among the countries. However, although the extant literature on the mortgage markets have state the significance of the institutional characteristics of the mortgage markets, it is seen that there are few empirical studies to focus on the institutional features of the mortgage markets and to measure them. Thus, this paper's aim is to measure institutional quality of the mortgage markets and to create a benchmark for the strength of the financial intermediation in these markets by considering the European Union (EU) member countries. In order to achieve this, we develop a composite index. While constructing an index, two techniques are applied; factor analysis and scoring. The findings of the analysis show that the EU mortgage markets display heterogenous apperance due to the different institutional characteristics in addition to the other factors.

Jaime Luque (University of Wisconsin)

Cross-Border Residential Lending: Theory and Evidence from the European Sovereign Debt Crisis

We examine the roles of funding cost and capital on bank incentives to rebalance residential mortgage portfolios towards other geographical regions in the context of the European sovereign debt crisis, a period when sovereign bond yields rose to unprecedented levels for some (but not all) European countries. Our empirical analysis shows that banks with high funding costs were more likely to rebalance residential portfolios towards the safe region, whereas banks with low core Tier 1 capital were more likely to rebalance towards the risky crisis-hit region. Our general equilibrium model of cross-border mortgage lending rationalizes these findings.

Alla Koblyakova (Nottingham Trent University), Gianluca Marcato

A supply side story of Regional Variations in Mortgage Pricing and Lending Conditions

Nationwide housing finance policies may not represent the most effective way to develop segmented lending markets. Following previous studies highlighting the importance of regional variations in mortgage markets, we mainly contribute to the literature in three ways. Firstly, we compute mortgage rates with a newly proposed algorithm, which allows us to compare variable and fixed mortgage rates. Secondly, we employ a three-stage least squares and maximum likelihood estimation to a system of three reduced form simultaneous equations and jointly study mortgage pricing, lending conditions
and mortgage choice. Finally, we show that regional variations in incomes, house prices and employment rates may have generated a regional dimension in mortgage markets. Particularly we find that mortgage rates tend to be cheaper in London, South of England and Northern Ireland, while loan to value ratios remain low in Northern England, Scotland and Wales. Our results show relevant policy implications: the enforcement of regional provisions in governmental mortgage affordability programmes should be included; and the possibility of an asymmetric response to income and monetary policy shocks across regions should lead to the assessment of the monetary policy decision transmission mechanism.

D5 - Green: 2

Odilon Costa (Fundacao Getulio Vargas – EAESP), Franz Fuerst, Spenser J. Robinson, Wesley Mendes-da-Silva
Are Green Labels More Valuable in Emerging Real Estate Markets?

This article investigates how emerging real estate markets price information from voluntary environmental certification bodies. In addition to the relatively smaller penetration of green buildings, developing countries typically exhibit weaker environmental performance due to limited capacity to enforce existing regulation. Therefore, we exploit the role of internationally accredited third party audit schemes in building valuation. Instead of merely comparing labelled and non-labelled properties – as done by previous research, we also examine pricing discrepancies related with the intention to certify (registration), but failure to achieve actual certification in a timely manner. Our results systematically indicate that labelled properties in emerging markets yield a larger green premium than their peers from developed countries. Findings also suggest that failed applicants do not receive any green premiums and may be subject to penalties, depending on specification, beyond that of other non-green buildings. These findings provide further evidence of the relevance of market diffusion and economic governance linked to the implicit pricing of environmental labels.

Piet Eichholtz, **Rogier Holtermans (University of Southern California)**, Juan Palacios Temprano
The Impact of Academic Research: Energy Efficiency Information and Residential Property Valuation

Many Dutch rental housing providers have strong ambitions towards the greening of their housing stock. The question is whether external property appraisers take the potential value effects of better energy performance into account. If so, this would provide an incentive towards sustainability investments by these rental landlords. We analyze external valuations by three valuation firms of 43,809 dwellings owned by a large Dutch rental housing provider in two years: 2010 and 2015. To determine the energy efficiency of these dwellings we employ Energy Performance Certificates. Our findings show a significant change in the behavior of external property appraisers. For the 2010 valuations, we do not find a statistically significant effect of energy efficiency. However, we do find that better label quality leads to higher external valuations in 2015. The effect is up to 10 percent when we compare an A-labeled dwelling with a D-labeled one. The 2015 valuations are in line with the transaction price premiums found for (Dutch) housing.

