

**George Mason University
Department of Economics
Economics 715
Macroeconomics Theory I
Fall Semester 2015**

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I. Introduction

This course is the first one (of two) in our first-year macroeconomics Ph.D. sequence required for all doctoral students. The course will introduce you to the main topics in growth (about half of the course), as well as traditional issues in short-term economic fluctuations (the other half of the course). In the process you are expected to (and hopefully will) develop basic analytical skills (see mathematical preliminaries handout) necessary to understand and solve macroeconomic models.

For obvious reasons, the course is designed for Ph.D. students in economics. Prerequisites include macroeconomics at the undergraduate level, as well as a good understanding of calculus and basic differential equations. Students are expected to be thoroughly familiar with the material in any of the following intermediate macroeconomics texts:

- (a) Macroeconomics (R. Dornbusch, S. Fisher, and R. Startz), 12th Edition.
- (b) Macroeconomics: Economic Growth, Fluctuations, and Policy (Robert Hall & David H. Papell) 6th edition.
- (c) Macroeconomics (N.G. Mankiw) 9th edition. This is the best selling undergraduate macroeconomics textbook.
- (d) Macroeconomics (A. Abel, B. Bernanke, and D. Croushore) 8th edition.

The second course in this series, Macroeconomic Theory II, is taught by Professor Larry White. There is also an advanced macroeconomic dynamics course taught by Professor David Eil. Professor Eil's course does not form part of the required macro sequence, but is nonetheless highly recommended for students who wish to specialize in macroeconomics, or students considering doing **Experimental Economics** as one of their fields.

II. Class Requirements:

This class requires a great amount of commitment and dedication. There will be a midterm (October 19, 2015) and a final (December 14, 2015). The midterm will count for 40% of your grade. The comprehensive final examination will determine 55% of the final grade. The remaining 5% will come from doing problem sets.

There will be 10 problem sets throughout the semester to help you keep up with the work. Each problem set is worth a maximum of 1 point (if you make an honest effort to complete it you will most likely receive the full point). Thus, all problem sets combined are worth 10 points. (The last problem set, on unemployment, is optional. Everyone gets 1 point only for that one.) While 10 points may not seem like a lot, it is high enough to make a difference at the margin—say, from a B+ to an A-. Getting together in small groups to solve homework problems IS allowed. Students in the past have found this to be very helpful and instructive. Solutions to the problem sets will be distributed one week after the problem set is announced (typically after the conclusion of the relevant lecture). The homework due dates are printed in this syllabus further below.

III. Books:

While there are many macroeconomic textbooks at the undergraduate level, there are only a few at the graduate level. David Romer's macroeconomics textbook has now become a standard textbook in most graduate programs. We will, of course, use this book in this course. Nonetheless, there are a few other books that specialize in different subfields within macroeconomics. Some of these books are listed below.

A. Required:

1. David Romer. Advanced Macroeconomics. McGraw Hill. (abbreviation: AM). Latest Edition.
2. Diamond, Jared. Guns, Germs, and Steel. Norton 1997. A very good and readable account of growth and development from an evolutionary perspective. Available in general bookstores like Barnes and Noble (or BarnesandNoble.com), Borders, or online.
3. Landes, David. The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor. Norton 1998. Also a very good and readable account of growth and development from an economic historian perspective. Available in general bookstores like Barnes and Noble (or BarnesandNoble.com), Borders, or online.

B. Recommended:

1. O. Blanchard and S. Fisher. Lectures on Macroeconomics. MIT press. (abbreviation: LOM) The best reference text on general macroeconomic models.
2. Robert Barro and X. Sala-i-Martin. Economic Growth. MIT Press. (abbreviation: EG) A very good complement to chapters 1 through 3 of Romer's text.

There are other excellent textbooks on economic growth, which you may consider purchasing if you wish to gain a more detailed understanding on this topic: Daron Acemoglu Introduction to Modern Economic Growth (Princeton University Press) and Charles I. Jones Introduction to Economic Growth (W.W. Norton & Co.).

3. Dynamic Macroeconomic Theory, by Thomas Sargent. Harvard University Press. Although none of the lectures will come directly from this book, we will briefly talk about some of the dynamic models discussed in it. I recommend this book for those of you who would like to continue advanced macroeconomic modeling.

