

AECO 803
TTh: 10:30 - 11:50

Fall 2024

Ph.D. Topics Course: Quantitative Macro-Labor
Professor Benjamin S. Griffy
University at Albany, SUNY

1 Overview and Objectives

This course is focused on the empirical foundations and theoretical implications of wage dispersion, wealth inequality, income risk, and the resulting consumption risk. The goal of this course is to provide students with a set of empirical regularities about income and consumption risk, theoretical and quantitative explanations for these observations, and computational tools to provide further and better explanations for the behavior of individuals in the aggregate economy.

2 Contact Information

- Name: Ben Griffy
- I can be reached via email: bgriffy@albany.edu
- I will be holding office hours on Tuesdays: 12:30-2:30pm in my office, Hudson 245.

2.1 Online Viewing

There is no online viewing option. In the event that someone catches COVID, or another contagious disease, please contact me and I can set-up a Zoom link for those days. I will post this link on Brightspace or share with you directly. I will rarely use Brightspace, but feel more comfortable distributing the Zoom link there than on my website.

3 Course Requirements

3.1 Course Materials

- There is no explicitly required textbook for this class; nor is there a specifically required programming language for applicable assignments. Below are listed some suggested reference material. For programming languages, you may choose whatever works best for you. I would suggest Matlab or Julia (or Python if you really must) for assignments that involve solving dynamic programming, and Stata or R for assignments that involve data. These are the languages with which I am most familiar and therefore most likely to be able to help you if you run into any problems.

my_pubs

Note: These texts are NOT required, but may occasionally provide useful references:

- N.L. Stokey, R.E. Lucas, and E.C. Prescott. *Recursive Methods in Economic Dynamics*. Harvard University Press, 1989. ISBN 9780674750968. URL <https://books.google.com/books?id=v-W6AAAAIAAJ>
- L. Ljungqvist and T.J. Sargent. *Recursive Macroeconomic Theory*. The MIT Press. MIT Press, 2018. ISBN 9780262348737. URL <https://books.google.com/books?id=Jm1qDwAAQBAJ>
- Christopher A. Pissarides. *Equilibrium Unemployment Theory, 2nd Edition*, volume 1 of *MIT Press Books*. The MIT Press, January 2000. ISBN ARRAY(0x40731830). URL <https://ideas.repec.org/b/mtp/titles/0262161877.html>
- David N DeJong and Chetan Dave. *Structural macroeconometrics*. Princeton University Press, 2011
- Dale T. Mortensen. *Wage Dispersion: Why Are Similar Workers Paid Differently?*, volume 1 of *MIT Press Books*. The MIT Press, June 2005. URL <http://ideas.repec.org/b/mtp/titles/0262633191.html>
- Richard Rogerson, Robert Shimer, and Randall Wright. Search-theoretic models of the labor market: A survey. *Journal of Economic Literature*, 43(4):959–988, December 2005. doi: 10.1257/002205105775362014. URL <http://www.aeaweb.org/articles?id=10.1257/002205105775362014>
- Jonathan Heathcote, Kjetil Storesletten, and Giovanni L. Violante. Quantitative Macroeconomics with Heterogeneous Households. NBER Working Papers 14768, National Bureau of Economic Research, Inc, March 2009. URL <https://ideas.repec.org/p/nbr/nberwo/14768.html>
- Fatih Guvenen. Macroeconomics with heterogeneity: A practical guide. Working Paper 17622, National Bureau of Economic Research, November 2011. URL <http://www.nber.org/papers/w17622>

- T.F. Cooley. *Frontiers of Business Cycle Research*. Princeton University Press, 1995. ISBN 9780691043234. URL <https://books.google.com/books?id=hfTf0u4JuRsC>
- Sargent and Stachurski Quant-Econ
- I will update this list as needed in the class.

For programming languages, it **DOES** matter what version you install, and what repository you install from. I suggest the following:

- Python: Anaconda.
- Julia: Current version.
- R: RStudio.
- Stata: MP if possible.
- Matlab: Current version.

