

# Econ 590 M3 Regional Economics

Spring 2023

M 12:30-15:20  
215 David Kinley Hall

Instructor: Geoffrey J.D. Hewings

Office: Institute of Government and Public Affairs, Room 209, 1007 W Nevada, Urbana  
333-4740

[hewings@illinois.edu](mailto:hewings@illinois.edu)

Office Hours: By appointment (set up a meeting after class or via e-mail)

Text:

**Regional Economics**, Roberta Capello (2<sup>nd</sup> Edition, Routledge, 2015)

**Webpage:** Canvas

**Regional Economics** focuses on the way in which subnational economies within a country (such as states) operate and function. Attention will be focused on how the regional economy works, its dependence on local and imported goods and services, the role of regional business cycles and the ways in which regions compete. Regional analysis aims to uncover the dynamics of location decision-making of both firms and individuals and the impacts these decisions have on the structure and structural changes of regional economies. Special attention will be directed to issues surrounding the role of households as providers of labor and consumers and the way their location decisions affect the growth and development of regional economies. The final parts of the course will address regional policies and equity-efficiency trade-offs, drawing on analysis in the US, EU and selected developing economies.

## Evaluation

There will be a written mid-term and a comprehensive final. In addition, students are expected to complete a paper based on empirical analysis of a regions or regions within a country of their choice. The paper should be viewed as an opportunity to explore more deeply the structure, role and function of regional economies, drawing on published data.

Mid-term: 30%

Final: 50%

Paper: 20%

## Instructor

Geoffrey J.D. Hewings has been at Illinois since 1974; he holds appointments in the departments of Agricultural and Consumer Economics, Economics, Geography, Urban & Regional Planning and in the Institute of Government and Public Affairs. In addition, between 1989-2016, he was the Director of the Regional Economics Application Laboratory a unit that focuses on the development and use of models for impacts analysis, forecasting and policy decision-making. Hewings has also worked on urban and regional projects in Bangladesh, Indonesia, Japan, Korea, Canada, Australia, and most recently in Brazil, Chile, Spain and Colombia.

## **Course Policies:**

**Disability Services:** This course will accommodate students with documented disabilities. Please refer to the Disability Resource Guide (<http://www.disability.uiuc.edu/resourceguide>) for more information and inform the instructor of any requests at the beginning of the semester.

**Academic Integrity:** The UIUC Student Code (<http://www.admin.uiuc.edu/policy/code>) requires all students to support academic integrity and abide by its provisions, which prohibit cheating, fabrication, plagiarism, and facilitation of these and related infractions.

## Course Outline

January 23

### **Introduction: Regional Macroeconomics, Regional Income Analysis, Regional Science, Regional Economics, Economic Geography**

Intellectual underpinnings for the course

*Reading*

Capello: *Introduction*

Stef Proost and Jacques-François Thisse, (2019) “What can be learned from spatial economics,” *Journal of Economic Literature*, 57(3) 575-643

David Vines and Samuel Wills (2018) “The rebuilding macroeconomic theory project: an analytical assessment,” *Oxford Review of Economic Policy*, 34, (1–2), 1–42.

January 30

### **Location Theory from von Thünen to the New Economic Geography**

*Reading*

Capello: *Chs. 1, 2 and 3*

February 6

### **Theories of Regional Growth – From Borts & Stein to Barro & Sala-i-Martin**

The perfectly competitive regional economy Role of imperfect competition, agglomeration  
Convergence/divergence – multi-level considerations (US, EU, Latin America)

*Reading*

Capello: *Chs 4, 5 and 6*

Sergio J. Rey and Brett D. Montouri (1999) “US Regional Income Convergence: A Spatial Econometric Perspective,” *Regional Studies*, 33 (2) 143-156

Bernard Fingleton, (2000) “Convergence: International comparisons based on a simultaneous equation model with regional effects,” *International Review of Applied Economics*, 14(3), 285-305

February 13

### **Modeling the Regional Economy I– Two-sector to Multi-sector Models**

*Reading*

Capello: *Ch 5*

February 20

### **Modeling the Regional Economy II– Linked Models – Demo-Economic**

*Reading*

Capello, *Ch 5, 6*

Kijin Kim, Kurt Kratena and Geoffrey J.D. Hewings (2015) “The extended econometric input- output model with heterogeneous household demand system” *Economic Systems Research*, 27, 257-285

Kijin Kim and Geoffrey J.D. Hewings (2018) “Bayesian estimation of labor demand by age: Theoretical consistency and an application to an input-output model,” *Economic Systems Research* 31, 44-69.

