The January 2015 Weimer School session was well-attended with over 40 participants, including faculty, Weimer School Fellows and invited guests. Hoyt Fellows Jack Coyle (Coyle, Lynch and Company), Andy Davidson (Andy Davidson & Company, Inc.) and Hugh Kelly (Real Estate Economics) also attended the session.

Completing the second year of their requirement to become Weimer School Fellows and presenting the results of their research were Dr. Xudong An (San Diego State University), Dr. Thomas Davidoff (University of British Columbia), Dr. Morris Davis (Rutgers University), Dr. Fernando V. Ferreira (University of Pennsylvania), Dr. Michael J. Seiler (The College of William and Mary) and Dr. Yildiray Yildirim (Syracuse University).

Friday’s session presenters and presentations were as follows: Dr. Michael J. Seiler (The College of William and Mary), “The Role of Prospect Theory in Explaining the Perceived Moral Reprehensibility of Strategic Mortgage Default;” Dr. Yildiray Yildirim (Syracuse University), “The Impact of Tenant Diversification on Commercial Mortgage Spreads and Default Rates;” Dr. Morris Davis (Rutgers University), “Default When Current House Values Are Uncertain;” and Dr. Xudong An, “Behavioral Shifts Over the Business Cycle: New Evidence from Residential Mortgage Default.”

Saturday’s session began with Dr. Thomas Davidoff (University of British Columbia) presenting "Reverse Mortgage Demographics and Collateral Performance," followed by Dr. Fernando Ferreira (University of Pennsylvania) with "A New Look at the U.S. Foreclosure Crisis: Panel Data Evidence of Prime and Subprime Lending;” and Dr. Andra Ghent (Arizona State University) with her presentation on "Security Design and Trading Mortgage-Backed Securities." Saturday’s session concluded with "The Repeat Time-on-the-Market Index," presented by Dr. Paul Carrillo (The George Washington University).

The final day of the session, Sunday, featured three more first year Weimer School fellows who will be finishing in 2016. Dr. Jay Hartzell (University of Texas-Austin) made his presentation on "What Drives Managers' Decisions to Enter New Markets? Evidence from Real Estate Firms." Dr. Andy Naranjo (University of Florida) followed with his presentation entitled "Public Versus Private Commercial Real Estate Returns: MSA Allocations, Property Selection, and Performance Attribution." Dr. Paul Willen (Federal Reserve Bank of Boston) was the final presenter with "Passthrough in the Mortgage Market: From TBA to YSP." Summaries of presentations from those who provided them can be found on pages 2-4 of this newsletter.
January 2015 Weimer School Session Presentations
In Summary

"Behavioral Shifts Over the Business Cycle: New Evidence from Residential Mortgage Default"
Dr. Xudong An
(San Diego State University)
with Yongheng Deng (National University of Singapore) and Stuart Gabriel (University of California - Los Angeles)

In this paper, Dr. An and his coauthors, Dr. Deng (NUS) and Dr. Gabriel (UCLA) provide new evidence of cyclical variation in a mortgage default option exercise. For a given level of negative equity, borrower propensity to default rose markedly during the financial crisis and among hard-hit metropolitan areas. Shifts in borrower behavior were material to the crisis: simulation results show that changes in borrower behavior were more salient to crisis-period defaults than were adverse shocks to home equity. Analysis of time-series and panel data indicates the importance of local economic conditions, consumer sentiment, and federal foreclosure mitigation programs in explanation of default behavior change. Difference-in-difference tests further corroborate unintended consequences of the Home Affordable Modification Program (HAMP) in boosting borrower default option exercise. Findings provide new insights relevant to loan underwriting and credit risk management among originators, investors, insurers, and regulators of the $10 trillion U.S. mortgage market.

"The Impact of Tenant Diversification on Commercial Mortgage Spreads and Default Rates"
Dr. Yildiray Yildirim
(Syracuse University)
with Brent Ambrose (Pennsylvania State University) and Michael Shafer (Providence College)

Dr. Yildirim and his coauthors, Dr. Ambrose and Dr. Shafer, estimate an empirical model of commercial mortgage spreads that incorporates tenant characteristics, using the percent of square footage occupied by a property’s largest tenant as a proxy for the degree of tenant diversification. They find that mortgages on properties with a highly diversified tenant base do not receive lower spreads than single-tenant properties, but that mortgages on properties with low to moderate levels of tenant diversification have spreads that are up to 5.8 basis points lower than mortgages on single-tenant properties. The interest rate discount given to mortgages on properties with low to moderate levels of tenant diversification disappears when the largest tenant’s lease expires before the loan matures. Finally, we find that the likelihood with which a mortgage defaults increases as the degree of tenant diversification increases. This implies that properties with higher degrees of tenant diversification should have higher spreads.

