Macro III
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Office Hours: 9-10 Monday
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Course Description:
This course is divided into two parts. Part I presents computational methods that are useful for solving dynamic optimization problems and for computing equilibria. The spirit of this part is to build confidence in using computational methods and recursive methods in particular. Part II of the course is a traditional second year "Topics" class that stresses new developments in the literature for a small number of active research areas.

Requirements:
1. Students will be given quite a few homework problems that involve computation. Students may work in two-person teams to do all assignments and presentations.
2. Teams will be asked to present homework results in class. Teams will also present papers from the Topics section of the course. A typical presentation will involve presenting (i) the main question of the paper, (ii) the main result and (iii) the computational approach (if relevant). The idea is NOT to give a full seminar and NOT to waste time on items that are not central. Instead, quickly (15-20 minutes) present items (i)-(iii) and then give a few interesting comments. An interesting comment might describe what is critical for the main result, outline key steps in an argument or indicate the degree to which data properties determine a main quantitative result. The general presentation strategy is a version of “Grasp the large. Let go of the small”.
3. There will be a take-home final exam. You can talk about exam problems “in the hallway”. However, all students should do their own work as to (i) writing up answers, (ii) producing algorithm and computer code, (iii) producing numerical answers and (iv) producing any theoretical claims.

References on Computational Methods and Recursive Methods:
Dynamic Economics: Quantitative Methods ... - Adda and Cooper (2003)
Dynamic General Equilibrium Modelling: ... - Heer and Maussner (2005)

OUTLINE:

PART I: Computational Methods
1. Background Readings


2. Dynamic Programming

Finite horizon problems
Infinite horizon problems

3. Computation of Solutions to DP Problems

a Finite DP Problems
   * Finite Horizon
   * Infinite Horizon
   * Howard’s Algorithm
b Continuous DP Problems
   * Working on Bellman’s Equation
     · Discrete Methods
     · Smooth Methods
   * Working on Euler Equations
     · Method of Endogenous Grid Points
c Quadrature and Discretizing a Markov Process
d Simulating Optimal Decision Rules
e If Euler Eq. Error is Small, Then How Good is the Approximation?

4. Computing Equilibria in Growth Models

a time domain methods
b recursive methods
c approximating about a steady state
d models with idiosyncratic and/or aggregate risk
PART II: Topics/Applications

1 Macroeconomics with Consumer Heterogeneity:
   some basic models: Huggett (1996)*, Storesletten, Telmer and Yaron (2004)*, Huggett, Ventura and Yaron (2011)*
   facts paper: Guvenen, Karahan Ozkan and Song (2015)

2 Macroeconomics with Firm Heterogeneity:
   models: Hopenhayn and Rogerson (1993)*
   application: Pugsley, Sedlacek and Sterk (2018)*, Midrigan and Xu (2014)

3 Progressive Taxation
   sufficient statistic formulae: Diamond and Saez (2011)*, Piketty and Saez (2013a), Piketty and Saez (2013b)
   a general top tax rate formula: Badel and Huggett (2017)*
   empirics for elasticities: Saez, Slemrod and Giertz (2012)

4 Declining Labor Share and Markups:

5 Pareto Tail Coefficient Papers:
   wealth facts: Saez and Zucman (2016)*
   review papers: Gabaix (2009), Jones (2015), Benhabib and Bisin (2017)*
earnings/income/wealth: Gabaix, Lasry, Lions and Moll (2016)


6 Agent Heterogeneity and Aggregate Shocks:

Auclert, Rognlie and Straub (2018), Kaplan and Violante (2018)
References:


Auclert, Rognlie and Straub (2018), The Intertemporal Keynesian Cross

Badel and Huggett (2017a) The Sufficient Statistic Approach: Predicting the Top of the Laffer Curve, JME


Bayer, Mecikovsky and Meier (2018), Misallocation, Markups and Technology

Benhabib and Bisin (2017), Skewed Wealth Distributions, NBER 21024.

Behabib, Bisin and Zhu (2011), The distribution of wealth ..., Econometrica.

Behabib, Bisin and Luo (2017), AEA: P and P, Earnings Inequality and Other Determinants of Wealth Inequality

Berger, Guerrieri, Lorenzoni, Vavra (2015), House Prices and Consumer Spending


Cagetti and De Nardi (2006), Entrepreneurship, Frictions and Wealth, JPE


DeLoecker and Eeckhout (2017), The Rise of Market Power and the Macroeconomic Implications

DeLoecker and Eeckhout (2018), Global Market Power

De Nardi (2015), QUANTITATIVE MODELS OF WEALTH INEQUALITY: A SURVEY, NBER.

Den Haan (2011) Solving Models w/ heterogeneous Agents, JEDC

Foster Haltiwanger and Syverson (2008), Reallocation, Firm Turnover and Efficiency, AER 394-425.


Gabaix, Lasry, Lions, Moll (2016), The Dynamics of Inequality, Econometrica.


Guner, Lopez-Daneri and Ventura (2014), Heterogeneity and Government Revenues: Higher Taxes at the Top?


Huggett (1996), Wealth Distribution ..., JME, 38, 469-94.

Huggett (1997), The One-Sector Growth Model with Idiosyncratic Shocks: Steady States and Dynamics, JME, 39, 385-403.

Huggett, Ventura and Yaron (2011) Sources of Lifetime Inequality, AER.


Kaplan and Violante (2018), Microeconomic Heterogeneity and Macroeconomic Shocks, JEP.

Karbarbuonis and Neiman (2014), The Global Decline of the Labor Share, QJE.


Kaynak, Leung and Poschke (2018), Accounting for the Determinants of Wealth Concentration in the US, manuscript.


Krusell and Smith (1998) JPE.

Meghir and Pistaferri (2010), Earnings, Consumption and Lifecycle Choices, NBER 15914.


Oberfield and Raval (2014), Micro Data and Macro Technology


Reiter (2009) Solving Heterogenous agent models ..., JEDC.


Saez and Zucman (2016), Weath Distribution ..., QJE.


Storesletten, Telmer and Yaron (2004), Consumption and Risk Sharing Over the Life Cycle, JME.


Traina (2018), Is Aggregate Market Power Increasing?


Winberry (2016), Toolbox for Solving and Estimating Heterogeneous Agent Macro Models