Peter W.J. Batey (2018) “What Can Demographic–Economic Modeling Tell Us about the Consequences of Regional Decline?” *International Regional Science Review*, 41(2) 256-281

February 27

### **From the Circular Flow of Income to CGE models, Spatial CGE, Dynamic Models**

#### *Reading*

Johannes Bröcker (1998) “Operational spatial computable general equilibrium modeling,” *Annals of Regional Science*, 32, 367–387.

Euijune Kim, Geoffrey Hewings and Hidayat Amir, (2017) “Economic Evaluation of Transportation Projects: an Application of Financial Computable General Equilibrium Model,” *Research in Transportation Economics*, 61, 44-55

Yizhou Zhang and Geoffrey J.D. Hewings (2019) “Fiscal Decentralization – A Cautious Tale,” *Regional Science Policy & Practice*, 11(1), 173-187

### **Mid-Term exam: March 6**

March 13 Spring Break (no class)

March 20

### **Equilibrium, Disequilibrium – modeling unexpected events**

#### *Reading*

Yasuhide Okuyama, Geoffrey J.D. Hewings and Michael Sonis, (2004) “Measuring the Economic Impacts of Disasters: Interregional Input-Output Analysis using the Sequential Interindustry Model,” In Y. Okuyama and S. Chang (Eds.), *Modeling Spatial and Economic Impacts of Disasters* Heidelberg, Springer.

Jungyul Sohn, Geoffrey J.D. Hewings, Tschangho John Kim, Jong Sung Lee and Sung-Gheel Jang, (2004) “Analysis of Economic Impacts of an Earthquake on Transportation Networks,” In Y. Okuyama and S. Chang (Eds.), *Modeling Spatial and Economic Impacts of Disasters* Heidelberg, Springer.

Andre F.T. Avelino and Geoffrey J.D. Hewings (2019) “The Challenge of Estimating the Impact of Disasters: Many Approaches, Many Limitations and a Compromise,” in Yasuhide Okuyama and Adam Z. Rose (eds.) *Advances in Spatial and Economic Modeling of Disaster Impacts*, Advances in Spatial Science, Heidelberg, Springer, pp. 163-189

March 27

### **Regional Labor Markets: Competing Theories and Empirical Applications**

#### *Reading*

Figuroa: (part of doctoral dissertation – to be posted on website)

Andrew Isserman, Carol Taylor, Shelkby Gerking and Uwe Schubert (1986) “Regional labor market analysis,” In P. Nijkamp (ed.) *Handbook of Regional and Urban Economics*, Elsevier, pp. 543-580.

April 3

### **Demographic Challenges: Migration, Ageing and OLG Modeling, Endogenous Growth, Occupational Challenges**

#### *Reading*

Geoffrey J.D. Hewings and Euijune Kim (2014) “Demographic Challenges to Regional Development,” in Peter Nijkamp, Adam Rose and Karima Kourtit (eds) *Regional Science Matters*, Heidelberg, Springer, pp. 187-219

Seryoung Park and Geoffrey J.D. Hewings (2009) “Immigration, ageing and the regional economy,” *Cityscape: A Journal of Policy Development and Research*, 11, 59-80

Tae-Jeong Kim and Geoffrey J.D. Hewings (2013) “Inter-Regional Endogenous Growth under the Impacts of Demographic Changes,” *Applied Economics* 45, 3431-49

Tae-Jeong Kim and Geoffrey J.D. Hewings (2013) “Endogenous Growth in an Ageing Economy:

Evidence and Policy Measures,” *Annals of Regional Science*, 50:705–730

Tae-Jeong Kim and Geoffrey J.D. Hewings (2015) “Aging Population in a Regional Economy: Addressing Household Heterogeneity with a Focus on Migration Status and Investment in Human Capital,” *International Regional Science Review*

Euijune Kim, Geoffrey J.D. Hewings and Changkeun Lee (2017) “Dynamic Impact of Population Aging on Regional Economies in Korea Using a Recursive-Dynamic Interregional CGE-Population Model,” in A.A. Batabyal, P. Nijkamp (eds.), *Regional Growth and Sustainable Development in Asia*, New Frontiers in Regional Science: Asian Perspectives volume 7 (Heidelberg, Springer)

Capello, ch 10, 11

April 10

### **Regional Economic Models: Applications using the REAL Systems**

Forecasting the regional economy

Impact Analysis: environmental accounting

Unraveling the heterogeneity of household demand Interregional Trade

Environmental Analysis

*Reading*

Karen Turner, Cathy Xin Cui, Soo Jung Ha & Geoffrey Hewings (2012): Input–output analyses of the pollution content of intra- and inter-national trade flows, *Contemporary Social Science: Journal of the Academy of Social Sciences*, DOI:10.1080/21582041.2012.692808

