

14.451 – 14.452 Macroeconomics I  
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The web page for the course is:

<http://web.mit.edu/blanchar/www/courses/451.html>. It contains the reading list, together with links to articles when available, and will contain the hand-outs distributed during the course.

This course is the first of a 2-semester sequence in macroeconomics. Its purpose is to:

- Introduce the basic choices (consumption/saving, investment, ...) and mechanisms of macroeconomics.
- Study their general equilibrium implications.
- Use this approach to think about fluctuations.
- Use this approach to think about growth.

The purpose of the second semester course (453-454) is to explore a number of important extensions (implications of uncertainty, of imperfections in labor, goods, financial markets), and point to what is currently understood about their general equilibrium implications.

This course assumes familiarity with macroeconomics at the level of undergraduate macro-textbooks (you will get *much more* out of the course if you are very familiar with macroeconomics at the intermediate undergraduate level.)

There is no textbook for the course. We shall however often use material from:

Blanchard, O. and Fischer, S., *Lectures on Macroeconomics*, MIT Press, Cambridge, 1989 (BF in what follows).

A number of other textbooks provide alternative treatments of a number of issues. The first, by David Romer, covers roughly the same issues at a slightly lower level than BF. The second, by Maurice Obstfeld and Kenneth Rogoff, focuses on open economy issues. The third and fourth, by Robert Barro and Xavier Sala-i-Martin, and by Philippe Aghion and Peter Howitt focus on growth:

David Romer, *Advanced Macroeconomics*, McGraw Hill 1996.  
(DR in what follows).

Maurice Obstfeld and Kenneth Rogoff, *Foundations of International Economics*, MIT Press 1996 (OR in what follows).

Robert Barro and Xavier Sala-i-Martin, *Economic Growth*, McGraw Hill, 1995  
(BS in what follows).

Philippe Aghion and Peter Howitt, *Endogenous Growth Theory*, MIT Press, 1998 (AH in what follows).

Macroeconomics is a rapidly changing field. To get a sense of the geography, you may find it useful to read two recent surveys:

Olivier Blanchard, "What Do We Know About Macroeconomics that Fisher and Wicksell Did Not?", mimeo MIT, 1999  
<http://web.mit.edu/blanchar/www/draftweb1.pdf>

Michael Woodford, "Revolution and Evolution in Twentieth-Century Macroeconomics", mimeo Princeton, June 1999  
<http://www.princeton.edu/~woodford/macro20C.pdf>

The course is organized around 12 topics. For each topic, we have included basic readings, as well as a few papers showing applications or extensions of the basic model. A star denotes required reading.

## 1. THE CONSUMPTION/SAVING CHOICE.

Focus on the consumption/saving choice, with implications for capital accumulation. The Ramsey model, with centralized or decentralized interpretations. The role of the term structure of interest rates in clearing the goods market. Introducing the government. Ricardian equivalence.

☆ BF, Chapter 2-1 to 2-3, 2-5 (OR, Chapter 1-1; DR, Chapter 2-A; BS, Chapter 2).

Barro, R., "Ramsey Meets Laibson in the Neo-Classical Growth Model", QJE November 1999, 114-4, 1125-1152.

BF, Chapter 6-2.

## 2. THE INVESTMENT DECISION.

Introducing adjustment costs to capital accumulation in the Ramsey model. Centralized and decentralized interpretations. The  $q$  theory. The stock market and investment. Investment, saving, and the current account in a small open economy.

☆ BF, Chapter 2-4 (DR, Chapter 8; OR, Chapter 1, Chapter 2-1, 2-2, 2-5).

Kraay, Aart, and Jaume Ventura, "Current Accounts in Debtor and Creditor Countries", mimeo MIT, August 1999.

<http://web.mit.edu/jaume/www/cadc.pdf>

## 3. FINITE HORIZONS.

Overlapping generations, aggregate consumption and saving, capital accumulation. Dynamic efficiency, Pareto optimality. Implications of alternative social security systems. Implications of demographic changes. Bubbles, existence and implications.

☆ BF, Chapter 3, 5-1, 5-2 (DR, Chapter 2-B; OR, Chapter 3; BS Chapter 3-4 and appendix).

Auerbach, A, and L. Kotlikoff, *Dynamic Fiscal Policy*, Cambridge University Press, 1987, Chapters 3, 10, 11.

Diamond, P., "Macroeconomic Aspects of Social Security Reform", *BPEA*, 1997-2, 1-88.