Paloma Taltavull (University of Alicante), Juan Carlos Perez, Perez Raul, Mora Raul
Green premium for Spanish housing market. A GLS evidence from climatic areas

This paper estimates the green premium for selected housing markets in Spain. It uses the information contained in the Energy Certificates to identify the green characteristics associated to a particular housing transaction. Using matching techniques, the database is fused with another two: the Cadaster database which gives full information about the building characteristics and a valuation database which provides information from the market related to listed properties including their price and attributes. The result is a large georeferenced database where the green premium can be tested. The database relates seven Spanish provinces with microdata of more than 200 thousands housing transactions (in rent and ownership) and more than 40 specific attributes. The analysis is based on hedonic definition where energy consumption and green label is used as a further attribute. The paper applies two methods to better estimate green premium (OLS and IV-instrument method in order to control for endogeneity) and provides the results by climatic areas which has been defined along the analysed territory. Results suggest that green premium varies by climatic area, then failing to discriminate by them could give biased results.

D6 - Listed and Nonlisted Real Estate

Arvydas Jadevicius (INREV), Stephen Ryan, Matthias Thomas, Henri Vuong

The past is not a good predictor of the future, or is it? Another look into performance persistence among core open end European non-listed real estate funds

Despite the familiar caveat that past performance is no guarantee of future performance, persistent performance is real, significant, and should not be ignored. Clearly there is no guarantee that the pattern will be sustained, but a good track record increases he probability of a successful investment. The challenge lies not so much in showing that performance persistence exists but in demonstrating under which circumstances it does so. While widespread, it is not consistent across all core open end European real estate funds. It is not limited to a particular sector or style. It exists among funds of all sizes and for all levels of gearing, and it is applicable across various countries. Nonetheless bottom quartile funds demonstrate greater stickiness in performance than top quartile funds. Top quartile funds have a tendency to 'drop out' quite quickly; indicating that stellar returns produced in a short-time period (maximum of four years) can occur but sustaining that performance for a long period of time is more difficult. On the other hand, bottom quartile funds maintain their position for longer (up to seven years). Greatest performance stability is observed in the top half of funds. In fact, they can maintain their position for up to 11 years on average, which can also be stretched to 12 years in some sub categories. In contrast, the bottom half performers can hold onto their position for an average of nine years. Irrespective of how funds are grouped or ranked, there is one commonality across all of them. Performance persistence does not last forever. It tends to fall away over time. Further, the pattern of decay is broadly similar for bottom quartile and bottom half performers. The pathways analysis which looked closer at the paths a fund takes as it transitions from one 'state' to another showed that certain pathways were a lot more travelled than others, and some pathways were not travelled at all. Persistency in performance would be of little interest to investors if the excess returns available were very small, but that is not the case. Investors in funds that were 'pure top half performers' earned excess returns1 of 2.3% on average, depending on which category they are in. Investors who were invested in 'pure bottom half performers' earned returns that in one case (UK domiciled funds) were over 10% less annually than the average return within that peer group. Sustaining persistent performance over a longer period of time is difficult and funds eventually drop out of any category. In other words, the 'neither', neither pure top nor pure bottom, category expands as funds drop out of the other persistent performance categories. Eventually, all persistence reduces to a very low number, and can potentially reduce to zero. This brings us to an interesting conclusion: while track record is important, sticking to a top quartile performing fund for a prolonged period of time can result in sub-par returns. Therefore it would be better to focus on funds that are solid top half performers.

Jean-Christophe Delfim (University of Geneva), Martin Hoesli

U.S. Real Estate Risk Factors

This research focuses on macroeconomic risk factors pertaining to the various types of real estate exposure, i.e. direct, listed and non-listed investments. We apply panel model techniques which make it possible to take advantage of both the cross-sectional and time series dimensions of our data. Much emphasis is placed on comparing sensitivities to risk factors across the types of real estate exposure. This is important in order to assess whether indirect (listed and non-listed) exposures react in the same way as direct investments to the macroeconomy and how well such investments replicate direct real estate behavior. The empirical analyses are conducted using U.S. data from 1984Q1 to 2016Q2. Allocations both by sector and geography are considered. For indirect exposures, we also control among other things for size and leverage. The various types of real estate exposure generally respond similarly to risk factors with GDP, money supply, construction costs, expected inflation, and expected economic activity positively impact returns, while the term and credit spreads, unemployment, and unexpected inflation negatively affect returns.