IV. GMU Honor Code:

It is understood that students who sign up for this course entirely agree and accept GMU's Honor Code: "Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work." Source: <http://www.gmu.edu/catalog/apolicies/#Anchor13>

Students in violation of this code will be referred to the Honor Committee.

V. Important dates for this semester:

Last Day to Add (Full-Semester Course)	September 8, 2015
Last Day to Drop (Full-Semester Course)	October 2, 2015

VI. Students with disabilities

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.

VII. Cell Phones/Smart phones/iPhones/ etc.

All of these telecommunication devices should be **OFF** during class, and **especially during examinations**. They are extremely disturbing and distracting to your fellow classmates.

VIII. Readings and Class Schedule:

<i>Lecture Number</i>	<i>Lecture Topics</i>	<i>Readings</i>	<i>Homework</i>
#0	• Introduction • Mathematical Preliminaries	• Handout on Basic Mathematical Methods	To be distributed in class. Due: 9/14/15
#1	• Economic Growth I: Solow; Convergence	• Chapter 1, AM	AM: 1.1, 1.2, 1.3, 1.4, 1.5, 1.8 And * below Due: 9/21/15
#2	• Economic Growth II: Ramsey-Cass-Koopmans	• Chp. 2, Part A, AM • Chp. 2, LOM	AM: 2.1, 2.3, 2.4, 2.6, 2.7, 2.11 Due: 9/28/15
#3	• Economic Growth III: OLG models	• Chp. 2, Part B, AM • Chp. 3, LOM	AM: 2.14, 2.16, 2.17 Due: 10/5/15
#4	• Economic Growth IV: Human Capital and Endogenous Growth	• Chp. 3, AM; articles from reading list	AM: 3.1, 3.2, 3.4, 3.5, 3.14 Due: 10/13/15
#5	• Economic Growth V: Empirical Evidence and Convergence Again	• Chp. 4, AM; (EG); articles from reading list	AM: 4.12 Due: Optional, but helpful for the Midterm
OCTOBER 19th, 2015	MIDTERM EXAM		
#6	• Intro to SR Macro, Microfoundations, New Keynesian economics.	• Chp. 6, AM • Chp. 8, LOM	AM: 6.10, 6.14, 6.15 Due: 10/27/15
#7	• Intro to DSGE Models—simulating an RBC	• Chp. 5, AM • Chp. 10, LOM	In class exercise (time permitting). Please bring a laptop with Excel.
#8	• Consumption: Theory and Evidence	• Chp. 8, AM	AM: 8.1, 8.2, 8.6, 8.7 Due: 11/16/15
#9	• Investment: Keynesian; Neoclassical and q-theory	• Chp. 9, AM	AM: 9.1, 9.3, 9.6, 9.7, 9.8 Due: 11/23/15
#10	• Financial Markets I: Asymmetric Info./Liquidity		
#11	• Keynesian Economics: Traditional Models; Open Economy Issues; Recessions RCK with Hamiltonians (time permitting)		AM: 6.3, 6.6 Due: 12/7/15
#12	• Unemployment	• Chp. 10, AM	AM: 10.1, 10.2, 10.5, 10.11 Due: Optional, but helpful for the Final Exam.

*Addendum to Homework Due on 9/15/2015. Visit <http://www.bls.gov/lpc/home.htm#overview> and answer the following questions: 1. How does the Bureau of Labor Statistics measure labor productivity? 2. What is the latest productivity figure? 3. What has happened to productivity over time in the US since the 1980s? 4. What are some of the explanations that people offer to explain changes in productivity trends? 5. Why is the productivity slowdown debate important?

V. Readings

Supplement for class lectures

("*" readings are more important. All readings are available on line through GMU library's electronic journals link, or are otherwise available on reserve.)

Lecture 1:

http://en.wikipedia.org/wiki/Exogenous_growth_model --This is a great introduction to the Solow growth model.

