

## Syllabus

### General Presentation

This is the second half of a one-semester, first-year graduate class in macroeconomics. The first half is taught by Robert King. The aim of the class is (1) to learn some standard models of macroeconomics, and to analyze briefly some issues with these models, and (2) to learn some tools to handle dynamic models with uncertainty. These tools are now used in many fields including Industrial Organization, Public Finance, etc. and so you will find them useful in your future research.

To learn these tools you will need to practice. I will assign one long problem set each week. These problems are the **most important** part of the class. To minimize the burden on the TA, only about 50% of the problem sets will be graded each week. You're allowed to work in groups but each of you must turn in his answers. I cannot emphasize enough that it is by trying to do these problems that you will learn the material.

On the substantive side, we will cover consumption and savings under uncertainty, and the implications for portfolio choice and asset prices. These issues are of course important for macroeconomics, but the models of savings and portfolio choice we will cover have also been applied to microeconomic questions or to countries (i.e., international economics). We will consider the complete market model, precautionary savings, the permanent income model, and borrowing constraints. Depending on time, I may discuss briefly labor supply and search models.

### Logistics

This class is held Tu/Th 11-12:30 in room CAS 225. The review session is held Fridays 2-3:30 in CAS 201.

This class will start after the Spring break, i.e. on Tuesday, March 20.

I will use the courseinfo.bu website to post the material related to the class. I will distribute short lecture notes which will cover the key points of each lecture. You are responsible for learning all the material that I cover in class. You are also encouraged to read some of the papers I quote in the reading list.

### Textbooks

- The following textbook is required: Lars Ljungqvist and Thomas Sargent: Recursive Macroeconomic Theory, MIT Press (preferably 2nd edition, but you can use the 1st edition if you prefer).
- The following textbooks are not required but may be useful:
  - Obstfeld and Rogoff: Foundations of International Macroeconomics, MIT Press. More international focus but covers a lot of standard macro material.
  - David Romer: Advanced Macroeconomics, McGraw-Hill. Less advanced but good discussions and good problems.
  - (SLP) Stokey, Lucas and Prescott: Recursive Methods for Economic Dynamics. More mathematical.

**Outline** (*This outline may be changed depending on how fast the class proceeds.*)

The chapters I refer to are from the Ljungqvist-Sargent textbook (2nd edition). In some cases I will stay close to the book, in some other cases I will present things differently, but in all cases the LS textbook should help you understand the material.

LS = Ljungqvist-Sargent.

SLP = Stokey, Lucas and Prescott.

- Review of deterministic dynamic programming. Markov chains and linear time series processes. Stochastic dynamic programming. (~4 Lectures).

Textbook: SL2 chapter 3 except section 3.7. [SLP chapter 4, sections 4.1, 4.2 is a better, more detailed presentation for those who have a good math background; it is not required for our course though.]

Textbook: SL2 chapter 2 except sections 2.3, 2.6, 2.7.

- General equilibrium model with uncertainty and complete markets. Perfect consumption insurance. Representative agent. Welfare cost of business cycles with complete markets. Aggregate Asset Pricing and Equity premium. (~5 Lectures).

Textbook: SL2 chapter 8 up to and including section 8.8.

Recommended reading: Lucas 2003, Cochrane 1997, Mehra and Prescott 1985, Hansen and Singleton 1983, Kocherlakota 1996.

- The Permanent Income Model. Excess Smoothness, Excess Sensitivity. (~2 Lecture).

Textbook: SL2 chapter 2, section 2.6.

Recommended reading: Hall 1978, Deaton and Campbell 1989, Quah 1990.

- A savings problem with incomplete markets. Two-period example and three-period example. Precautionary Savings. Stationary cross-sectional wealth distributions. Equilibrium of the savings problem with or without capital. (~3 Lectures).

Textbook: SL2 chapter 16 (skim 16.5 to 16.7) and chapter 17 sections 17.1 to 17.3, and 17.13 (skim 17.4 to 17.7). Also read again section 4.3 in chapter 4.

