

Economics EC 205: Macroeconomic Theory I

Fall Semester 2012

Mondays, Wednesdays: 4:30–5:45pm

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Office hours: Mondays, 1:30–3:30pm; Wednesdays, 5:45–6:45pm.

Other times by appointment. You may also contact me by email in order to set up an appointment to see me.

Administrative Aspects

There will be two midterms and a final.

Please note the following dates: Monday, October 8, Monday November 12, and Wednesday, November 21, are holidays. Monday, December 10, is our *last* class. We will meet on *Tuesday*, October 9 to make up for Monday, October 8.

Midterm # 1 will take place on Wednesday, October 3; midterm # 2 will take place on Wednesday, November 14. The final will take place at the time scheduled by the Registrar for the class: Tuesday, December 18, at 3:30 – 5:30 pm.

Occasional homework will be necessary for digesting the material. It will help you focus and stay abreast of the tools. You may work on the homework in teams of maximum three students.

The final exam will be cumulative. The course grade will be based on your performance on all exams and the homework according to the following weights:

Midterm # 1: 20% ; Midterm # 2: 25 % ; Final: 45 %; Homework: 10%.

BOOKS

The course will draw heavily from an excellent textbook by David Romer and additional material from other textbooks, journals, and unpublished sources. My lectures are designed

to be self-sufficient; you will have access to my handwritten notes on **Trunk**. I also provide typed notes to help you digest my lectures. The principal text for the course is:

David Romer, *Advanced Macroeconomics*, MacGraw-Hill, fourth edition, 2011. (Referred to below by **R**). [The third edition is a close substitute.]

Even though this is our text, I find that its reliance on continuous time methods, that is differential equations and integrals, may complicate the mathematics unnecessarily. Therefore, my lectures will generally be using discrete time tools, that is difference equations and summations and so will the typed notes that I will be making available regularly.

Teaching macro at your level is tricky. It has a lot of math, but it is not math. It is about modelling phenomena that are intrinsically macro. Therefore, I have placed a number of intermediate macroeconomics books on three-hour reserve. I strongly recommend that you read one of them, anyone, from cover to cover if your background in macroeconomics is not very strong. That will give you sufficiently familiarity with the subject matter. Still, I will not assume that you have done that and will try to provide important background. There are many good books: Blanchard, Olivier. *Macroeconomics*, 5th edition. Barro, Robert. *Macroeconomics*, various editions. Auerbach, Allan, and Laurence Kotlikoff. *Macroeconomics*, 2nd edition. Williamson, Stephen. *Macroeconomics*, 2010. Fourth Ed. Pearson. I also have a bunch of old editions and will be happy to lend them to you.

Readings marked as downloadable from www.nber.org may be obtained *free* of charge *only if* you are accessing them from a Tufts IP address or, off campus, via the Tisch library site. Generally, 95% of economics papers that are already published may be found on the web somewhere, perhaps in their penultimate versions. Sometimes, the authors themselves make them available in pdf on their web pages. Go on Google with the full title in “ ”, and you will find a lot of things.

A major resource for all subjects of macroeconomics is: *The New Palgrave Dictionary of Economics Online*. Make it a habit to peruse it, look up things, terms, concepts, etc. It is very educational, the articles are written so as to be accessible to people like you, and there are often different approaches by different authors.

The class aims at a dual objective, that is, first to provide the analytical background for an introduction to modern macroeconomics at an advanced level. This requires that you strengthen further your math skills. And, second, to demonstrate the use of these tools in contemporary macroeconomic situations. I consider these indispensable both to those of you who plan to go on studying economics and related disciplines and to those of you who wish to be able to read and to apply macroeconomic tools for the years to come.

To serve these two objectives, it is important that some of the class time be spent on a bit of technical material. The course assumes some familiarity with the fundamental concepts

of macroeconomics at the undergraduate intermediate level. If you feel you are missing basic concepts, it is not too late to beef up on a good undergraduate intermediate text. Please talk to me if you feel you are in that situation. We should then be able to find the right intermediate text for you. There are a lot of good texts. You will benefit enormously by reading a good such text *cover-to-cover!*

The course deals with choice-theoretic models of macroeconomic phenomena and emphasizes mathematical modelling and applications. The standard of rigor maintained in the classroom will define the level of the course. I will assign a set of homework problems. I have also planned for some applications of the material to contemporary economic issues.

This class has a very precise role in the MA in economics curriculum. However, the 2007–2009 crisis (with lingering after-effects) is giving us, unfortunately, an extraordinary opportunity to observe a macroeconomic pathology in action and use current observations to demonstrate important points.