Charles-Olivier Amédée-Manesme (Université Laval), Philippe Bertrand, Jean-Luc Prigent
On the effectiveness and usefulness of portfolio insurance strategies for REITs

Portfolio insurance refers to financial strategies that aim to protect a portfolio against downside market risk, while allowing an investor to benefit from potential increases in the market. Thus far, no study has examined such strategies in a real estate context and, as a result, there is no consensus on their effectiveness in this asset class. This study evaluates the performance of the constant proportion portfolio insurance and option-based portfolio insurance techniques for the real estate investment trusts market. The effectiveness of the strategies is tested on historical returns of the NAREITs index for the period January 1999–June 2016. We evaluate the performance of each strategy as a pure investment tool. Overall, the results indicate that both portfolio insurance strategies protect the insured amounts almost perfectly, as well as allowing the portfolio to benefit from part of a market increase. Furthermore, gap risk and cash-lock effects are discussed, based on the results. Lastly, robustness is confirmed using a block-bootstrap simulation.

Session E

E1 - Housing Development: 2

Anthony Orlando (University of Southern California), Christian Redfearn
An Econometric Analysis of Housing Supply Dynamics in the United States, 1959-2015

Building permits, housing starts, and completed units are typically used interchangeably in the housing supply" literature, but they are distinct phases of the development and construction process|and they follow distinct data-generating processes. This paper estimates the relationship between them in three ways: by estimating and comparing the lag structures at different geographic levels using a vector autoregression, by measuring the degree of cointegration among the three variables, and by plotting the errors over time to detect systematic variation over the business cycle. The results are (1) a new understanding of how permitting and construction delays differ regionally and temporally, (2) an improved measure of housing quantity for future research on supply, and (3) a simple forecasting model that can improve the decisions of investors and policymakers in the future.

Geert Goeyvaerts, **Sven Damen (KU Leuven)**
Mobility, investment and property values: it's all in the timing

We study the impact of household mobility on house values at the micro-level and show that a higher mobility rate is not associated with lower property values. The results from our two-step empirical strategy points to the timing of improvement expenditures as one of the key mechanisms at play. Using data from the American Housing Survey, estimates from a standard Tobit model and a censored regression model with unit fixed effects indicate that households invest significantly more right after they have moved into a new dwelling, while expenditures drop in the period before they move out. The size of the coefficients on these mobility decisions indicate that an increase in the mobility rate will have a positive effect on the house's value if it has a significant impact at all. The latter hypothesis is confirmed in the second step of our analysis in which we directly estimate the impact of residential mobility on the change in the units' real market values.

Moussa Diop, **Stephen Malpezzi (University of Wisconsin),** Jarjisu Sa-Aadu
Housing and Urban Development in (mostly Sub-Saharan) Africa: Lessons Learned, Lessons Not Learned

Africa's 57 countries contain 1 billion people; it's the fastest growing region of the world and is forecast to hit 2 billion within 35 years. We examine details of supply and demand for housing, the spatial distribution of population, and a range of housing and urban policies, as well as financial and macroeconomic policies. A model is developed to explain the problem of "the omitted middle" of many African housing markets. More general issue of governance and institutions are also examined. A cross country database of key variables is described and analyzed. The paper concludes with a discussion of the research and policy agenda for the next decade.

Siu Kei Wong (The University of Hong Kong), Ling Li
The pricing of first-hand real estate: empirical investigation

Empirical research in real estate generally does not, or needs not, distinguish between first and second-hand markets because transactions are generally made between individual buyers and sellers. The Hong Kong apartment units market is different – its first-hand market is dominated by a small number of sellers (developers). Through examining the pricing of first-hand units relative to second-hand units, this study critically tests the theory of market power against the theory of demand uncertainty. We find that, contrary to anecdotal evidence, first-hand units are consistently sold at a discount, and the discount is slightly bigger for developers with high market share. This, along with other tests based on holding cost, rejects market power in favor of demand uncertainty. This study further examines the substitution between first and second-hand units. We find that developers face competition not just from substitutes from other developments but also face some self-competition from within their own development.