Recommended reading: Carroll 2001, Huggett 1993, Aiyagari 1994.

- Time permitting: Labor Supply and Search Models. Recommended reading: SL2 chapter 6.
- Final Exam: Friday 5/11, 9am to 11am. Location to be announced.

## Readings

The starred items are especially recommended. Many of these papers can be found on JSTOR ([www.jstor.org](http://www.jstor.org)) or on the authors' web pages. I will distribute copies of some of these articles.

Aiyagari: "Uninsured Idiosyncratic Risk and Aggregate Saving", *Quarterly Journal of Economics* 1994, 109 (3): 659-684.

Campbell and Deaton, 1989: "Why is Consumption so Smooth?", *Review of Economic Studies* 56 (3): 357-373.

\*Carroll: "A Theory of the Consumption Function, with and without Liquidity Constraints (expanded version)." NBER WP 8387 (also *Journal of Economic Perspective* version, but less technical.)

\*Cochrane (1997): "Where is the market going? Uncertain facts and novel theories", *Federal Reserve Bank of Chicago Economic Perspectives*. Available on Cochrane's web page.

\*Hall: "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence", *Journal of Political Economy* 1978, 86 (6): 971-987.

\*Hansen and Singleton "Stochastic Consumption, Risk Aversion, and the Temporal Behavior of Asset Returns", *Journal of Political Economy* 1983, 91(2):249-265.

\*Huggett: "The Risk-Free Rate in Heterogeneous-Agent Incomplete Insurance Economies", *Journal of Economic Dynamics and Control* 1993, 17: 953-969.

Kocherlakota: "The Equity Premium: it's still a puzzle", *Journal of Economic Literature* 1996.

\*Lucas "Macroeconomic Priorities", *American Economic Review*, March 2003, 93 (1) 1-14.

\*Mehra and Prescott: "The Equity Premium: A Puzzle?", *Journal of Monetary Economics*, 15 (2): 145-162.

Quah: "Permanent and Transitory Movements in Labor Income: An Explanation for Excess Smoothness in Consumption", *Journal of Political Economy* 1990 98(3): 449-475.

Townsend: "Risk and Insurance in Village India". *Econometrica*, 1994, 62 (3): 539-591.

## **Grading**

There will be several problem sets (20%) and one final exam (80%). Not all problem sets will be graded; only 50% of them (drawn randomly) will be graded each week. The Final Exam is on Friday 5/11, 9am to 11am, (Location to be announced). Your total letter grade will be obtained by averaging the results from this half of the class with the results obtained during the first half of the class (taught by Robert King).

## **Policies**

*Late homework will not be accepted (unless you can give proof of sickness or other valid excuse).*

The exam *must* be taken at the scheduled time, unless a valid, certified excuse is given. Students caught cheating or otherwise violating the rules of academic conduct will receive a zero grade for the class, and will be deferred to the Dean's office. The code of academic conduct is available in CAS 105.

## **Contact Info: Lecturer**

*Do not hesitate to contact me with any question regarding the class.*

Name: François Gourio

Office: #400, 264 Bay State Road.

Best way to reach me is email: [fgourio@bu.edu](mailto:fgourio@bu.edu).

Office hours: Monday 4-6, Friday 11-12.

## **Contact Info: TA**

Vladimir Yankov will be the teaching assistant for the class. He will hold weekly sessions to discuss problem sets and hold office hours to help you with the material of the class. He will also grade problem sets. However he will grade only 50% of the problem sets every week. These 50% will be drawn randomly.

His email is: [yankov@bu.edu](mailto:yankov@bu.edu) and his office phone number is (617) 353-5688.

His office is B03a in the basement of the SSW building (264-270 Bay State Road), and his office hours are: Wed and Friday, 12:30pm-2pm. The review session is held Fridays 2-3:30 in CAS 201.