

## Economics EC 206: Advanced Macroeconomic Theory II

Spring Semester 2006 Tuesdays–Thursdays 9:00 – 10:15 Call No. 01056 206

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Office hours: Tuesdays, Thursdays, 2:45–3:45pm. Mondays 2:30–4:30 pm.

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.

Midterm # 1 will take place on Thursday, March 2; midterm # 2 will take place on Thursday, April 13. The final will take place at the time scheduled by the Registrar at the original time for the class: Friday, May 5, at 12:00 – 2:00 pm.

In addition, there will be a paper requirement, to be due at the end of the term, Monday, May 1. The paper may be either a “research paper,” that is a completely new topic with data and estimations, or a literature review paper that focuses on macroeconomic policy debates and issues. The more novel the topic, the less sophisticated the estimations and the shorter the topic can be. Maximum length, 15 pages; if it is a research paper, then it need not be more than 10 pages. If it is a review paper it should not exceed 15 pages, double-spaced. You are completely free on what to work on — the choice of the topic is yours! — but here are some important conditions on review papers. One, it should not be a review of class material, but it could extend class material. Two, it could take off from material that is closely linked to papers under the heading “Macroeconomics and Contemporary Problems” below. Three, if you choose to work on a contemporary macroeconomic policy issue, then a group project would be acceptable to me. For better or worse, the world is full of macroeconomic problems at the moment. Japan appears to have to become unstuck, China may be overheating, the US continues to have to deal with difficulties with an enormous public debt while new policy ideas if implemented will most likely exacerbate the fiscal problem, many European Union countries have hit the self-imposed constraints of the Stability and Growth Pact, and so on.

The intention is to familiarize you with how to conduct research in this information age and to encourage you to get your hands dirty with data. A “proposal” for the paper will be due on February 14; it should include a brief description of the topic, data sources if appropriate, and bibliography. We will spend part of a class on how you conduct research. It should go without saying that you will not allowed to turn in a paper that you have used for another class. If you want to work on something related to a term paper for another class, then both the other instructor and I should be in agreement prior to your starting the work. Please look at the rules on academic integrity at Tufts:

<http://studentservices.tufts.edu/dos/2003%20Pachyderm>

%20AI%20JP/Academic%20Integrity%202003.pdf

The papers below by McGrattan (1998), Case *et al.* (2001), Gordon (2003), Krugman (1999) and all the papers in the section on “Macroeconomics and Contemporary Problems” could be excellent starting points.

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

Midterm # 1: 20% ; Midterm # 2: 20 % ; Paper: 10%; Final: 50 %.

Occasional homework will be necessary for digesting the material, but it will not be graded nor will it count towards the course grade. It will instead be used to help you focus and digest the material. You may work in teams, on the homework, just as in the Fall semester.

## BOOKS

The course will draw heavily from several excellent textbooks and additional material from journals and unpublished sources. The first will be the principal text for the course, which is required:

David Romer, *Advanced Macroeconomics*, MacGraw-Hill, 3rd edition, 2006. (Referred to below by **R**).

An additional new textbook is recommended for your purchase, although little material will be used from it:

Lars Ljungqvist and Thomas J. Sargent, *Recursive Macroeconomic Theory*, MIT Press, 2nd edition, 2004. (Referred to below by **LS**).

In addition, we draw material from

Costas Azariadis, *Intertemporal Macroeconomics*, Blackwell Publishers, 1993. (Referred to below by **A**);

Olivier J. Blanchard and Stanley Fischer, *Lectures in Macroeconomics*, MIT Press, 1989 (Referred to below by **BF**),

Obstfeld, Maurice, and Kenneth Rogoff, *Foundations of International Macroeconomics*, MIT Press, 1996 (Referred to below by **OR**)

Woodford, Michael, *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press, 2003.

All these books and all other required readings below that are not accessible electronically will be put on 3-hour reserve in the Tisch library. Romer (2006) has been ordered by the Tufts bookstore as required text. Readings marked as downloadable from [www.nber.org](http://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.

The class aims at a dual objective, that is, first to continue from EC205 in providing an introduction to modern macroeconomics at an advanced level. This requires that you strengthen further your skills in advanced technical material. And, second, to demonstrate the use of these tools in contemporary 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. It will go beyond the first term and bring in an emphasis on monetary economies. The first semester will often be our starting point. If you find it familiar, please don't think you already know it. You might, but I will go considerably further than the first term.