"Default When Current House Values are Uncertain"
Dr. Morris J. Davis
(Rutgers University)
with Erwan Quintin
(University of Wisconsin-Madison)

Dr. Davis and his coauthor, Dr. Quintin, specify a new model of homeowner mortgage default. In their model, homeowners do not know the current price of their home until they sell; rather, they maintain an unbiased guess of the price and optimally update this guess as new information, such as the sale price of similar homes, is observed. Compared to the predictions of a model where homeowners know the current price with certainty, uncertainty about the price considerably reduces the probability homeowners default even when the current price is likely substantially less than the mortgage balance. The authors estimate model parameters using data on self-assessed house prices, house-price indexes and mortgage defaults. They find uncertainty about the current level of house prices reduced defaults for a cohort of prime mortgages issued in 2006 by 25 percent in 2010 and 2011.

"Reverse Mortgage Demographics and Collateral Performance"
Dr. Thomas Davidoff
(University of British Columbia)

Home Equity Conversion Mortgage (HECM) data seem to confirm two concerns about these federally insured loans offered to older US homeowners. First, originations are rare, consistent with a familiar disinterest in extracting home equity through sale among older owners, even those with low wealth. Second, moral hazard and adverse selection appear to operate on HECM’s implicit home price insurance. Demographics mitigate both concerns.

- Continued on page 3 -
Consistent with greater demand among those with low wealth, HECM loans are more common, more responsive to price appreciation, and more intensively used in neighborhoods where large fractions of homeowners are black and Hispanic, and where incomes and property values are below metropolitan averages.

The correlation between minority share of homeowners and late-2000s home price busts explains most observed selection into HECM on price appreciation within metropolitan areas. Selection on price movements and demographics explains away roughly half of poor collateral performance in HECM loans that has been attributed elsewhere to strategic undermaintenance.

"The Role of Prospect Theory in Explaining the Perceived Moral Reprehensibility of Strategic Mortgage Default"

Michael J. Seiler
(The College of William & Mary)

Defaulting on a mortgage is widely viewed as being immoral, but no prior study has examined the intervening roles of Prospect Theory and default intent. We find that the public is significantly more accepting of a defaulting borrower who earns a zero or negative return on his investment than one who earns a positive return. This moral viewpoint changes significantly when the default is strategic in nature. Defaulters are judged significantly less harshly by those who more so blame the lender for the current financial crisis, those who have previously strategically defaulted, and males. When asked to suggest a “morally appropriate” settlement offer to lenders to resolve the distressed debt, beyond the prospect theory and default intent remaining significant, we further find that those who more so blame the lender, those who view their home as more of an investment rather than a consumption good, those who have previously strategically defaulted, those with lower income levels, and minorities suggest significantly lower settlement offers.

"A New Look at the U.S. Foreclosure Crisis: Panel Data Evidence of Prime and Subprime Lending"

Fernando V. Ferreira
(University of Pennsylvania)

Dr. Ferreira and Dr. Gyourko create a nationwide panel of 42 million home ownership sequences that includes data from 96 MSAs, extends from 1993-2012, and covers prime borrowers and all-cash owners, not just subprime borrowers. They find a surge in foreclosures among prime borrowers that lags that for subprime borrowers by about a year. The panel regressions show that the ‘subprime effect’ in foreclosures is reduced by 60% with the inclusion of timing of mortgage origination and current LTV. In a household fixed effects specification that effectively controls for wealth and employability we find negligible differences between the prime and subprime probabilities of foreclosure.

"Very Low Frequency Trading and Security Design"

Andra C. Ghent
(Arizona State University)

with Rossen Valkanov (University of California, San Diego) and Kumar Venkataraman (Southern Methodist University)

Dr. Ghent and her coauthors, Dr. Valkanov and Dr. Venkataraman, investigate how security design affects trading using a unique dataset that merges comprehensive information on trading in structured products with security characteristics. A one standard deviation increase in security complexity is associated with a 5 percentage point (7%) decrease in the probability that a security trade during our 40-month sample (May 2011-September 2014), 2.6 (22%) fewer trades, 1.2 (21%) fewer trading days, and $13 million (48%) less in total trading volume. The average trading cost in their sample is 41 basis points and a one standard deviation increase in complexity raises trading costs by 5 basis points (12%).
In Summary… (Cont.)