E2 - House Prices & Externalities

Erasmo Giambona, **Rafael Ribas (University of Amsterdam)**

The External Cost of Prostitution

We investigate the externalities of prostitution by quantifying the value that households pay to reside close to a Red Light District (RLD) in Amsterdam. To measure willingness to accept prostitution, we first rely on a dynamic regression discontinuity design that compares the value of houses on the RLD side of a canal to similar houses on the other side over time. Houses on the RLD can sell at a discount as high as 25%, but the discount disappears where former brothels were closed. To test whether external costs are offset by the economic gains from the sex industry, we estimate the net effect of closing the entire RLD of another Dutch city, Utrecht. House prices increased by 5% on average following this event. In both cities, the closing of brothels is also associated with a drastic reduction in crime rates. Our findings suggest that prostitution is costly due to the social nuisance that it creates.

Nicolas Duran (University of Groningen), Paul Elhorst

The effect of small earthquakes on housing prices in the north of the Netherlands: a spatio-temporal-similarity approach

We analyzed the effect of earthquakes on housing prices with data on more than 200,000 transactions from the three most northern provinces of the Netherlands over the period 1993-2014. We fit hedonic models accounting for the spatio-temporal structure inherent to individual transactions data. Additionally, we account for heterogeneity at different sub-market levels: nearby and previously sold houses (continuous sub-market) and neighborhood (discrete sub-market). We construct three spatio-temporal matrices which weight nearby houses sold in the past by similarity. Moreover, we measure the extent to which neighbor houses are similar employing an index computed by realtors in the Netherlands to set asking prices. We find a negative and significant effect from earthquakes on housing prices, which would be severely biased had spatial effects not been considered.

Radoslaw Trojanek (Poznań University of Economics and Business), Michał Głuszak, Justyna Tanaś

The Tale of Two Cities: The Effect of Urban Green Spaces on House Prices in Warsaw

In the paper, we analyzed the impact of proximity of urban green areas on apartment prices in Warsaw. We have used the data set contained in 43075 geo-coded apartment transactions for the years 2010 to 2015 in Warsaw. In this research, the hedonic method was used in OLS, GLS and QR models. We found strong evidence that close proximity to park is positively linked with apartment prices. On average presence of urban green area within 100 band from the apartment increases the price of dwelling by 3,4 to 4,6%. The effect of park/forest proximity on house prices is more significant for new apartments. We found that proximity to park is particularly important (and has higher implicit price as the result) in the case of buildings constructed after 1989. Modern residential buildings are located smaller lots, and built accordingly to the density maximization principle (both in terms of floor area ration and building coverage ratio). As the result green areas within gated communities is often limited, and can be treated like a club good, available only for residents. In that context, proximity to publicly available green area outside the gates, only within a short walking distance is highly beneficial and translates into significantly higher price of subject apartments.

Mike Langen (Maastricht University), Erdal Aydin, Piet Eichholtz, Nils Kok
Getting Low from Getting High? The External Effects of Coffeeshops on House Prices

The legalization of cannabis is a hotly contested policy topic. While beneficial to some, the outlets dispensing cannabis may create a negative externality for others. This paper studies the external effects of coffeeshops – Dutch cannabis sales facilities – on local house prices. We use the distance to coffeeshops as a measure for proximity to externalities. We first employ a standard hedonic framework, estimating the effect of coffeeshops on the market value of nearby homes. Since the location of coffeeshops may be endogenous to ex-ante neighborhood quality, we also employ the exogenous closure of coffeeshops due to school proximity as an instrument. The results show a proximity discount decreasing with distance to coffeeshops, ranging from -1.5 percent to -3.6 percent. For an average home, this translates into a financial amount of up to €10,000. The presence of a coffeeshop also leads to a significant lengthening of the time on the market for nearby homes. The robustness check Shows that coffeeshop closings resulting from an exogenous shock lead to an increase in house prices.