To serve these two objectives, it is important that some of the class time be spent on additional technical material. The course assumes thorough 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!* For my undergraduate class, I use Blanchard, Olivier J., *Macroeconomics*, 4th edition, Prentice-Hall. An earlier edition is on reserve at Tisch. Alternatively, consider reading one of the other books on reserve, Alan J. Auerbach and Laurence Kotlikoff, *Macroeconomics: An Integrated Approach*, 2nd edition, MIT Press, 1998, or Robert Barro, *Macroeconomics*, 5th edition, MIT Press, 1997, which are also intermediate texts.

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. So, please do not despair if you come across very difficult material in your reading. If it is important for the class, it will most probably be clarified at the right time. I will hand out a set of homework problems and, occasionally, clarifying notes. I have also planned for some applications of the material to contemporary economic issues.

Macroeconomics is a rapidly changing field. We will get a sense of the scope of the continuous change, but you might find it useful to read two recent surveys: Blanchard, Olivier, "What Do We Know About Macroeconomics that Fisher and Wicksell Did Not?" *Quarterly Journal of Economics*, November 2000, 115:4, 1375-1410. And, Woodford, Michael "Revolution and Evolution in Twentieth-Century Macroeconomics," in P. Gifford, ed., *Frontiers of the Mind in the Twenty-First Century*, Harvard University Press, available at <http://www.columbia.edu/~mw2230/macro20C.pdf>.

These two papers will hopefully whet your appetite, but we may not be able to get to them in the class until the very end! So, please be patient!

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 [blackboard.tufts.edu](http://blackboard.tufts.edu). Still, it will be important for you to take good notes and to compare them within your groups. And above all, come and talk to me, ask me questions, *I am working for You!*

Material marked by \* is more advanced and not necessary for your understanding of the material. Sometimes, chapters are assigned in their entirety. Obviously, we will not be able

to cover everything. So, I will refine the reading assignment, each time a new section starts.

## OUTLINE

### 1 Introduction: A brief review the Solow (or descriptive) growth model

This will be done very quickly in order to refresh the first semester.

1. **A**, 3–5.
2. **R**, Ch. 1, 1–44.
3. 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

\* This is a continuous time treatment **R**, 48–76.

**A**, 68–84.

### 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.

1. An accessible self-contained treatment of the entire material is: Galor, Oded, *Introduction to Stability Analysis of Discrete Dynamical Systems*, September 18, 2003, manuscript; available at:  
[http://www.econ.brown.edu/fac/Oded\\_Galor/Book1.pdf](http://www.econ.brown.edu/fac/Oded_Galor/Book1.pdf) Referred to as: **G**.
2. A brief treatment is **A**, 6–12.
3. Scalar linear equations.  
**G**, 3–9. \***A**, 14–24.
4. Linear systems. **G**, 13–25, 51–51. \***A**, 33–45.
5. \*Nonlinear systems and dynamics. **A**, 52–67. **G**, 9–13,

### 3 Consumption, investment and economic growth

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

1. Ioannides notes
2. **OR**, Ch. 7, 440–445.  
An application on the benefits of international migration: **OR**, Ch. 7, 448–454.
3. **\*BF**, 37–58, 75–76.

### 4 The overlapping generations model and neoclassical growth

1. **R**, 76–92.
2. **\*A**, 195–205, 210–212.

#### 4.1 National Debt and Fiscal Policy, Ricardian Equivalence

1. Ioannides notes.
2. **R**, Chapter 11, 559–572.
3. **LS**, 312–322.
4. **\*A**, 291–326.

### 5 Topics in Endogenous Growth Theory

1. **LS**, Chapter 14, 449–472.
2. **R**, Chapter 3, 100–154.
3. McGrattan, Ellen R. (1998), “A Defence of AK Growth Models,” *Federal Reserve Bank of Minneapolis Economic Review*, 22, 4, Fall, 13–27;  
downloadable from: <http://minneapolisfed.org/research/qr/qr2242.pdf>

### 6 Business Cycle: Facts and Real Business Cycle Theory

1. **R**, Chapter 4, 174–216.
2. **BF**, Ch. 1, 1–29.

## 7 Life Cycle Optimization and Optimal Consumption and Investment Behavior: Applications

1. Consumption theory: **R**, Ch. 7, p. 346–380.
2. Investment theory: **R**, Ch. 8, 386–417;
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](http://www.nber.org/papers/w8606).

## 8 Models of monetary economies

1. Ioannides Notes.
2. **A**, 78–84, 377–391, 393–412.
3. \***BF**, Ch. 4, 152–205.
4. Bubbles, **BF**, Ch. 5, 226–234, 372–376.
5. \* Blanchard, Olivier, “Why Does Money Affect Output? A Survey,” in Benjamin Friedman and Frank Hahn eds., *Handbook of Monetary Economics*, North Holland, 1990, 779–835. Also downloadable: [www.nber.org/papers/w2285](http://www.nber.org/papers/w2285).

