

14E028

6 ECTS

Advanced Macroeconomics III

Overview and Objectives

PART I

In this course, we study business cycles. We ask ourselves why and how the economy fluctuates around its growth path. In the first half of this course, we focus on the labor market, asking the question: why is the unemployment rate sometimes 2% and sometimes 12%? In this half, we consider only real models, i.e. models without money, in which business cycles are driven by technology shocks. We discuss the two dominant classes of models. The real business cycle (RBC) model is basically the neoclassical growth model extended with a labor supply choice. If we interpret hours worked by the representative worker as a measure of aggregate employment, then we can use the model to describe fluctuations on the labor market. In search and matching models on the other hand, there is a continuum of workers and a continuum of firms. In these models, labor fluctuates along the extensive margin, i.e. the number of employed workers varies rather than the number of hours that each employee works. Neither model performs well at matching the data on business cycle fluctuations on the labor market. We discuss various extensions that have been proposed to improve the models.

PART II

This part of the course will provide an overview of the literature on monetary aspects of the business cycle, with a special emphasis on optimizing sticky price models, their associated inflation dynamics, and their implications for monetary policy. We will cover both the main theoretical models as well as some relevant empirical evidence. Lecture notes and problem sets will be handed out during the course.

Course Outline

PART I

1. Real Business Cycle models
2. Solving linear(ized) Rational Expectations models
3. Business Cycles: Data and Facts
4. Empirical performance of the RBC model
5. Search and Matching models
6. Empirical performance of the search model

PART II

1. The Classical Monetary Model
2. The Basic New Keynesian Model
3. Monetary Policy Design in the Basic New Keynesian Model
4. Extensions

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Required Activities

PART I

The problem sets are meant to help you understand the material and prepare for the exam. There will be a problem set each week, posted on the course website after the second lecture and due at the beginning of the first lecture the week after. Solutions that are handed in late will not be graded. You are encouraged to do the problem sets in groups of 2 or 3 students. Please hand in one copy of the solutions for the group. I strongly recommend you not to divide up the problems, but rather to work on all problems together. It will be hard to pass the exam without the practice you get from doing all problems. The TA will discuss the problem sets in the practice session. No written solutions will be made available, so you should make sure to attend the practice sessions if you have problems solving the problem sets.

PART II

There will be weekly problems sets..

Evaluation

PART I

Your grade for this half of the course will be based on weekly problem sets (20%) and an exam (80%). Your final course grade will be the simple average of your grades in the first and second halves of the course.

PART II

Final exam (80%), Problem sets (20%)

Materials

PART I

I will update the reading list as we go along, so please check the course website for updates. Starred readings will be discussed in class. Nonstarred readings are classics for background reading; recent articles on the topic or -in the case of textbooks- alternative readings. I will only briefly discuss these in class and you are therefore responsible for the global content but not for the details of these readings.

1. Real Business Cycle models

*David Romer (1996). Advanced Macroeconomics,

chapter 4

Kydland, Finn E. and Edward C. Prescott (1982). Time to Build and Aggregate Fluctuations. *Econometrica*, 50(6), pp.1345-1370.

*King, Robert G. and Sergio T. Rebelo (1999). Resuscitating Real Business Cycles. In: John B. Taylor and Michael Woodford (eds), *Handbook of Macroeconomics*, volume 1B, pp.927-1007.

2. Solving linear(ized) Rational Expectations models

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*Roger E.A. Farmer (1999). *Macroeconomics of Self-fulfilling Prophecies*, chapters 1-3 and 5

*Fabio Canova (2007). *Methods for Applied Macroeconomic Research*, chapter 2 on DSGE Models, Solutions, and Approximations

Blanchard, O.J. and S. Fisher (1998), *Lectures on Macroeconomics*, sections 5.1, 5.2 and appendix to chapter 5 (with chapter 2 as a summary of things you should know already)

Maurice Obstfeld and Kenneth Rogoff (1996). *Foundations of International Macroeconomics*, supplements A and C to chapter 2

Ljungqvist, L. and T.J. Sargent (2000). *Recursive Macroeconomic Theory*, section 5.5 (with the rest of chapter 5 as background reading)

Marc Nerlove (1958). *Adaptive Expectations and Cobweb Phenomena*, *Quarterly Journal of Economics*, 72(2), pp. 227-240

John F. Muth (1961). *Rational Expectations and the Theory of Price Movements*, *Econometrica*, 29(3), pp. 315-335

Olivier Jean Blanchard; Charles M. Kahn (1980). *The Solution of Linear Difference Models under Rational Expectations*, *Econometrica*, 48(5), pp. 1305-1311

*John Y. Campbell (1994). *Inspecting the Mechanism: An Analytical Approach to the Stochastic Growth Model*, *Journal of Monetary Economics*, 33, pp.463–506 (or NBER working paper No. 4188)