E3 - House Price Dynamics: 2

Larisa Fleishman (Israeli Central Bureau of Statistics), Orli Furman, Alla Koblyakova
Effect of Subjective Expectations on House Price Dynamics and Housing Demand - Israeli Case
Larisa Fleishman

House prices are important determinants for the economic cycle dynamics, the performance of the financial system, households wealth and the distribution of wealth within the economy. Resulting in the welfare of the major proportion of households, housing prices through the benefits of owner occupation significantly impact on the nation's living standards and quality of life. It is important, therefore, to deeper understand what underlying factors impact house price dynamics and housing demand. Thus, house prices are influenced by supply and demand factors having longer-term influence and shorter-term effects.

A limited attention has been paid to the empirical investigation of the effect of subjective valuation on housing demand and house price dynamics. Using the household level data extracted from the second wave of the Longitudinal Panel Survey (LPS) files (2013), this study explores whether the price expectations (as reflected in subjective house values) affect housing demand and demand for mortgage debt. The model comprises from the three reduced form equations. In stage 1, a separate hedonic model equation was estimated on the base of sale transaction data (2013) provided by the Israel Tax Authority (ITA). In addition to prices of dwellings sold during a given period, these ITA files include an assortment of property characteristics. Then, the model's estimates were used to calculate the value of the same dwellings for which the LPS provided data on their physical characteristics and the subjective valuations. In stage 2, employing the results of the foregoing phase, a system of the two reduced form simultaneous equations have been estimated employing two stage least squares estimation technique. Applying the differences between the subjective valuation and the estimated dwelling value, and including regional dummies in econometric estimates, estimations also explore whether there are regional variations in the impact of subjective valuations on housing demand and the demand for mortgage debt. Exploring the possibility of the simultaneous determination of subjective valuations and housing demand, this paper empirically detects inseparability of housing/mortgage demand and subjective expectations of house price.

Dorinth van Dijk (University of Amsterdam)
Regional constant quality housing market liquidity

The average marketing time of sold properties is used frequently by practitioners and policymakers as market indicator. This figure might be misleading as the average time on market only considers properties that are sold. Furthermore, traded properties are heterogeneous. Especially in markets where properties trade infrequently, these problems are more severe. In this article, a methodology is provided that allows for the construction of constant quality housing market liquidity indices in thin markets. It is shown that the average marketing time overestimates market liquidity in bad times and underestimates market liquidity in good times. Furthermore, constant quality liquidity seems to lead the average time on market. The indices show that not only illiquidity is higher during busts, but liquidity risk is also higher. Additional results show that setting a relatively high list price results in a higher marketing time, but this effect is not equal across markets and over time. The effect is much stronger during busts. Finally, the constructed liquidity indices show a strong commonalty with transaction prices.

Daniel Ruf (University of St. Gallen)
Agglomeration Effects and Liquidity Gradients in Local Rental Housing Markets

This paper empirically analyzes the relation between rental housing market liquidity and urban agglomeration effects. Online market platforms resemble limit order books, where landlords provide and potential tenants remove liquidity. Using listed rental offers, I compute measures of market liquidity. Local liquidity decreases with increasing distance to the nearby located agglomeration center, leading to a negative liquidity gradient. More distant local rental markets are exposed to a higher liquidity risk. Illiquid rental housing markets are related to rental price discounts, offer lower capitalization rates for investors, and lead to a systematically higher time on the market of individual properties.

Paloma Taltavull (University of Alicante), Jens Lunde, Michael White
The Role of Liquidity in the Transmission of Volatility Across Housing Markets