## 9 Keynesian macroeconomic theory as fixed-price equilibrium theory

Class lectures will be self-contained.

1. Ioannides notes.
2. **R**, Ch. 5, p. 222–266.
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. \*Barro, Chapter 20, “The Keynesian Theory of Business Fluctuations,” p. 757–806. (This is an elementary treatment.)

## 9.1 Imperfect Competition and Price Setting

Microeconomic Foundations of Incomplete Nominal Adjustment. Phillips curve, Lucas critique, stabilization policy, dynamic new Keynesian theory,

1. **R**, Ch. 6, 271–339.
2. Inflation and monetary policy:  
**R**, 496–552.
3. \* Woodford, Michael, *Interest and Prices*, Chapter 3.1, Optimizing Models with Nominal Rigidities. A Basic Sticky-Price Model, 143–173.
4. \* Woodford, M. , Chapter 3-2, Optimizing Models with Nominal Rigidities. Inflation Dynamics with Staggered Price Setting, 173–204.

## 10 Applications and Topics

### 10.1 Topics in Inflation and Monetary Policy

1. **R**, Ch. 10, 468–478, 492–503.
2. King, Robert, "The New IS-LM Model: Language, Logic, and Limits," *Economic Quarterly, Federal Reserve Bank of Richmond*, 86-3, Summer 2000, 45-103; downloadable from: [www.rich.frb.org/pubs/eq/pdfs/summer2000/king.pdf](http://www.rich.frb.org/pubs/eq/pdfs/summer2000/king.pdf).
3. \* Clarida, Richard, Jordi Galí, and Mark Gertler (2000), "Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory," *Quarterly Journal of Economics*, Volume CXV, November, 147–181. On reserve.
4. \* Clarida, Richard, Jordi Galí, and Mark Gertler (2001) "The Science of Monetary Policy," *Journal of Economic Literature*, ; downloadable from [www.nber.org/papers/w7147](http://www.nber.org/papers/w7147).

### 10.2 Macroeconomics and Contemporary Problems: Some Case Studies

1. The Information Economy
  - (a) Volatility of GDP and The Information Economy  
Blanchard, Olivier J., and John Simon, "The Long and Large Decline in U.S. Output Volatility," *Brookings Meeting on Economic Activity*, March 2001, 135–174. Downloadable from Tisch Library.
  - (b) The business cycle vs. the information economy  
Gordon, Robert J., "Exploding Productivity Growth: Context, Causes and Implications," *Brookings Papers on Economic Activity*, 2003, 2, 207–298. Downloadable from Tisch Library, or

<http://faculty-web.at.northwestern.edu/economics/gordon/Productivity-Brookings.pdf>

2. Blanchard, Olivier J., and Francesco Giavazzi “Current Account Deficits in the Euro Area. The End of the Feldstein–Horioka Puzzle?” *Brookings Papers on Economic Activity*, 2002; downloadable from:  
<http://econ-www.mit.edu/faculty/blanchar/files/draft1f3.pdf>.
3. The Finnish Economic Crisis: Honkapohja, Seppo, and Erkki Koskela (1999), “The Economic Crisis of the 1990s in Finland,” *Economic Policy*, 401–436. Available on line via Tisch.
4. Woodford, Michael, “Monetary Policy in the Information Age,” ; downloadable from:  
<http://www.kc.frb.org/PUBLICAT/SYMPOS/2001/papers/S02wood.pdf>. See also the discussion, and why not, if you are curious the entire Kansas City Fed Symposium on Economic Policy for the Information Economy, proceedings at:  
<http://www.kc.frb.org/PUBLICAT/SYMPOS/2001/sym01prg.htm>.
5. Pissarides, “Unemployment in Britain, A Success Story,”  
<http://econ.lse.ac.uk/staff/cap/unemploymentpaper.pdf>
6. An Application of The IS-LM Approach: The Economic Crisis in Japan in the 1990s  
Krugman, Paul (1999), “It’s Baaack! Japan’s Slump and The Return of The Liquidity Trap,” *Brookings Papers on Economic Activity*, 2.  
Was Krugman right?

## 11 Summing up

This will serve to sum up both semesters.

Blanchard, Olivier J. (2000) “What Do We Know about Macroeconomics that Fisher and Wicksell Did not?” *Quarterly Journal of Economics*, Volume CXV, November, 1375–1409. [Online](#).

Woodford, Michael “Revolution and Evolution in Twentieth-Century Macroeconomics,” in P. Gifford, ed., *Frontiers of the Mind in the Twenty-First Century*, Harvard University Press, available at <http://www.columbia.edu/mw2230/macro20C.pdf> .