

# MATT DELVENTHAL

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## EDUCATION

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**Ph.D. in Economics**, Universitat Autònoma de Barcelona, expected 2018

DISSERTATION: *Income and Population Across Space and Time*

THESIS COMMITTEE

**Nezih Guner** (chair)  
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**Jesús Fernández-Villaverde**  
University of Pennsylvania  
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**Tim Kehoe**  
University of Minnesota  
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Visiting scholar at University of Pennsylvania, May and September 2017

Visiting scholar at University of Minnesota, October 2017

**M.A. in Economics**, Universitat Autònoma de Barcelona, 2014

**B.S. in Economics**, University of Missouri–Saint Louis, 2010

## RESEARCH INTERESTS

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Macroeconomics, Economic Geography, Trade, Development

## TEACHING EXPERIENCE

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- 2017      Macroeconomics II (Graduate), Universitat Autònoma de Barcelona  
Teaching Assistant for Prof. Luis Rojas
- 2016      Dynamic Programming (Graduate), Universitat Autònoma de Barcelona  
Teaching Assistant for Prof. Nezih Guner
- 2016      Matlab Refresher (Graduate), Universitat Autònoma de Barcelona
- 2015      Dynamic Programming (Graduate), Universitat Autònoma de Barcelona  
Teaching Assistant for Prof. Nezih Guner
- 2015      Intro to Matlab (Graduate), Universitat Autònoma de Barcelona

## PROFESSIONAL EXPERIENCE

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- 2013-17 Research Assistant for Nezih Guner, MOVE, UAB  
2011-12 Human Capital Analyst, ICF International, Washington, D.C.  
2005-09 Psychological Operations Sergeant, U.S. Army  
2004-05 Business English Teacher, International Communication Institute, Guadalajara, Mexico

## RESEARCH PAPERS AND WORKS IN PROGRESS

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*The Globe as a Network: Geography and the Origins of the World Income Distribution* (Job Market Paper)

How important are falling transport costs for patterns of population and income growth since 1000 CE? To answer this question, I build a quantitative dynamic spatial model with an agricultural and a non-agricultural sector, and endogenous fertility, migration, innovation and technology diffusion. In this model there exists an endogenous threshold for global transport costs, which is characterized by a simple network statistic. If transport costs are above this threshold, the world converges to a Malthusian steady state. If transport costs fall below this threshold, the world economy enters a process of sustained growth in population and income per capita. Taking this model to the data, I divide the globe into 2,249 3 degree by 3 degree quadrangles. I assign each location an agricultural potential determined by exogenous climate and soil characteristics. I infer bilateral transport costs by calculating the cheapest route between each pair of locations given the natural placement of rivers, oceans and mountains. I calibrate the model so that in the year 1000 the world is in a Malthusian steady state. I then drop the cost of water and land transport exogenously in a way that is consistent with historical evidence and track the endogenous evolution of population and income until the year 2000. Qualitatively, this exercise generates slow but accelerating growth in both population and income per capita for the first 800 years, an abrupt takeoff in growth after 1800 CE with Europe in the lead, and a large increase in the dispersion of income per capita after 1800 CE. Quantitatively, the model accounts for 55% of the variation in population density across 10 major regions in 1000 CE, 44% of the variation in income per capita across regions in 1800 CE, and is able to generate 43% of the overall dispersion in income per capita in 2000 CE.

*Demographic Transitions Across Time and Space* (with Nezih Guner and Jesús Fernández-Villaverde)

The demographic transition, characterized by a reduction in mortality and fertility from initially high rates to much lower ones, is a process that almost every country on Earth has undergone or is undergoing. Is this process the same for countries that transitioned early, such as those in Western Europe, and those who are transitioning now, or are there important differences? Using a novel econometric method, we find that later demographic transitions have been occurring progressively faster, and that countries have been entering the transition at progressively lower levels of GDP per capita over time. We propose a simple model of parental investment in education, skill-biased technical change, and technology diffusion that explains these facts.

*Trade Across Stages of Development* (with Juan Carlos Conesa and Pau S. Pujolàs)

Details coming soon.

## PRESENTATIONS

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- 2017 SAEe Barcelona.\* EWMES Barcelona.\* Minneapolis Fed. SAET, Faro. University of Pennsylvania. Philadelphia Fed. III Winter Macroeconomics Workshop in Bellaterra.
- 2016 North American Meetings of the Regional Science Association, Minneapolis. EEA meetings, Geneva. Université de Toulouse. ENTER Jamboree, Madrid. Barcelona GSE PhD Jamboree. Workshop on Dynamic Macroeconomics, Vigo. Stockholm University.

Discussions: ENTER Jamboree, Mannheim, 2015. Barcelona GSE Ph.D. Jamboree, 2015.

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## PROFESSIONAL SERVICE

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Organized Barcelona GSE Ph.D. Jamboree (2016). Organized Student Workshop series at Universitat Autònoma de Barcelona (2014-2015). Student coordinator of ENTER network at Universitat Autònoma de Barcelona (2014-2015).

## ADDITIONAL EDUCATION

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### **Diploma in Modern Standard Arabic**

John F. Kennedy Special Warfare Center and School, 2006

### **Teaching English as a Foreign Language (TEFL) Certificate**

International Teacher Training Organization, Guadalajara, Mexico, 2004

## SCHOLARSHIPS, HONORS AND AWARDS

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- 2014-18 La Caixa Severo Ochoa Doctoral Fellowship
- 2012-14 Fellowship Formació de Personal Investigador - UAB
- 2011 Simon Kuznets Essay Award for best undergraduate quantitative economics paper
- 2009 First Place, PSYOP Language Biathlon
- 2007 Meritorious Service Medal (for outstanding service as an Arabic-English interpreter and cultural analyst) (U.S. Army)
- 2007 Army Achievement Medal (for role in developing a new strategic communications method) (U.S. Army)
- 2006 Distinguished Honor Graduate, U.S. Army Psychological Operations Advanced Individual Training

## LANGUAGES

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English (native), Spanish (fluent), Arabic (fluent), Catalan (fluent), Turkish (basic)