Periods of high volatility in house prices increasingly occur synchronously in the housing markets of different countries. Such contagion, or volatility spillovers are often captured by ARCH type models and “GARCH models have been used extensively to analyze cross-border volatility spillovers in asset markets” (Beirne et al, 2009, p8). While markets in different countries may show periods of correlation in performance, i.e., house price movements, this by itself does not necessarily imply contagion. Contagion can be taken to refer to the unanticipated transmission of shocks and as such can be differentiated from correlations that may exist in more normal market circumstances. Kaminsky et al, (2009) “refer to contagion as an episode in which there are significant immediate effects in a number of countries following an event” (p55) They contrast this with situations where effects on a number of countries take time, labelling the latter as a ‘spillover’. Masson (1998, 1999) refers to three types of contagion caused by the simultaneous impact of common shocks, spillovers due to inter-country interdependencies and pure or shift contagion resulting from sudden movements, e.g., the withdrawal of liquidity following a crisis in one country that then impacts on other countries. Interdependencies between countries in, say, liquidity flows are the main channels through which crises are transferred (Forbes and Rigobon, 2000 & 2002). Brunnermeier and Pedersen (2009) discuss the role of liquidity and postulate a liquidity correlation channel that can generate contagion. Hoesli and Reka (2015) test for contagion between real estate and financial markets finding contagion between stocks and securitised real estate in the United States.

In this paper we examine contagion in house prices in selected OECD countries following the sub-prime crisis beginning in 2007. Unlike models using financial data, our data frequency is lower and is quarterly rather than monthly or daily. This reflects data availability and the slower transactions process for complex (multiple attribute) housing assets compared to more liquid financial assets. Our analysis builds upon correlation and we use the dynamic conditional correlation model developed by Engle (2001, 2002), Engle and Sheppard (2001), and Tse and Tsui (2002) – DCC-

GARCH. The conditional variance is first estimated via the ARCH model. Next a univariate GARCH is estimated to which is added a dynamic correlation structure. We also conduct a test for symmetry in response to positive and negative economic shocks using a TGARCH model.

E4 - Homeownership in Germany

Michael Voigtländer (Institut der Deutschen Wirtschaft Köln)
The impact of changing user cost on tenure choice – a case study for Germany

Disproportionally increasing rents as well as the ongoing period of historically low interest rates made owner occupied housing highly favorable in the recent years. Based on the seminal approach by Poterba (1984), we first calculate the user costs of housing for 402 German counties and independent cities. In a consecutive step, we empirically test whether the sharp increase in rents and the drop in user costs has a significant impact on peoples demand behavior regarding owner occupied housing. Preliminary results suggest that home ownership is preferred over renting as user costs decrease even if we take account for a wide range of control variables. As a reversal in the interest rates is currently not expected, these findings have wide-ranging implications for the future development of the German housing market and people’s asset accumulation.

Tobias Schmidt, **Julia Le Blanc (Deutsche Bundesbank)**
Do homeowners save more? – Evidence from the Panel on Household Finances (PHF)

In this paper we analyse the impact of property ownership on the saving behaviour of households. We are particularly interested in investigating whether homeowners save more than renters or not. A related question is whether mortgage payments and other regular savings are substitutes or complements for German households. To answer these questions we use a large cross-sectional dataset on individual households’ finances and employ a matching estimator. We find that households owning property and repaying mortgages do save more than renters, if contractual savings and mortgage payments are summed up. However, the difference between regular savings flows of renters and owners is small and insignificant. Owners do not seem to substitute contractual savings with mortgage payments.

Panagiota Tzamourani (Deutsche Bundesbank), Deniss Bezrukovs
Homeownership in Germany: it there an East-West divide?

The study explores differences in homeownership rates and home equity levels between East and West Germany and decomposes the effect of household characteristics from the impact of the economic environment on the observed differences. The analysis is based on the two waves of the Panel on Household Finances (PHF) survey, a representative household panel survey conducted by the Bundesbank.

We use a probit regression model to estimate a housing demand function. Our main explanatory variable of interest is the regional indicator East-West, while we control for household demographic characteristics, income and wealth, and also for house prices and the population size of the household residence area. Information on the way of acquiring the residence allows us to exclude from our analysis homeowners that inherited their home and thus control for the effect of inheritances on housing demand. Home equity is modeled with a Heckman type regression model using inheritance status as a selection variable. We further use the Oaxaca decomposition method to identify the contribution of each of the household and area characteristics used in our model to explain the variability in homeownership rates and home equity.

Our analysis finds that most of the overall difference in homeownership and in home equity between the two regions is attributed to the overall economics environment rather than the observed household or area characteristics. Furthermore, despite many regional and demographical variables in East Germany favouring higher homeownership, the likelihood of owning the primary residence remains smaller compared to West Germany.