3. Business Cycles: Data and Facts

*Stock, James H. and Mark W. Watson (1999). *Business Cycle Fluctuations in U.S. Macroeconomic Time Series*. In: John B. Taylor and Michael Woodford (eds), *Handbook of Macroeconomics*, volume 1A, pp.3- 64 (also NBER WP 6528)

Agresti, Anna-Maria, and Benoît Mojon (2001):

"Some Stylized Facts on the Euro Area Business Cycle" in I. Angeloni, A. Kashyap, and B. Mojon eds., *Monetary Policy Transmission in the Euro Area*, Cambridge University Press. (also ECB WP #95)

Kydland, Finn, and Edward C. Prescott (1990): "Business Cycles: Real Facts and a Monetary Myth," *Quarterly Review*, Federal Reserve Bank of Minneapolis

*Stock, James, and Mark W. Watson (2005): "Understanding Changes in International Business Cycle Dynamics" *Journal of the European Economic Association*, September 2005, v. 3, iss. 5, pp. 968-1006

Ramey, Garey, and Valerie A. Ramey (1995): "Cross-Country Evidence on the Link Between Productivity and Growth" *American Economic Review*, vol. 85, no. 5., 1138-1151

Backus, David K., Patrick J. Kehoe (1992): "International Evidence on the Historical Properties of Business Cycles," *American Economic Review* 82, 864-888.

Stock, James, and Mark W. Watson (2002): "Has the Business Cycle Changed and Why?," *NBER Macroeconomics Annual 2002*, MIT Press. (also NBER WP #9127)

4. Empirical performance of the RBC model

*Jordi Gali (1999). *Technology, Employment, and the Business Cycle: Do Technology Shocks Explain Aggregate Fluctuations?* *American Economic Review*, 89(1), pp. 249-271

*Jonas D. M. Fisher (2005). *The Dynamic Effects of Neutral and Investment-Specific Technology Shocks*, Working paper.

*Hall, Robert E. (1997). *Macroeconomic Fluctuations and the Allocation of Time*. *Journal of Labor Economics*, 15(1), pp.S223-S250.

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Rogerson, Richard (1988). Indivisible labor, lotteries and equilibrium. *Journal of Monetary Economics*, 21(1), pp.3-16.

Hansen, Gary D. (1985). Indivisible Labor and the Business Cycle. *Journal of Monetary Economics*, 16(3), pp.309-327.

Benhabib, Jess, Richard Rogerson and Randall Wright (1991). Homework in Macroeconomics: Household Production and Aggregate Fluctuations. *Journal of Political Economy*, 99(6), pp.1166-1187.

5. Search and Matching models

*Richard Rogerson, Robert Shimer and Randall Wright (2005). Search Theoretic Models of the Labor Market. *Journal of Economic Literature*, 43 (4): 959-988.

Christopher Pissarides (2000). *Equilibrium Unemployment Theory*, 2nd edition. Cambridge: MIT Press, chapters 1 and 2

6. Empirical performance of the search model

*Shimer (2006). Reassessing the Ins and Outs of Unemployment, mimeo, University of Chicago.

Shigeru Fujita and Garey Ramey (2006). The Cyclicalities of Job Loss and Hiring, Philadelphia Fed Working Paper 06-17.

Shigeru Fujita and Garey Ramey (2007). Reassessing the Shimer Facts, Philadelphia Fed Working Paper 07-2.

Robert E. Hall (2005). Job Loss, job Finding, and Unemployment in the U.S. Economy over the Past Fifty Years, NBER Macro Annual.

Steve J. Davis (2005). Comments on "Job Loss, job Finding, and Unemployment in the U.S. Economy over the Past Fifty Years" by Robert E. Hall, NBER Macro Annual.

Jonathan L. Willis, Russell Cooper and John

Haltiwanger (2007). Hours and Employment Implications of Search Frictions: Matching Aggregate and Establishment-Level Observations, Federal Reserve Bank of Kansas City Working Paper No. 06-14

*Robert Shimer (2005). The Cyclical Behavior of Equilibrium Unemployment and Vacancies, *American Economic Review*, 95(1): 25-49.

*Marcus Hagedorn and Iourii Manovskii (2008). The Cyclical Behavior of Equilibrium Unemployment and Vacancies Revisited, *American Economic Review*, v. 98, iss. 4, pp. 1692-1706

Cole, Harold L. and Richard Rogerson (1999). Can the Mortensen- Pissarides Matching Model Match the Business-Cycle Facts? *International Economic Review*, 40(4), pp.933-959.

PART II

The main textbook for the course is:

Galí, Jordi (2008): *Monetary Policy, Inflation, and the Business Cycle. An Introduction to the New Keynesian Framework*, Princeton University Press (Princeton, NJ).