Romer, Paul (1987). "Crazy Explanations for the Productivity Slowdown," *NBER Macroeconomics Annual* 2, pp. 163-201

Gordon, Robert J. (2010) Revisiting U. S. Productivity Growth Over the Past Century with a View to the Future, *NBER Working Paper 15834* <http://www.nber.org/papers/w15834>

Loren Brandt, Johannes Van Biesebroeck, and Yifan Zhang (2011) "Creative Accounting or Creative Destruction? Firm-level Productivity Growth in Chinese Manufacturing" *Journal of Development Economics*. Also available as: *NBER Working Paper No. 15152* July 2009

Lecture 2:

Lei, Vivian and Charles N. Noussair "An Experimental Test of an Optimal Growth Model," *American Economic Review*, June 2002, 92(3) pp. 549 - 70. (This paper tests the RCK model using experimental economics.)

Lecture 3:

Barsky, Robert B., N.G. Mankiw, and Stephen Zeldes (1986) "Ricardian Consumers with Keynesian Propensities," *American Economic Review* 76 (September) pp. 676-691

Lecture 4:

*Mankiw, N. Gregory, David Romer, and David N. Weil (1992) "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics* 107 (May), pp. 407-437

Lucas, Robert (1988) "On the Mechanics of Economic Development," *Journal of Monetary Economics* 22 (July) pp. 3-42

Murphy, Kevin, Andrei Shleifer, and Robert Vishny (1989) "Industrialization and the Big Push," *Journal of Political Economy* 97 (October) pp. 1003-1026

Romer, Paul (1990) "Endogenous Technological Change," *Journal of Political Economy* 98 (October, Part 2) pp. S71-S102

Baumol, William (1990) "Entrepreneurship: Productive, Unproductive, and Destructive," *Journal of Political Economy* 98 (October, Part I) pp. 893-921

Lecture 5:

*Diamond, Jared. Guns, Germs, and Steel. Norton 1997. pp. 13-32, 85-113, 405-425.

Easterly, William and Ross Levine (2001) "It's Not Factor Accumulation: Stylized Facts and Growth Models," March, (available on line from www.ssrn.com. Web address: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=269108).

*Kremer, Michael (1993) "Population Growth and Technological Change: One Million B.C. to 1990," *Quarterly Journal of Economics* 108 (August) pp. 681-716

*Landes, David. The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor. Norton 1998. pp. 200 - 291

*Barro, Robert J. (1991) "Economic Growth in a Cross Section of Countries." *Quarterly Journal of Economics* 106 (May), pp. 407-43.

Sachs, Jeffrey D. (2003) "Institutions Matter, but Not for Everything," *Finance and Development*, June, pp. 38 – 41.

*Durlauf, Steven N. and Danny Quah (1999) "The new empirics of economic growth" in John B. Taylor and Michael Woodford, eds., *Handbook of Macroeconomics*, North-Holland Elsevier Science, Ch. 4, pp. 231—304.

Acemoglu, Daron, Simon Johnson, and James A. Robinson (2004). "Institutions as the Fundamental Cause of Long-Run Growth." <http://www.nber.org/papers/w10481>.

Bils, Mark J. and Peter J. Klenow (2000) "Does Schooling Cause Growth?" *American Economic Review*, December, pp. 1160-1183.

Jones, Charles I. (1999) "Growth: With or Without Scale Effects?" *American Economic Review* 89 (May), pp. 139-44.

Pritchett, Lant (1997) "Divergence, Big Time," *Journal of Economic Perspectives*, Vol. 11 (Summer), pp. 3-17.

Brander, J.A., and M. Scott Taylor, "The Simple Economics of Easter Island: A Ricardo-Malthus Model of Renewable Resource Use," *American Economic Review*, 88(1) March 1998, 119-138. (An environmental model of growth.)

Gennaioli, Nicola, Rafael La Porta, Florencio Lopez de Silanes, Andrei Shleifer (2013) "Growth in Regions," Working Paper 18937 <http://www.nber.org/papers/w18937>

Gurus in Economic Growth

If you are interested in finding out more about issues in growth, you should visit the following websites:

1. http://en.wikipedia.org/wiki/Daron_Acemoglu
2. http://www.econtalk.org/archives/2006/07/an_interview_wi_1.html (Russ Roberts interviews Robert Barro.)
3. Charles I. Jones (<http://www.stanford.edu/~chadj/>)

Lecture 6:

Blinder, Alan (1991) "Why are Prices Sticky? Preliminary Results from an Interview Study," *American Economic Review Papers and Proceedings* 81 (May) pp. 89-101

http://en.wikipedia.org/wiki/New_Keynesian_economics -- Offers an introduction to what New Keynesian economics are all about.