K. Mc Morrow and W. Roeger, "The Economic Consequences of Ageing Populations" OECD Economic Papers, 138, November 1999.

## 4. INTRODUCING TWO GOODS.

What if foreign goods and domestic goods are imperfect substitutes? What if some goods are tradable and others not? Revisiting saving, investment,

and the current account. Movements in the terms of trade, in the real exchange rate.

- ☆ Obstfeld, M., and K. Rogoff, "The Intertemporal Approach to the Current Account", Chapter 34, *Handbook of International Economics*, Volume III, G. Grossman and K. Rogoff eds, 1731-1799 (OR, Chapter 4).

Dornbusch, R., "Real Interest Rates, Home Goods, and Optimal External Borrowing", *JPE* 1983, 91-1, 141-153.

<http://www.jstor.org/cgi-bin/jstor/viewitem.fcgi/00223808/di951017/95p0044c/0?>

## 5. INTRODUCING MONEY.

Money flows and the demand for money. Cash in advance models. Money in the utility function. The effects of money growth on capital accumulation. Dynamics of hyperinflation. The Cagan model. The budget deficit and money growth.

- ☆ BF, Chapter 4-3 to 4-7, and 10-2. (DR, Chapter 9-7; OR Chapter 8).

Dornbusch, R., Sturzenegger, F. and H. Wolf, "Extreme Inflation: Dynamics and Stabilization", *BPEA*, 1990-2, 1-84.

## 6. FLUCTUATIONS I. LOOKING AT THE FACTS.

Shocks and Propagation mechanisms. Wold representation. ARMA's, VARs, SVARS. Stochastic trends. Covariances. The co-movement of the components of GDP. The correlations of output and money. The correlation between real wages and output. What if the economy is non linear? What if there are multiple equilibria?

- ☆ BF, Chapter 1.

Stock, J. and Watson, M., "Business Cycle Fluctuations in U.S. Macroeconomic Time Series", NBER Working Paper 6528, April 1998.

<http://papers.nber.org/papers/w6528>

Abraham, K. and J. Haltiwanger, "Real Wages and the Business Cycle", *JEL*, September 1995, volume 33-3, 1215-1264.

Christiano, L., Eichenbaum M., and C. Evans, "The Effects of Monetary Policy Shocks: Evidence from the Flow of Funds", *REStat*, February 1996, 78-1, 16-34.

## 7. FLUCTUATIONS II. RBCS AND SHOCKS TO TECHNOLOGY.

Dynamic effects of technological shocks. Endogenizing labor supply. The cyclical behavior of total factor productivity growth.

☆ BF, Chapter 7.

Prescott, E., "Theory Ahead of Business Cycle Measurement", *Quarterly Review, Fed of Minneapolis*, Fall 1986, 9-22.  
<http://woodrow.mpls.frb.fed.us/research/qr/qr1042.pdf>

McCallum, B., "Real Business Cycle Models", in Robert Barro, ed, *Modern Business Cycle Theory*, Harvard University Press, 1989.

Campbell J., "Inspecting the Mechanism: An Analytical Approach to the Stochastic Growth Model", *JME*, 33, June 1994, 463-506.

Basu, S., "Procyclical Productivity, Increasing Returns, or Cyclical Utilization?", *QJE*, 111-3, August 1996, 719-752.

## 8. FLUCTUATIONS III. MONEY, AGGREGATE DEMAND, AND OUTPUT.

Why does money affect output? What about other shifts in aggregate demand? Nominal rigidities, money and output. Time dependent, and state dependent rules. Indexation. Macro-implications of the choice of the numeraire.

☆ Blanchard, O., "Why Does Money Affect Output? A Survey", in B.M. Friedman and F.H. Hahn eds, *Handbook of Monetary Economics*, North Holland, 1990, 779-835 (BF, Chapter 8; DR, Chapters 5 and 6).

Kimball, M., "The Quantitative Analytics of The Basic Neomonetarist Model", *JMCB*, November 1995, 27-4-2, 1241-1289.

Chari, V.V., P. Kehoe, and E. McGrattan, "Sticky Price Models of the Business Cycle: Can the Contract Multiplier Solve the Persistence Problem", FRB of Minneapolis staff paper 217, May 1998.  
<http://woodrow.mpls.frb.fed.us/research/sr/sr217.pdf>

## 9. FLUCTUATIONS IV. GOODS, FINANCIAL AND LABOR MARKETS.

Modern versions of the IS-LM-PC. Credit and Money. Expectations, fiscal and monetary policy. The fiscal theory of the price level. Monetary rules. Liquidity traps.