"Public Versus Private Commercial Real Estate Returns: MSA Allocations, Property Selection, and Performance Attribution"

Andy Naranjo  
(University of Florida)  
with David Ling (University of Florida)  
and Ben Scheick (University of Florida)

Public and private commercial real estate returns often exhibit significantly different risk-return characteristics, and understanding these differences is important for the efficient allocation of capital and for effective investment strategies. Dr. Naranjo and his coauthors, Dr. Ling and Dr. Scheick, find that after adjusting for differences between public and private markets in financial leverage, property type focus, and management fees, passive portfolios of unlevered core REITs outperform their private market benchmark by 49 basis points (annualized) over 1994-2012. Their bivariate VAR results suggest REIT returns possess information on future private market returns, but no real estate specific information. They also document significant differences in geographic allocations of property portfolios between public and private markets. Adjusting private markets for differences in geographic concentrations with public markets, they find that core private market performance falls. Their attribution analysis further shows that property selection within MSA allocation is important.

"The Repeat Time-On-The-Market Index"

Paul E. Carrillo  
(George Washington University)  
with Ben Williams (George Washington University)

Dr. Carrillo and his coauthor, Dr. Williams, propose two new indices that measure the evolution of housing market liquidity. A key feature of both indices is a) their ability to control for unobserved heterogeneity exploiting repeat listings, b) their use of censored durations (listings that are withdrawn from the market), and c) their computational simplicity. The first index computes proportional shifts in the home sale hazard rate. The second estimates the relative change in median marketing time. The indices are computed using almost two million listings in 12 US urban areas. Results suggest that both accounting for censoring and controlling for unobserved heterogeneity are key to measuring housing market liquidity.

Congratulations to the Class of 2015 Weimer School Fellows!!

L-R: Xudong An, Thomas Davidoff, Morris Davis, Fernando Ferreira, Michael Seiler and Yildiray Yildirim
The theme of the 2015 Hoyt Fellows program on Thursday, May 14th (the day before the Weimer School session begins) is "The Impact of Technology on Commercial Real Estate." Has technology allowed owners to do a better job identifying tenants and maximizing rent? How are retailers trying to optimize their supply chain with tracking systems and in-store beaconing and using technology to try to maximize sales per square foot? How have buildings gotten “smarter”? How is the use of 3D technology starting to be used to help optimize the building design as well as market the space to prospective tenants?

A group of experts has been assembled to discuss these kinds of questions for retail, apartments, office buildings and hotels. Also note that the Friday morning Weimer School session will include a discussion of the use of “big data” and crowdfunding for CRE that we expect to be of interest to Hoyt Fellows.

A new feature of the Hoyt Fellows program this year will be a time slot for a roundtable discussion among all Hoyt Fellows of whatever is on your mind! What are the key trends and issues of which we should all be aware? Weimer School Fellows are encouraged to participate. The collective wisdom can be powerful!

Thursday, May 14, 2015 - Hoyt Fellows Meeting

** Breakfast buffet at 8:30 a.m. **  ** Session commences at 9:00 a.m. **

The Impact of Technology on Commercial Real Estate

Session Chair: Jeff Havsy (CBRE EA)

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tr>
<td>9:00 a.m.</td>
<td>&quot;Apartments&quot;</td>
<td>David Barker (Barker Apartments)</td>
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<td>9:45 a.m.</td>
<td>&quot;Office&quot;</td>
<td>Matt Toner (CBRE)</td>
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<td>10:45 a.m.</td>
<td>&quot;Retail&quot;</td>
<td>Steven Laposa (Alvarez &amp; Marsal (A&amp;M)</td>
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<td>11:30 a.m.</td>
<td>&quot;Hotel&quot;</td>
<td>Jamie Lane (PKF Hospitality Research)</td>
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<td>12:15 p.m.</td>
<td><em><strong>Lunch</strong></em></td>
<td>Ted Stratis (The Pavonis Group)</td>
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<td>1:15 p.m.</td>
<td>&quot;3D Technology and CRE&quot;</td>
<td>Hoyt Fellows and Weimer School Fellows</td>
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<td>2:15 p.m.</td>
<td>&quot;Roundtable Discussion of Current Events&quot;</td>
<td>attending</td>
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<td>3:30 p.m.</td>
<td>Hoyt Fellows LLC Business Meeting</td>
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** Reception - 5:00 p.m. - Hilton Singer Island Resort Island Boardroom - Suite #800 **

** Hoyt Fellows Dinner - 6:30 p.m. (Hoyt Fellows only) **
The May session of the Weimer School program is chaired by Henry Pollakowski (Harvard University) and Norm Miller (University of San Diego) and this year's theme is "Big Data and Spatial Issues in Real Estate." Postdoctoral Honorees will present on Sunday.