You will be required to turn in all (non- \LaTeX) code used to produce assignments, and required to turn in all assignments in \LaTeX . To assist with learning \LaTeX , I will publish all documents I produce in the course both as PDFs and in \LaTeX .

3.2 Course Prerequisites

- Have finished the first-year PhD macroeconomics sequence, or obtained permission from me to enroll in course.

4 Grading

- Homework and Discussion: 30%. Homework must be turned in using \LaTeX
- Introduction/Research Proposal: 20%
- Data project: 20%
- Model project: 30%
- Note: I don't intend to have any exams in this course, but will require presentations for various papers as well as the projects in class.

5 Tentative Course Outline

Introduction

Date	Description
Week 1 (Aug. 26th - Aug. 30th):	
• Topics:	<ul style="list-style-type: none">• Introduction to wage dispersion• Income inequality vs. income risk• Consumption risk• Suggested programming languages and references
• Readings:	<ul style="list-style-type: none">• None.
• Assignments:	<ul style="list-style-type: none">• Install programming languages and L^AT_EX

Estimating Income Processes and Consumption Risk

Date	Description
Week 2 (Sept. 2nd - Sept. 6th):	
• Topics:	<ul style="list-style-type: none">• Statistical models of income risk• Estimating consumption risk
• Readings:	<ul style="list-style-type: none">• Guvenen [2009]• Storesletten et al. [2004]• Deaton [1991]
• Assignments:	<ul style="list-style-type: none">• Introduction for Research Paper.

Wage and Income Dispersion via Frictional Labor Markets

Date	Description
Week 3 (Sept. 9th - Sept. 13th):	
• Topics:	• The McCall Model
• Readings:	• Rogerson et al. [2005]
• Assignments:	• Solve McCall model (see online homework).
Week 4 (Sept. 16th - Sept. 20th):	
• Topics:	• On-the-Job Search
	• Wage-Tenure Contracts
• Readings:	• Burdett and Mortensen [1998]
• Assignments:	• TBD.
Week 5 (Sept. 23rd - Sept. 27th):	
• Topics:	• Extensions of On-the-Job Search
	• Wage-Tenure Contracts
	• Sequential Auctions
• Readings:	• TBD.
• Assignments:	• Turn in introduction for research paper.
Week 6 (Sept. 30th - Oct. 4th):	
• Topics:	• Equilibrium Labor Markets: the DMP Model
	• Endogenous Separations
	• Bargaining
• Readings:	• TBD.
• Assignments:	• Solve DMP model (see online homework)

Wage and Income Dispersion via Frictional Labor Markets (Cont'd)

Date	Description
Week 7 (Oct. 7th - Oct. 11th):	
• Topics:	• Endogenous Separations
	• Directed Search
	• Solution Methods.
• Readings:	• TBD.
• Assignments:	• TBD.
Week 8 (Oct. 14th - Oct. 18th):	
• Topics:	• Solution Methods.
• Readings:	• TBD.
• Assignments:	• TBD.

Heterogeneity and Consumption Risk

Date	Description
Week 9 (Oct. 21st - Oct. 25th):	
• Topics:	• Heterogeneous agent models
	• Krussell-Smith
• Readings:	• Huggett [1993]
	• Aiyagari [1994]
	• Krusell and Smith [1998]
• Assignments:	• Data project due at beginning of week.
Week 10 (Oct. 28th - Nov. 1st):	
• Topics:	• Data project presentations.
• Readings:	• TBD.
• Assignments:	• Solve Bewley model
Week 11 (Nov. 4th - Nov. 8th):	
• Topics:	• Solution methods
	• Inequality in incomplete markets
• Readings:	• Huggett et al. [2011]
• Assignments:	• Solve Aiyagari model
Week 12 (Nov. 11th - Nov. 15th):	
• Topics:	• Search model extensions
	• More heterogeneity in BRE models.
• Readings:	• TBD.
• Assignments:	• TBD.
• Notes:	• I will be out of town on the 10th. Class is canceled.