Laura Atuesta and Geoffrey J.D. Hewings (2013) “Economic welfare analysis of the legalization of drugs: A CGE microsimulation model for Colombia,” *Economic Systems Research* 25, 190-211

M. Alejandro Cardenete and Geoffrey J.D. Hewings (2011) “Water price and water sectoral allocation in Andalusia. A computable general equilibrium model approach,” *Environmental Economics*, 2, 17-27

Zhining Tao, Allen Williams, Kieran Donaghy, Geoffrey J.D. Hewings (2007) “A Socio-economic Method for Estimating Future Air Pollutant Emissions - Chicago Case Study,” *Atmospheric Environment* 41 (2007) 5398–5409

Kieran P. Donaghy, Clufford R. Wymer, Geoffrey J.D. Hewings and Soo Jung Ha (2017) “Structural change in the Chicago region and the impact on emission inventories in a continuous-time modeling approach,” *Journal of Economic Structures*

Jan Oosterhaven and Geoffrey J.D. Hewings (2013) “Interregional input-output models,” in M.M. Fischer and P. Nijkamp (eds.) *Handbook of Regional Science*, Heidelberg, Springer, pp 875-901.

Geoffrey J.D. Hewings and Jan Oosterhaven (2013) “Interregional trade models,” in M.M. Fischer and P. Nijkamp (eds.) *Handbook of Regional Science*, Heidelberg, Springer, pp. 903-925.

Euijune Kim, Geoffrey Hewings and Hidayat Amir, (2017) “Economic Evaluation of Transportation Projects: an Application of Financial Computable General Equilibrium Model,” *Research in Transportation Economics*

Na Li, Xiaoling Zhang, Minjun Shi and Geoffrey J.D. Hewings, “Does China's air pollution abatement policy matter? An assessment of the Beijing-Tianjin-Hebei region based on a multi-regional CGE model,” *Energy Policy*, 127, 213-227

Hongxia Zhang and Geoffrey J.D. Hewings and Xinye Zheng (2019) “The Effects of Carbon Taxation in China: An Analysis Based on Energy Input-Output Model in Hybrid Units” *Energy Policy*, 128, 223-224.

April 17

### **Structural Changes in the Regional Economy: Measurement and Interpretation**

Theory

Role of interregional trade: testing the New Economic Geography (US, China, Japan)

*Reading*

Erik Dietzenbacher and Bart Los (1998) “Structural Decomposition Techniques: Sense and Sensitivity,”

*Economic Systems Research*, 10, 307-324.

Geoffrey J.D. Hewings and Jan Oosterhaven (2015) “Interregional input–output modeling: spillover effects, feedback loops and intra-industry trade” in Charlie Karlsson, Martin Andersson and Therese Norman (eds.) *Handbook of Research Methods and Applications in Economic Geography*, Elgar.

Jee-Sun Lee and Geoffrey J.D. Hewings, “Exploring the Spatial Connectivity of US States, 1993–2007,” in A. Batabayal and P. Nijkamp (eds.) *The Region and Trade: New Analytical Directions* World Scientific, 91-136

Meng, B., & Yamano, N. (2017). Compilation of a regionally-extended inter-country input-output table and its application to global value chain analysis. *Journal of Economic Structures*

## Regional Business Cycles

*Reading*

Yangu Park and Geoffrey J.D. Hewings (2012) “Does Industry Mix Matter in Regional Business Cycles?” *Studies in Regional Science*, 42, 39-60.

Sungyup Chung and Geoffrey J.D. Hewings (2015) “Competitive and Complementary Relationship between Regional Economies: A Study of the Great Lake States,” *Spatial Economic Analysis*, 10, 205- 229

Motonari Hayashida and Geoffrey J.D. Hewings (2009) “Regional business cycles in Japan,” *International Regional Science Review*

Ana Gomez-Loscos M. Dolores Gadea-Rivas and Eduardo Bandres (2017) “Regional Business Cycles in Europe. Dating and clustering,” Madrid, Banco de España

Jones, RW, Kierzkowski H (2005) International fragmentation and the new economic geography. *North American Journal of Economics and Finance*, 16/1: 1-10

April 27

## Regional Development Policy – Growth Poles, Clusters, Smart Specialization, Fiscal Decentralization

*Reading*

Capello *Ch 7, 8*

Geoffrey J.D. Hewings (2015) “Spatially Blind Trade and Fiscal Impact Policies and their Impact on Regional Economies,” *The Quarterly Review of Economics and Finance*, 54, 590-602.

Randall W. Jackson, (2015) “Are Industry Clusters and Diversity Strange Bedfellows?” *Review of Regional Studies*, 45, 113–129.