Gray, Jo Anna (1976) "Wage Indexation: A Macroeconomic Approach," *Journal of Monetary Economics* 2 (April) pp. 221-235

Fisher, Stanley (1977) "Long-Term Contracts, Rational Expectations, and the Optimal Money Supply Rule," *Journal of Political Economy* 85 (February) pp. 191-205, (Also in Mankiw and Romer (1991), Vol. 1, Chapter 7)

Mankiw, N. Gregory and David Romer (1991) *New Keynesian Economics: Vols. I*, MIT Press (Read Chps. 1, 3, 6)

Ball, Laurence, N.G. Mankiw, and David Romer (1988) "The New Keynesian Economics and Output-Inflation Tradeoff," *Brookings Papers on Economic Activity* 1, pp. 1-65 (Also in Mankiw and Romer (1991), Vol. 1, Chap. 6)

Romer, David (1993) "The New Keynesian Synthesis," *Journal of Economic Perspectives* 7, pp. 5-22

Blanchard Olivier, and Jordi Gali (2005) "Real Wage Rigidities and the New Keynesian Model" *NBER Working Paper No. 11806*

Bils, Mark J. (1985) "Real Wages Over the Business Cycle: Evidence from Panel Data," *Journal of Political Economy* 93, pp. 666-689

Solon, Gary, Robert Barsky, and Jonathan Parker (1994) "Measuring the Cyclicalities of Real Wages: How Important is the Composition Bias?" *Quarterly Journal of Economics* 109 (February) pp. 1-25

Lucas, Robert (1976) "Econometric Policy Evaluation: A Critique," *Carnegie-Rochester Conference Series on Public Policy* 1, pp. 19-46

*Lucas, Robert E. (1981) "Understanding Business Cycles" in Robert Lucas, ed. *Studies in Business Cycle Theory*, MIT Press

*Lucas, Robert E. (1972) "Expectations and the Neutrality of Money," *Journal of Economic Theory* 4 (April), pp. 103-124

Lecture 7:

Introduction to DSGE modeling. Simulation of an RBC model.

King, R.G., and S.T. Rebelo (1999) 'Resuscitating real business cycles' in *Handbook of Macroeconomics*, volume 1B, by J.B. Taylor and M. Woodford (Eds), Elsevier, 927–1007. (Just Google the title, and you will find it online.)

More complete models are discussed in David Romer's AM Chapter 7.

Lecture 8:

Keynes, John M. (1936) The General Theory of Employment, Interest, and Money. Macmillan pp. 65-110

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

Hall, Robert (1988) "Intertemporal Substitution and Consumption," *Journal of Political Economy* 96 (April), pp. 339-357

Flavin, Majorie (1981) "The Adjustment of Consumption to Changing Expectations about Future Income," *Journal of Political Economy* 89 (October) pp. 974 - 1009

Campbell, John and N. Gregory Mankiw (1989) "Consumption, Income, and Interest Rates: Reinterpreting the Time Series Evidence," *NBER Macroeconomics Annual* 4, pp. 185-216

Mehra, Rajnish and Edward C. Prescott (1985) "The Equity Premium: A Puzzle," *Journal of Monetary Economics* 15 (March), pp. 145-161

Mankiw, N.Gregory (1986) "The Equity Premium and the Concentration of Aggregate Shocks," *Journal of Financial Economics* 17 (September), pp. 211-219

Carroll, Christopher D., J. Overland, and D. N. Weil (2000) "Savings and Growth with Habit Formation," *American Economic Review*, Vol. 90, No. 3, June, pp. 341-355.

Lecture 9:

*Hall, Robert E. and Dale Jorgenson (1967) "Tax Policy and Investment Behavior." *American Economic Review* 57 (June), pp. 391-414

Caballero, Ricardo J. (1997) "Aggregate Investment" NBER Working Paper No. W6264.

