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## EDUCATION

**Ph. D. in Economics**, George Washington University, May 2011 (expected).  
Dissertation: *Essays on the Dynamics of Regional Housing and Labor Markets*  
Committee: Anthony Yezer (chair), Frederick Joutz, Donald Parsons  
**M.A. in Economics**, George Washington University, 2008  
**B.A. in Economics**, Whitman College, 2005

## RESEARCH INTERESTS

Regional Economics, Urban Economics, Applied Econometrics, Forecasting

## DISSERTATION ESSAYS

“Housing and Labor Market Dynamics in Growing Versus Declining Cities”  
“Industrial Diversity and Regional Dynamics”  
“Evaluating Alternative Methods of Forecasting House Prices: A Post-Crisis Reassessment,” *Under Review*.  
GWU Research Program on Forecasting Working Paper Series, 2010-004.

## WORKING PAPERS

“Energy Footprint of the City: Effects of Urban Land Use and Transportation Policies,” with Feng Liu and Anthony Yezer, *Under Review*.  
“Is Newer Better? Penn World Table Revisions and Growth,” with Simon Johnson, Arvind Subramanian, and Chris Papageorgiou, *Under Review*.  
NBER Working Paper 15455, 2009.

## PROFESSIONAL EXPERIENCE

<b>Research Assistant</b> for Anthony Yezer	June 2007-Present
<b>Guest Lecturer</b> for Tara Sinclair, undergraduate econometrics	Fall 2009-Present
<b>Instructional Assistant</b> to Katie Foreman, Principles of Economics	Fall 2009-Spring 2010
<b>Consultant</b> , International Monetary Fund	May 2009-Aug. 2009 June 2008-Aug. 2008
<b>Research Assistant</b> , International Monetary Fund	Jan.2007-Sept. 2007
<b>Consultant</b> , Benchmark Forecasts	Jan. 2006-Dec.-2006
<b>Research Assistant</b> , U.S. Senate Committee on Finance	Aug. 2005-June 2006

## CONFERENCE ACTIVITIES

Presenter, GWU Forecasting Seminar	February 24, 2011
Poster Session, AREUEA Doctoral Session	January 6, 2011
Discussant, AREUEA Mid-Year Meetings	June 4, 2010; June 4, 2009
Presenter, GWU Microeconomics Seminar	Nov. 9, 2010; Mar. 10, 2010; Oct. 8, 2008; Feb. 27, 2008
Presenter, NBER Summer Institute CRIW Workshop	July 14, 2009
Presenter, Princeton Economic Development Seminar	Dec. 10, 2008
Presenter, AREUEA Mid-Year Meetings	May 27, 2008

## FELLOWSHIPS AND AWARDS

Graduate Research Fellow, Center for Economic Research, George Washington University	2007-Present
Doctoral Dissertation Research Grant, Department of Housing and Urban Development	2010-2011
Early Doctoral Student Research Grant, Department of Housing and Urban Development	2007-2008
Penrose Memorial Scholarship, Whitman College	2001-2005
Rocky Mountain Section PGA Scholarship	2001

## PROGRAMMING SKILLS

Matlab, STATA, OxMetrics, Eviews, LATEX, HTML, ASP, PHP

## SERVICE AND MEMBERSHIPS

Founder and Co-Organizer, GWU Graduate Research Seminar Series	2010-present
Founder and Co-President, GWU Economics Graduate Student Association	2009-2010
American Economic Association, American Real Estate and Urban Economics Association	

## REFERENCES

Professor Anthony Yezer (dissertation advisor)  
Department of Economics, George Washington University  
E-mail: yezer@gwu.edu, Phone: (202) 994-6755

Professor Fred Joutz (dissertation committee)  
Department of Economics, George Washington University  
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Simon Johnson (co-author)  
Sloan School of Management, Massachusetts Institute of Technology  
E-mail: sjohnson@mit.edu, Phone: (617) 290-9618