Thursday, May 14, 2015

***5:00 pm - Welcome Reception***

***Hilton Singer Island Oceanfront Resort - Island Boardroom (Suite #800)***

Friday, May 15, 2015

Weimer School Session Convenes

All Hoyt Fellows are invited to participate.

Program Agenda:

Big Data and Spatial Issues in Real Estate

***8:30 am - Breakfast buffet - Weimer School participants (includes Hoyt Fellows)***

***Session commences at 9:00 a.m.***

Session Chair, Dr. Norman G. Miller (University of San Diego)

Crowdfunding and Big Data

9:30 a.m.            "Crowdfunding"            Dr. Richard S. Swart
                     (University of California-Berkeley)
                     Dr. Jeffrey D. Fisher
                     (Homer Hoyt Institute), and
                     Dr. Michael Sklarz
                     (Collateral Analytics)

10:20 a.m.          "Big Data & Real Estate"

12:00 p.m.          *** Lunch ***

12:50 p.m.          "International Urbanization
                     and Suburban Sprawl: A Study Using Satellite Images"
                     Dr. Stephen Sheppard
                     (Williams College)

1:50 p.m.           "Big Data & Real Estate"

3:00 p.m.           Weimer School Faculty Meeting

**6:00 pm - Reception - Hilton Singer Island Resort Island Boardroom - Suite #800**

**All participants, spouses and guests**

** 7:30 pm - Dinner at Grand Asian Crazy Buffet (optional)**

**Participants, spouses and guests welcome**
All Hoyt Fellows are invited to participate.

***8:30 am - Breakfast buffet - Weimer School participants (includes Hoyt Fellows)***
***Session commences at 9:00 a.m.***

Spatial Issues in Real Estate: Application of Large Data Sets
Session Chair, Dr. Henry Pollakowski (Harvard University)

9:10 a.m.  "A Dynamic Model of Housing Supply: Optimal Timing and Size of Single-Family Housing Construction for the San Francisco Bay Area Using Transaction Data & Vacant Parcel Data"
Dr. Alvin Murphey (Arizona State University)

10:10 a.m.  "Starbucks Gradients and the Rent/Price Ratio"
Dr. Jacob Cosman (University of British Columbia)
with Dr. Thomas Davidoff (University of British Columbia)

11:00 a.m.  "There Goes the Neighborhood: Local Price Diffusion Over the Cycle"
Dr. Jeffrey Zabel (Tufts University)

11:50 a.m.  ***Lunch***

12:40 p.m.  "Do Choice Schools Break the Link Between Public Schools and Property Values? Evidence from Housing Prices in New York City"
Dr. Ingrid Gould Ellen (New York University)

1:40 p.m.  "Effects on Property Values and Development Patterns of Historical District Designation in New York City"
Dr. Keren Mertens Horn (University of Massachusetts-Boston)
with Dr. Amy Ellen Schwartz (New York University) and Dr. Ioan Voicu (New York University)

**6:00 pm - Reception - Hilton Singer Island Resort Island Boardroom - Suite #800**
**All participants, spouses and guests**  **Dinner on own**

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**Sunday, May 17, 2015**

***Breakfast buffet at 8:30 a.m.***
***Session commences at 9:00 a.m.***

Weimer School Postdoctoral Honoree Research Presentations

9:00 a.m.  "TBD"
Dr. Lu Han (University of Toronto)

Dr. Desmond Tsang (McGill University)

***Lunch***

11:30 a.m.  All participants, spouses & guests welcome

***Adjournment***
## Summer 2015 Events

### MAY

**Homer Hoyt Institute**  
Hoyt Fellows Meeting / Weimer School Session  
**May 14-17, 2015**  
Hoyt Center  
760 US Highway 1, Suite 300  
North Palm Beach, FL  
May 14 (Hoyt Fellows Mtg.)  
May 15-17 (Weimer School session)

**AREUEA**  
43rd Annual National Conference  
**May 28-29, 2015**  
NAHB Headquarters  
1201 15th Street NW  
Washington, DC

### JUNE

**ICSC**  
RECon The Global Retail Real Estate Convention  
**May 17-20, 2015**  
Las Vegas Convention Center and Westgate Las Vegas Hotel  
Las Vegas, NV

**NCREIF**  
Summer Meetings 2015  
**June 24 - 26, 2015**  
The Drake Hotel  
Chicago, IL

### JULY

**AsRES (Asian Real Estate Society)**  
20th Annual Conference  
**July 6-9, 2015**  
Fairmont Hotel  
Washington, DC

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