Hayashi, Fumio (1982) "Tobin's Marginal Q and Average Q: A Neoclassical Interpretation." *Econometrica* 50 (January), pp. 213-224

Poterba, James (1984) "Tax Subsidies to Owner-Occupied Housing: An Asset-Market Approach." *Quarterly Journal of Economics* 99 (November), pp. 729-752

*Summers, Lawrence (1981) "Taxation and Corporate Investment: A Q-Theory Approach." *Brookings Papers on Economic Activity* 1, pp. 67-127

Lecture 10:

*Stiglitz, Joseph and Andrew Weiss (1981) "Credit Rationing in Markets with Imperfect Information." *American Economic Review* 71, pp. 393-410

*Bernanke, Ben and Alan Blinder (1988) "Credit, Money, and Aggregate Demand." *American Economic Review* 78 (May), pp. 435-439.

*Bernanke, Ben and Mark Getler (1989) "Agency Costs, Net Worth, and Business Fluctuations." *American Economic Review* 79 (March), pp. 14-31

Diamond, Douglas (1984) "Financial Intermediation and Delegated Monitoring." *Review of Economic Studies* 51 (July), pp. 393-414

Gorton, Gary B. (2008) "The Panic of 2007" *National Bureau of Economic Research Working paper number* 14358. This paper offers an overview of the ongoing financial crisis in the U.S.

Brunnermeier, Markus K. (2009) Deciphering the Liquidity and Credit Crunch 2007-08, *Journal of Economic Perspectives*, Vol. 23, No. 1. Available as NBER Working Paper Number 14612. This paper also offers a very detailed overview of the ongoing crisis.

*Bernanke, Ben (1983) "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression." *American Economic Review* 73 (June), pp. 257-276

*Fazzari, Steven, R. Glenn Hubbard, and Bruce C. Petersen (1988) "Financing Constraints and Corporate Investment." *Brookings Papers on Economic Activity* 1, pp. 141-195

*Getler, Mark and Simon Gilchrist (1994) "Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms." *Quarterly Journal of Economics* 109 (May), pp. 309-340

*Hubbard, R. Glenn (1998) "Capital Market Imperfections and Investment," *Journal of Economic Literature* 36, pp. 193-225

Kiyotaki, Nobuhiro, and John Moore (1995) "Credit Cycles." *National Bureau of Economics Research Working Paper No. 5083* (April)

Pagano, Marco (1993) "Financial Markets and Growth, An Overview." *European Economic Review* 37, pp.613-622

Bertrand Marianne, and Sendhil Mullainathan (2005) "Profitable Investments or Dissipated Cash? Evidence on the Investment-Cash Flow Relationship From Oil and Gas Lease Bidding" *NBER Working Paper No. 11126*

Lecture 11:

*For a good introduction to the Mundell-Fleming model, visit the following website:
http://en.wikipedia.org/wiki/Mundell-Fleming_model

Friedman, Benjamin (1988) "Lessons on Monetary Policy from the 1980s," *Journal of Economic Perspectives* 2 (Summer) pp. 51-72

Friedman, Milton (1968) "The Role of Monetary Policy," *American Economic Review* 58 (March) pp. 1-17

Joan Sweeney, Richard James Sweeney (1977) Monetary Theory and the Great Capitol Hill Baby Sitting Co-op Crisis: Comment, *Journal of Money, Credit, and Banking*, Issue 1, pp. 86-89.

Lecture 12:

Introduction to the main issues: <http://en.wikipedia.org/wiki/Unemployment>

*Yellen, Janet L. (1984) "Efficiency-Wage Models of Unemployment," *American Economic Review* 74 (May), pp. 200-205

Shapiro, Carl and Joseph E. Stiglitz (1991), "Efficiency Wages and the Interindustry Wage Structure"

Blanchard and Summers (1991). "Hysteresis in Unemployment" In Mankiw and Romer (1991)

Blanchard, Olivier and Katz, Larry (1999) "Wage Dynamics: Reconciling Theory and Evidence" NBER Working Paper No. 6924

Putting it all together:

*Read the following article. In the final exam you may be asked to do both: defend it (Are there any good points? Which ones? Why?) and criticize it (What's wrong with it?)

<http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html?pagewanted=all>

(How Did Economists Get it So Wrong? by Paul Krugman, *New York Times*, September 2, 2009.)