

# Topics in Advanced Macroeconomics: Heterogeneity and Public Policy

MIE7/PhD, Winter 2013/14

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## Course Description

This course deals with: (i) the origins of economic inequality, and (ii) the design and effectiveness of public policy in the presence of heterogeneity. To tackle these questions we are going to utilize computer simulated economic environments populated by agents who differ from each other in terms of luck and/or innate factors such as ability to learn or produce in the labor market. Due to these differences and the consequent actions of the agents, the models generate different patterns of income, wealth and consumption inequality. The main goals of the course are: (i) to introduce you to the major prototypes of heterogeneous agents models used in quantitative macroeconomics, and (ii) to evaluate different economic policies related to taxation, education, fertility, and labor market participation.

## Basic Information about the Course

**Required Courses:** Advanced Macroeconomics I and II.

**Readings:** There are several textbooks that may prove useful for this course. We will study several chapters of (some of) these books in class (see the outline of the course):

- **Stokey and Lucas (1989)**, **Adda and Cooper (2003)**, and **Ljungqvist and Sargent (2004)**.

In addition to the textbook chapters, we will study a list of research papers. They are divided in 3 categories. Papers indexed by (B) serve as a background reading for each topic. I will expect you to read the articles under this category before each class session. Papers marked by (\*) will be discussed in class. The background readings will help you understand the taught material. The last category of papers, (A), is additional material that expands the models introduced in class and shows various applications to different policy questions.

**Evaluation:** The final grade for the course is formed by fulfilling the 4 requirements below.

<b>Requirement</b>	<b>% of Grade</b>
1. Problem Sets	25%
2. Midterm Exam	15%
3. Presentation	25%
4. Final Exam/Assignment	35%

**Problem Sets:** There will be bi-weekly problem sets. They will include analytical problems to be solved with pen and paper, small coding exercises which will provide some insights on the solution techniques used in the papers, and data assignments which will require manipulation of a longitudinal or a cross-sectional dataset and calculation of basic statistics out of it.

**Presentations:** The registered participants in the course need to give a presentation of around 45 minutes on a paper from group (A). We will coordinate on who will present what in the following few weeks.

**Software:** There are not formal requirements on the type of software you can use for the data and coding problems. Stata might be a good start when it comes to data manipulation. I will provide some example programs in Matlab for the coding exercises.

**Contact and Office Hours:** If you need to reach me, here is how:

- Office: F227, Email: [georgi@georgikocharkov.com](mailto:georgi@georgikocharkov.com)
- Office Hours: Friday, 10-12am.

## Outline of the Course

### 1. Review

- Practical dynamic programming (\*): [Adda and Cooper \(2003\)](#) Chapter 2, (A): [Stokey and Lucas \(1989\)](#) Chapter 2
- Complete markets (\*): [Ljungqvist and Sargent \(2004\)](#) Chapter 8, Sections 8.1-8.9
- Self-insurance (\*): [Ljungqvist and Sargent \(2004\)](#) Chapter 16
- Incomplete markets (\*): [Ljungqvist and Sargent \(2004\)](#) Chapter 17

### 2. Risk and Inequality

- (B): [Ríos-Rull 1995](#), [Guvenen 2011](#), [Heathcote et al. 2009](#), (\*): [Huggett 1993](#), [Aiyagari 1994](#), (A): [Huggett 1996](#), [Krusell and Smith 1998](#), [Heathcote et al. 2010](#)

### 3. Initial Conditions and Earnings

- (B): [Ben-Porath 1967](#), [Keane and Wolpin 1997](#), (\*): [Storesletten et al. 2004](#), [Huggett et al. 2011](#), (A): [Guvenen 2007](#)

### 4. Taxation

- (B): [Ventura 1999](#), [Alesina et al. 2011](#), (\*): [Conesa and Krueger 2006](#), [Guner et al. 2012a](#), (A): [Conesa et al. 2009](#), [Guner et al. 2012b](#)

## 5. Child Care

- (B): Blau and Tekin 2007, Tekin 2007, (\*): Bick 2013, Guner et al. 2013, (A): Domeij and Klein 2013

## 6. Education

- (B): Cunha and Heckman 2010, (\*): Restuccia and Urrutia 2004, (A): Restuccia and Vandenbroucke 2012, Abbott et al. 2013

## 7. Marriage, Female Labor Supply and Fertility

- (B): Aiyagari et al. 2000, Stevenson and Wolfers 2007, (\*): Greenwood et al. 2005, Attanasio et al. 2008, Greenwood et al. 2012, (A): Erosa et al. 2010, Eckstein and Lifshitz 2011, Fernández and Wong (2013), Adda et al. 2012

## References

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- , **Christian Dustmann, and Katrien Stevens**, “The Career Costs of Children,” Economics Working Papers ECO2012/, European University Institute 2012.
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- Conesa, Juan Carlos and Dirk Krueger**, “On the Optimal Progressivity of the Income Tax Code,” *Journal of Monetary Economics*, October 2006, 53 (7), 1425–1450.
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â€¢ Topics in Advanced Econometrics â€¢ Topics in Advanced Microeconomics â€¢ Topics in Advanced Macroeconomics. 1 module (course) from the Doctoral Programme Master's thesis (3 months). If majoring in a subject area, the Master's thesis must be from the selected subject area. Normative public economics deals with questions of optimal income and commodity taxation within a general equilibrium framework. Positive public economics or political economy, in contrast, is based on the behavioural postulate that political agents are rational utility maximisers and examines the consequences of this assumption for government activities, such as the provision of public and private goods, the regulation of markets and macroeconomic stabilisation policies. Topics in Advanced Macroeconomics. Professor: Andr es Erosa and Luisa Fuster. UC3M Spring 2011. 2. Advanced Topics in Macroeconomics. Version: February 23, 2011. Part I. The neoclassical growth model with heterogeneous agents. Other topics. â€¢ Human Capital and Heterogeneity in Income Growth over the Life-Cycle: Huggett, Ventura, and Yaron (2006) and Huggett, Ventura, and Yaron (2009). â€¢ Progressive income taxes and human capital accumulation: Guvenen, Kuru scu, and Ozkan (2009). â€¢ Firm size and policy distortions. Guner, Ventura, and Yi (2008) â€¢ Portfolio choice along the life cycle. Cocco, Gomes, and Maenhout (2005) â€¢ The housing market and the home buying decisions. This article reviews macroeconomic models with heterogeneous households. A key question for the relevance of these models concerns the degree to which markets are complete. This is because the existence of complete markets imposes restrictions on (i) how much heterogeneity matters for aggregate phenomena and (ii) the types of cross-sectional distributions that can be obtained. The degree of market incompleteness, in turn, depends on two factors: (i) the richness of insurance opportunities provided by the economic environment and (ii) the nature and magnitude of idiosyncratic risks to be insure