Philip McCann and Raquel Ortega-Argilés (2013) “Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy,” *Regional Studies*,

Rodríguez-Pose, A. (2018) “The revenge of the places that don’t matter (and what to do about it),” *Cambridge Journal of Regions, Economy and Society* 11, 1, 189-209

David L. Rigby, Christoph Roesler, Dieter Kogler, Ron Boschma & Pierre-Alexandre Balland (2022) “Do EU regions benefit from Smart Specialisation principles?” *Regional Studies*, 56:12, 2058-2073, DOI: 10.1080/00343404.2022.2032628

## New Initiatives: Linking Regional Macro Models with Network Systems; Capturing Spillover Effects from Public Investment (SpVAR Modeling)

Regional economic analysis of unexpected events (hurricanes, floods, earthquakes) Port efficiency and regional development in Brazil; Austerity: Impacts of public investment in infrastructure BREXIT

*Readings*

Capello *Ch 9, 10, 11*

Miguel Marquez, Julian Ramajo and Geoffrey J.D. Hewings (2015) “Regional growth and spatial spillovers: Evidence from an SpVAR for the Spanish regions,” *Papers in Regional Science*.

Miguel Marquez, Julián Ramajo and Geoffrey J.D. Hewings (2017) “Regional Public Stock Reductions in Spain: Estimations from a Multiregional Spatial Vector Autorregressive Model,” *Region*, 4, 129-146.

<https://openjournals.wu-wien.ac.at/ojs/index.php/region/article/view/146>

Eduardo A. Haddad, Geoffrey J. D. Hewings, Fernando S. Perobelli, Raul A. C. dos Santos, (2011) "Regional Effects of Port Infrastructure: A Spatial CGE Application to Brazil," *International Regional Science Review*, 12, 207-226.

Jungyul Sohn, Tschangho John Kim, Geoffrey J.D. Hewings, (2003) Jong Sung Lee and Sung-Gheel Jang "Retrofit Priority of Transport Network Links under an Earthquake," *Journal of Urban Planning and Development* 129 195-210.

Thomas Sampson (2017) "Brexit: The Economics of International Disintegration," *Journal of Economic Perspectives*, 31, 163-184.

Wen Chen, Bart Los, Philip McCann, Raquel Ortega-Argilés, Mark Thissen and Frank van Oort (2017) "The Continental Divide? Economic Exposure to Brexit in Regions and Countries on both Sides of the Channel," *Papers in Regional Science*, 97, 25-54

Carlos Llano (2019) Julián Pérez, Federico Steinberg and Geoffrey J.D. Hewings "Global and regional effects of the US tariffs on iron, steel and aluminium: A SMART combination of models with a focus on Spain," *Regional Science Policy & Practice*, 11, 525-547.

Klaus Desmet, Dávid Nagy and Esteban Rossi-Hansberg (2018) "The Geography of Development," *Journal of Political Economy*, 126(3), 903-983.

May 1

**Paper / Project Presentations**

**Paper due by 17:00 on May 5**

May 12

**Final Examination 8:00-11:00 a.m.**

Economics 590 Section M2  
**Regional Economics**  
Spring 2020

**Paper**

The paper should reflect your interest in applying some methodology learned in your statistics or econometrics classes to a problem preferably in your own country or a country in which you plan to live. The paper should provide you with an opportunity to assemble relevant data and work towards developing some insight into a regional economics' problem. **Feel free to partner with one other colleague in the class.** In the case of joint work, there should be a clear designation of who was responsible for which parts of the final paper.

**The paper must be submitted, in printed form or electronically, by 17:00 on Friday May 5.**

The paper should be structured in a form suitable for presentation either to a government department (such as ministry for regional development or for finance) or for submission to an academic journal. In both cases, it should contain the following:

**Title****Abstract**

One paragraph summary of the paper

**Statement of purpose**

What is the issue that you wish to address?

What are the objectives?

Guide to the structure of the paper

**Literature Review**

Cite and discuss no more than 3-5 relevant articles

Do not list them but focus on the value added they contributed and how you will use the methodology, ideas etc. in your own paper

**Methodology to be employed**

Be sure to cite relevant sources

Describe a set of hypotheses or expectations that you propose to test

(For example, if developing an econometric analysis, provide expectations on signs of coefficients)

If the paper will be for policy analysts, explain the outcomes in terms of their potential contributions to policy formation, monitoring or evaluation.

**Data**

Describe the source, type and coverage (regions, years etc.)

If doing time series analysis, be sure to present in constant currency values

**Results**

Describe your results and link back to the hypotheses you proposed in the Methodology section

If appropriate, consider the policy implications.

**Conclusions**

Provide a brief overview of the paper and highlight the value added you provided.

Be sure to note limitations and point to future research opportunities

**List of literature cited**