- ☆ McCallum, B., and E. Nelson, "An Optimizing IS-LM Specification for Monetary Policy and Business Cycle Analysis", NBER WP 5875, January 1997.  
<http://papers.nber.org/papers/w5875>
- ☆ Clarida, R., J. Gali, and M. Gertler, "The Science of Monetary Policy: A New Keynesian Perspective", NBER working paper 7147, May 1999.  
<http://papers.nber.org/papers/w7147>

Bernanke, B., and F. Mishkin, "Inflation Targeting: A New Framework for Monetary Policy?", *JEP*, Spring 1997.

Woodford, M., "Price-Level Determination Under Interest-Rate Rules", manuscript, Princeton, April 1999.  
<http://www.princeton.edu/~woodford/chap2.pdf>

Buiter, W., "The Fallacy of the Fiscal Theory of the Price Level", NBER working paper 7302, August 1999.  
<http://papers.nber.org/papers/w7302>

- ☆ Blanchard, O., "Output, The Stock Market, and Interest Rates", *AER*, March 1981, 71-1, 132-143.  
<http://www.jstor.org/cgi-bin/jstor/viewitem.fcgi/00028282/di950072/95p0130h/0?>

- ☆ Giavazzi, F., and M. Pagano, "Non-Keynesian Effects of Fiscal Policy Changes: International Evidence and the Swedish Experience", NBER working paper 5332, November 1995.  
<http://papers.nber.org/papers/w5332>

Alesina, A., S. Ardagna, R. Perotti, F. Schiantarelli, "Fiscal Policy, Profits, and Investment", NBER WP 7207, July 1999.  
<http://papers.nber.org/papers/w7207>

Krugman, P. "It is baaack: Japan's Slump and the Return of the Liquidity Trap", *BPEA*, 1998-2, 137-205.  
[http://web.mit.edu/krugman/www/bpea\\_jp.pdf](http://web.mit.edu/krugman/www/bpea_jp.pdf)

## 10. FLUCTUATIONS V. BACK TO THE OPEN ECONOMY.

Monetary policy, interest rates, and exchange rates. Exchange rate regimes. Exchange rate crises.

☆ Dornbusch, R., "Expectations and Exchange Rate Dynamics",  
*JPE*, December 1976, 84, 1161-1176.  
<http://www.jstor.org/fcgi-bin/jstor/viewitem.fcgi/00223808/di950977/95p0113p/0?>

☆ Obstfeld, R., and Rogoff, K., "Exchange Rate Dynamics Redux",  
*JPE*, June 1995. (OR: Chapters 9 and 10).

Jeanne, O. "Currency Crises: A Perspective on Recent Theoretical  
Developments", CEPR DP 2170, June 1999.

## 11. GROWTH I. CAPITAL ACCUMULATION AND TECHNOLOGICAL PROGRESS.

The facts of growth. Growth accounting. The Solow residual. The role of  
capital accumulation and technological progress in neo-classical models of  
growth. Human capital. AK models. Malthusian and growth regimes.

☆ BS. Chapter 4-1, 4-2 (DR, Chapters 1 and 3B, AH 1-4, 1-5).

☆ Solow, R., "A Contribution to the Theory of Economic Growth",  
*QJE*, February 1956.  
<http://www.jstor.org/fcgi-bin/jstor/viewitem.fcgi/00335533/di951743/95p0039f/0?>

Lucas, R., "On the Mechanics of Economic Development",  
*JME*, 22, July 1988, 3-42.

☆ Mankiw, N.G., Romer, D., and Weil, D., "A Contribution to the Empirics of  
Economic Growth", *QJE* 107, May 1992, 407-437.  
<http://www.jstor.org/fcgi-bin/jstor/viewitem.fcgi/00335533/di976338/97p00385/0?>

Ventura, J. "Growth and Interdependence", *QJE*, February 1997,  
112-1, 57-84.

☆ Rivera-Batiz, L. and Romer P., "Economic integration and endogenous  
growth", *QJE*, May 1991, 106-2, 531-556.  
<http://www.jstor.org/fcgi-bin/jstor/viewitem.fcgi/00335533/di971081/97p0038r/0?>

OR, Chapter 7.

## 12. GROWTH II. FOCUSING ON TECHNOLOGICAL PROGRESS.

New products, new methods of production, and growth. Role and Determinants of R&D. Patent laws. Role of institutions, of geography.

☆ DR Chapter 3A (BS, Chapters 6 to 8).

☆ AH Chapter 2.

Jones, C. "R&D-based Models of Economic Growth", *JPE*, August 1995, 103, 759-784.

Hall, R, and C. Jones, "Why Do Some Countries Produce So Much More Output per Worker than Others?", *QJE*, February 1999, 114-1, 83-116.