The page assignments below are the minimum necessary to follow the material. You will benefit by reading more. Lecture notes of varying quality will be placed in the web page on `trunk.tufts.edu`. Still, it will be important for you to take good notes. And above all, come and talk to me, ask me questions,

I am working for You!

* denotes more advanced optional material.

OUTLINE

1 Introduction: The Solow (or descriptive) growth model and the Cass–Koopmans Optimal Growth problem

1. A simple static macro model.
Ioannides notes.
R, Ch. 1, 10–13.
2. Acemoglu. 2009. *Introduction to modern economic growth*. Chapter 2. (on reserve, and prepublication version online at trunk course site).
3. **R**, Ch. 1, 1–29. (Note, this is a continuous time treatment: we will do it in discrete time.)
4. An application: The Malthusian prediction and Modern Growth Theory.
R, Ch. 1, 37–45.
Ioannides notes.

5. Growth Accounting and the Solow residual
R, Ch. 1, 30–32.
6. Human capital investment and growth
R, Ch. 1, 151–154.
Barro, Robert. 1992. Kansas City Federal Reserve Bank Symposium:
<http://www.kc.frb.org/publicat/sympos/1992/s92barro.pdf>
Social infrastructure and beyond
R, Ch. 1, 164–174, 174–178.
7. Descriptive vs. optimal growth. Finite and infinite horizon models. The Ramsey–Cass–Koopmans model. Linearization around the steady state and algebraic treatment of dynamics in discrete time. Please refresh from your notes from Fall semester.
Ioannides notes
R, 49–75. Note, this is a continuous time treatment. We will adapt it to discrete time.

2 Introduction to dynamic systems

This material is very important for understanding the tools of modern macroeconomics. It is motivated by the Ramsey–Cass–Koopmans problem above. It would be very helpful if you were to tackle the text by

Azariadis, Costas, *Intertemporal Macroeconomics*, Blackwell, 1993, **A**

which is unfortunately too advanced for this class. On reserve at Tisch.

A somewhat accessible self-contained treatment of the entire material is:

Galor, Oded, *Discrete Dynamical Systems*, 2007, **G**

On reserve at Tisch; manuscript at the course site at trunk.tufts.edu. Also available as e-resource at Tisch (also, can download it but not print it).

1. Scalar linear equations.
2. Linear systems. **G**, 13–25, 27–58.
An application to the dynamics of fiscal policy.
3. *Nonlinear systems and dynamics. **G**, 9–13. **A**, 52–67.

3 Consumption, investment and economic growth

Descriptive vs. optimal growth. Finite and infinite horizon models. Competitive growth processes.

1. Infinite horizon model.
2. **R**, 48–76. Note, this is a continuous time treatment.

Ioannides notes

* An application on the benefits of international migration: Maurice Obstfeld, Kenneth Rogoff. 1996. *Foundations of International Macroeconomics*. Ch. 7, 448–454. On reserve.

4 The overlapping generations model and neoclassical growth: The Diamond Model

1. **R**, 77–93.

4.1 National Debt and Fiscal Policy, Ricardian Equivalence

1. Ioannides notes.
2. **R**, Chapter 11, 584–598. Note, this is a continuous time treatment.
3. * The Debt Limit Debate

Cecchetti, Stephen G., M. S. Mohanty and Fabrizio Zampolli. 2011. “The real effects of debt.” Presented at the Kansas City Fed Symposium, August 2011.

<http://www.kc.frb.org/publicat/sympos/2011/2011.Cecchetti.paper.pdf>

4. “Did the Stimulus Work? A review of the nine best studies on the subject.”
http://www.washingtonpost.com/blogs/ezra-klein/post/did-the-stimulus-work-a-review-of-the-nine-best-studies-on-the-subject/2011/08/16/gIQAThbibJ_blog.html

* Feyrer, James, and Bruce Sacerdote. 2011. “Did the Stimulus Stimulate? Real Time Estimates of the Effects of the American Recovery and Reinvestment Act.” NBER working paper No. 16759. www.nber.org/papers/16759/

5 Topics in Endogenous Growth Theory

1. Examples of endogenous growth models: The Lucas Model and the Romer Model.
Ioannides notes.
R, Chapter 3, 101–134.

6 Life Cycle Optimization and Optimal Consumption and Investment Behavior: Applications

1. Consumption theory: **R**, Ch. 7, p. 365–398.
2. Investment theory: **R**, Ch. 8, 405–428;
3. ***A**, 206–210.
4. * Application: Case, Karl E., John M. Quigley and Robert J. Shiller (2001), “Comparing Wealth Effects: The Stock Market versus the Housing Market,” *Advances in Macroeconomics*, 5, 1, 2005, article 1; <http://www.bepress.com/bejm/advances/vol5/iss1/art1>
Or: www.nber.org/papers/w8606.