Philipp Marek (Deutsche Bundesbank)
The development of home ownership rates in Germany across age groups

In the early 2000s, the German real estate market in Germany experienced relatively moderate growth rates and was very stable in comparison to the housing market in other European economies. As outlined by Voigtländer (2014), cautious real estate financing and a strong rental market may be considered as major forces behind the stable development of real estate prices, but also behind the low ownership rates. According to the ECB's survey on Household Finances and Consumption (HFCS), the German home ownership rate was 44%, which corresponds to the lowest value in the entire Euro area with an average homeownership rate of 60% (HFCN, 2016). Over the last couple of years, the German housing market has become very dynamic with particularly strong price increases in urban agglomerations. Given this environment, this paper aims to assess the consequences of the most recent development on real estate decisions across socio-economic groups. Therefore, two household surveys provide valuable insights on the behaviour of individuals with respect to their socioeconomic background. The German Socio-Economic Panel (GSOEP) is applied to describe this development for a period of 25 years (1990-2015), while the German part of the ECB's Household Finances and Consumption survey allows a comparison to the development in other Euro Area countries for the period between 2010 and 2014. The aggregate home ownership rate in Germany has increased from 38% in 1990 to about 45% in 2014.

E5 - Property Price Indices

David Geltner (Massachusetts Institute of Technology), Anil Kumar, Alex van de Minne
Riskiness of Real Estate Development: A Perspective from Urban Economics & Option Value Theory

Conventionally, investment in real estate development is viewed as being riskier than investment in stabilized property assets. In this paper we define a new construct for urban economic analysis which puts this conventional wisdom in a new light. We call the new construct, the Development Asset Value Index (DAVI). The DAVI is a value index for newly-developed properties (only) in a geographical property market. It tracks longitudinal changes in the Highest & Best Use (HBU) value of locations as reflected in gross physical capital formation, and it reveals developer and landowner behavior taking advantage of the optionality inherent in land ownership. In particular, the DAVI reflects developers' use of the timing flexibility in the exercise of the call option represented by the right (without obligation) to (re)develop the property. We empirically estimate the DAVI for commercial property (i.e., central locations) and compare it with the corresponding traditional transaction price based hedonic Property Asset Price Index corrected for depreciation (PAPI), in the same geographical market. We believe that the difference primarily reflects the realized value of timing flexibility in land development. For our test cities of New York and Los Angeles, we find that the DAVIs display greater value growth and are smoother and less cyclical than their corresponding PAPIs. This suggests that development may be riskier than stabilized property investment only due to leverage effects. We also find that development density (Floor/Area Ratio) is an increasing function of the location value.

Douglas McManus (Freddie Mac)
Continuous House Price Tiers in Repeat Sales Estimation

This paper estimates a model where a home's price tier in one period continuously affects the house price growth in the subsequent period. This paper uses estimates of continuously tiered house price indexes at the state and county levels to examine market segmentation during the boom and bust phases of the recent housing cycle. These empirical findings support the prediction of Liu, Nowak, and Rosenthal (2016) that lower tiered properties experienced a larger drop in price during the recent market bust. The main methodological contributions of this paper are defining a continuous house price tiering specification, detailing a data generating process consistent with this specification, and proposing a methodology that allows for consistent estimation of tiered house price growth. Two key technical innovations in this paper are specifying the repeat sales model in terms of growth rather than an index and using simulated least squares to address the path dependence of growth on the house price level.

Marc Francke, David Geltner, **Alex van de Minne (Massachusetts Institute of Technology)**, Robert White
Real Estate Index Revisions in Thin Markets

Price indices from repeat sales models are subject to revision. When a new period of transaction data becomes available and is used in the repeat sales model, all past index values can potentially be revised. These revisions are particularly substantial for commercial real estate, because transactions are relatively scarce and properties heterogeneous. This paper focuses on thin markets and presents multiple specifications of the repeat sales model that reduce revisions considerably. More specifically, we specify the periodic returns as a first order autoregressive process, use the periodic returns of an aggregate index as an explanatory variable for more granular indices, and allow the variance parameters to be time-varying. As a result, overall revisions are reduced by more than 50%.