Professor Tara Sinclair (teaching reference)  
Department of Economics, George Washington University  
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## ABSTRACTS

### *Dissertation Essays*

Essay 1: “Housing and labor market dynamics in growing versus declining cities”

This paper develops a regional equilibrium model motivated by Glaeser and Gyourko's (2005) urban decline hypothesis. The durability of the housing stock creates differences in the elasticity of housing supply in growing versus declining cities. These differences cause local demand shocks to have larger effects on employment and smaller effects on wages and house prices in growing or stable cities relative to declining cities. Empirical results suggest labor market hysteresis is conditional on a city's recent history of growth or decline. In growing cities, temporary local demand shocks cause housing construction which leads to permanently higher levels of employment but no changes to local prices. In declining cities, local demand shocks induce very little construction and thus exhibit small long-run employment effects, but permanent price effects remain.

Testing hypotheses about the effects of demand shocks on regional economies has been limited by the inability to identify demand shocks at the regional level. This problem is solved by relying on an export price index (EPI), an index of prices local producers receive when exporting goods and services outside of the region. The empirical approach involves estimating a near-VAR for each of 352 U.S. cities with eight variables separated into three block-exogenous groups: national variables, the EPI, and local variables. Characteristics of the city-level impulse responses are then estimated as a function of an index of urban decline, which is found to have a significant effect on the nature of labor and housing market responses.

Essay 2: “Evaluating Alternative Methods of Forecasting House Prices: A Post-Crisis Reassessment”

This paper compares the performance of different forecasting models of California house prices. Multivariate, theory-driven models are able to outperform atheoretical time series models across a battery of forecast comparison measures. Error correction models were best able to predict the turning point in the housing market, whereas univariate models were not. Similarly, even after the turning point occurred, error correction models were still able to outperform univariate models based on MSFE, bias, and forecast encompassing statistics and tests. These results highlight the importance of incorporating theoretical economic relationships into empirical forecasting models.

Working papers

“Energy footprint of the city: effects of urban land use and transportation policies,” with Feng Liu and Anthony Yezer.

Urban land use and transportation policies have dramatic effects on the spatial distribution of residences and commuting patterns of large cities. Some of these policies have been analyzed using numerical urban simulation models. At the same time, the U.S. Energy Information Administration’s Residential Energy Consumption Survey has allowed researchers to investigate the relation between household energy consumption and characteristics of housing units.

This paper links these two lines of inquiry so that simulation results on the implications of land use and transportation policies for the spatial form of cities can be used to compute implications for energy consumption. The resulting Urban Energy Footprint Model, “UEFM”, allows one to trace the implications of a change in land use zoning or transportation through its effects on housing markets and residential location to the consequent changes in energy use for residential and commuting purposes – i.e. to understand the energy footprint of transportation, housing, and land use policies. Accordingly, the UEFM provides, perhaps for the first time, a link between urban and energy economics.

“Is Newer Better? Penn World Table Revisions and Growth,” with Simon Johnson, Arvind Subramanian, and Chris Papageorgiou, *Under Review*

NBER Working Paper 15455, 2009

Vox.EU, <http://voxeu.org/index.php?q=node/4339>, December 7, 2009.

This paper sheds light on two problems in the Penn World Table (PWT) GDP estimates. First, we show that these estimates vary substantially across different versions of the PWT despite being derived from very similar underlying data and using almost identical methodologies; that this variability is systematic; and that it is intrinsic to the methodology deployed by the PWT to estimate growth rates. Moreover, this variability matters for the cross-country growth literature. While growth studies that use low frequency data remain robust to data revisions, studies that use annual data are less robust. Second, the PWT methodology leads to GDP estimates that are not valued at purchasing power parity (PPP) prices. This is surprising because the *raison d’être* of the PWT is to adjust national estimates of GDP by valuing output at common international (purchasing power parity [PPP]) prices so that the resulting PPP-adjusted estimates of GDP are comparable across countries. We propose an approach to address these two problems of variability and valuation.