And

Case, Karl E., John M. Quigley and Robert J. Shiller (2011), “Wealth Effects Revisited: 1978–2009.” Cowles Discussion Paper, No. 1784.

<http://cowles.econ.yale.edu/P/cd/d17b/d1784.pdf>

7 Models of monetary economies

1. General equilibrium with money. Static models. Dynamic models.
Ioannides Notes.
2. Brunnermeier, Markus. 2008. “Bubbles.” Durlauf, Steven N., and Laurence E. Blume, eds., *The New Palgrave Dictionary of Economics*, 2nd ed.
http://www.princeton.edu/~markus/research/papers/bubbles_survey.pdf
The *Wall Street Journal* on this academic research:
http://www.princeton.edu/~markus/misc/MediaMention/20080516WSJ_Bernanke%27s%20Bubble%20Laborator.pdf

3. * Bernanke, Ben. 2010. "Monetary Policy and the Housing Bubble." Atlanta, January.
<http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.pdf>

* See also Krugman's critique:

<http://krugman.blogs.nytimes.com/2010/01/04/bernanke-in-atlanta/>

8 Keynesian macroeconomic theory: fixed-price equilibrium theory vs. price-setting

Class lectures will be self-contained.

1. Ioannides notes.
2. **R**, Ch. 5, p. 238–244, 244–253.
3. * Keynesian theory: modern foundations of IS-LM curves. Alan Auerbach and Laurence Kotlikoff, *Macroeconomics*, MIT Press, Ch. 8, 9, pp. 266–329. On reserve.
4. The Liquidity Trap:
Eggertsson, Gauti B. 2008. "Liquidity Trap." *The New Palgrave Dictionary of Economics* 2nd ed., 2008, Online.

8.1 Imperfect Competition and Price Setting

Microeconomic Foundations of Incomplete Nominal Adjustment. Expectations-augmented Phillips curve, Lucas critique, Aggregate Demand–Aggregate Supply Model, stabilization policy, new Keynesian theory and price-setting.

1. **R**, Ch. 6, 259–261, 268–300.
2. The Canonical New Keynesian Model,
* **R**, Ch. 7, 352–361.
3. Inflation and monetary policy:
R, 513–523.
4. Monetary and fiscal policy: sum up
Blanchard, Olivier. *Macroeconomics*, on reserve.
Chapter 25, Monetary Policy: A Summing Up. Chapter 26, Fiscal Policy: A Summing Up.

5. Monetary policy and the challenge of the Great Recession of 2007:
Bernanke, Ben (2012) “Monetary Policy since the Onset of the Crisis.” KC Fed Symposium, August 31,
<http://www.federalreserve.gov/newsevents/speech/bernanke20120831a.pdf>

9 Business Cycle Facts and Real Business Cycle Theory

1. **R**, Chapter 4, 189–195.
A simplified RBC model: **R**, Chapter 4, 201–207.
2. *Blanchard, Olivier, and Stan Fischer, *Lectures in Macroeconomics*, Ch. 1, 1–29. On reserve.
3. Growth decomposition, Solow residual revisited.
4. **R**, Chapter 5, 218, 228.

10 Labor Market Frictions and Unemployment: The DMP Model

1. Ioannides notes.
2. Hall, Robert E. (2012), “The 2010 Nobel Prize in Economics: How the DMP Model Explains Current High Unemployment.” American Economic Review Papers and Proceedings, May.
<http://www.stanford.edu/~rehall/HallTalkNobelLunch.pdf>
3. **R**. 486–498.
4. * Pissarides, Christopher A., 2000. *Equilibrium Unemployment Theory*. MIT Press.
On reserve.
Sections
5. Natural rate of unemployment
Daly, Mary *et al.* (2012) “A Search and Matching Approach to Labor Markets: Did the Natural Rate of Unemployment Rise?” *Journal of Economic Perspectives*, 26, 3, 3–26.

<http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.26.3.3>

* Daly, Mary, Bart Hobijn, and Rob Valletta (2011) “The Recent Evolution of the Natural Rate of Unemployment” IZA Discussion Paper No. 5832.

<http://ftp.iza.org/dp5832.pdf>

The Beveridge Curve, from the *Job Openings and Labor Turnover Survey*:

<http://www.bls.gov/jlt/news.htm>

6. *Swedish Academy Citation, full scientific version:

http://www.nobelprize.org/nobel_prizes/economics/laureates/2010/ecoadv10.pdf

* Blanchard, Olivier, and Jordi Gali (2011) “Labor Markets and Monetary Policy: A New Keynesian Model with Unemployment.” *American Economic Journal: Macroeconomics* 2: 1–30