Daniel Melser (Monash University)
Florida's Boom and Bust: Sample Selection in Home Price Indexes

The repeat sales index is a widely used method for constructing home price indexes. Yet, because it only uses prices for properties that sell twice or more and because it assumes a single price trend, we argue it is susceptible to sample selection bias. We outline a novel approach to modeling repeat sales transactions. This allows a home's features to influence price movement and enables us to investigate problems related to selection bias. We quantify the impact of these issues using a virtual census of data for the state of Florida's housing market from 2002-15. We find significant differences between a composition-adjusted index and the standard index. This indicates that sample selection plays an important role. We also find some additional effects of selection even after this. These factors primarily impact on the cyclicality of prices. As a result we argue that the standard repeat sales index greatly exaggerated the extent of Florida's boom and the depth of the bust. We conclude home prices were almost a third less volatile than was conventionally appreciated. The outlined approach shows how repeat sales indexes may be adjusted to account for sample selection bias.

E6 - Spatial, Transport, Sorting

Sotirios Thanos (University of Manchester), Maria Kamargianni, Andrea Schäfer
Car travel demand: spillovers and asymmetric price effects in a spatial setting

A novel analysis framework for the spatial aspects of car travel, measured by vehicle miles travelled (VMT), is introduced in this paper. The specification of a dynamic Spatial Durbin Model (SDM) enables the analysis of VMT spatial spillovers and diffusion between neighbouring areas. The framework is extended by a variable decomposition approach that captures potential asymmetries and hysteresis in a spatial setting. A panel dataset is compiled at sub-regional level, based on official car mileage recordings in England and Wales. In addition to the inelastic long-run responses of VMT to fuel price (-0.10 to -0.17) and income (0.074) changes, the results illustrate asymmetries and hysteresis in price elasticities with a distinct and significant spatial component. The impact magnitude on VMT from a number of factors, such as alternative fuel use, fuel deserts in rural areas, road network and car fleet characteristics, is also estimated. The results are consistent with the car use saturation hypothesis through the positive impact of motorisation rate to VMT. The negative effect of public transport infrastructure on car travel is only significant in the spatial models. The findings of this paper underline the importance of the spatial dimension when analysing VMT data and provide significant insights to key policy debates.

Eric Fesselmeyer (National University of Singapore), Kiat Ying Seah
Neighborhood Segregation and Black Entrepreneurship

We examine the causal effect of neighborhood segregation on black entrepreneurship. We address neighborhood sorting by analyzing city averages and omitted variable bias by instrumenting for segregation using historical railroad configurations. We find that segregation has a significant positive effect. Additionally, in order to minimize the effect of cross-city sorting, we use a narrower sample constructed from outcomes of young adults and find a similar effect. Our findings are important because historically entrepreneurship has been an avenue out of poverty, and entrepreneurship has been promoted as a way to decrease welfare and unemployment.

Jia-Huey Yeh (Jiangxi University of Finance and Economics)
Spillover Effects of the Infrastructure Spending in China

This paper investigates the impact of the infrastructure spending on the economic growth as well as the real estate investment. The empirical framework is designed to address the endogenous feedback effects using panel vector autoregressive (panel VAR) models for the 30 provinces of the whole country and for each of the three economic regions in China from 1999 to 2014. We found some significant effects of infrastructure spending on production and real estate supply. We also found some evidence of a social expenditure effect. The regional differences are further explored to examine spillover effects related to the presence of neighbouring externalities. Generally, the spillovers from infrastructure appear to be more relevant for central and western regions. Overall, the results are reasonably robust across several model specifications and samples. The results indicate that public expenditure has some impacts and shows interesting spatial patterns. These findings highlight important implications for local government policy, spatial planning and the role of public expenditure in local economic and real estate development.

Jan Rouwendal (VU University Amsterdam), Nathalie Picard
Gentrification in the Paris metropolitan area

In this paper we study changes in the population of the owner-occupied housing stock in the Paris metropolitan region. We do so by comparing the characteristics of buyers and sellers of houses in geographical units using information collected by French notaries.

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