Estimation (Tentative)

Date	Description
Week 13 (Nov. 18th - Nov. 22nd):	
• Topics:	• Calibration and estimation
	• Start of project presentations
• Readings:	• Kydland and Prescott [1996]
• Assignments:	• Turn in first draft of model project.

Wrapping-Up

Date	Description
Week 14 (Nov. 25th - Nov. 29th):	
• Topics:	• Thanksgiving Break! No classes.
• Readings:	• TBD.
• Assignments:	• TBD.
Week 15 (Dec. 2nd - Dec. 6th):	
• Topics:	• Presentations of Final Projects
• Readings:	• TBD.
• Assignments:	• TBD.
Week 16 (Dec. 9th - Dec. 13th):	
• Topics:	• Presentations of Final Projects
• Readings:	• TBD.
• Assignments:	• Revised draft of 3 projects due on last day of course.

References

- S Rao Aiyagari. Uninsured idiosyncratic risk and aggregate saving. *The Quarterly Journal of Economics*, 109(3):659–684, 1994.
- Kenneth Burdett and Dale T Mortensen. Wage differentials, employer size, and unemployment. *International Economic Review*, pages 257–273, 1998.
- T.F. Cooley. *Frontiers of Business Cycle Research*. Princeton University Press, 1995. ISBN 9780691043234. URL <https://books.google.com/books?id=hfTf0u4JuRsC>.
- Angus Deaton. Saving and Liquidity Constraints. *Econometrica*, 59(5):1221–1248, September 1991. URL <https://ideas.repec.org/a/ecm/emetrp/v59y1991i5p1221-48.html>.
- David N DeJong and Chetan Dave. *Structural macroeconometrics*. Princeton University Press, 2011.
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- Mark Huggett. The risk-free rate in heterogeneous-agent incomplete-insurance economies. *Journal of economic Dynamics and Control*, 17(5):953–969, 1993.
- Mark Huggett, Gustavo Ventura, and Amir Yaron. Sources of lifetime inequality. *American Economic Review*, 101(7):2923–54, 2011.
- Per Krusell and Anthony A Smith, Jr. Income and wealth heterogeneity in the macroeconomy. *Journal of political Economy*, 106(5):867–896, 1998.
- Finn E Kydland and Edward C Prescott. The computational experiment: An econometric tool. *Journal of economic perspectives*, 10(1):69–85, 1996.
- L. Ljungqvist and T.J. Sargent. *Recursive Macroeconomic Theory*. The MIT Press. MIT Press, 2018. ISBN 9780262348737. URL <https://books.google.com/books?id=Jm1qDwAAQBAJ>.
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Christopher A. Pissarides. *Equilibrium Unemployment Theory, 2nd Edition*, volume 1 of *MIT Press Books*. The MIT Press, January 2000. ISBN ARRAY(0x40731830). URL <https://ideas.repec.org/b/mtp/titles/0262161877.html>.

Richard Rogerson, Robert Shimer, and Randall Wright. Search-theoretic models of the labor market: A survey. *Journal of Economic Literature*, 43(4):959–988, December 2005. doi: 10.1257/002205105775362014. URL <http://www.aeaweb.org/articles?id=10.1257/002205105775362014>.

N.L. Stokey, R.E. Lucas, and E.C. Prescott. *Recursive Methods in Economic Dynamics*. Harvard University Press, 1989. ISBN 9780674750968. URL <https://books.google.com/books?id=v-W6AAAAIAAJ>.

Kjetil Storesletten, Christopher I. Telmer, and Amir Yaron. Consumption and risk sharing over the life cycle. *Journal of Monetary Economics*, 51(3):609–633, April 2004. URL <https://ideas.repec.org/a/eee/moneco/v51y2004i3p609-633.html>.