

12E013

6 ECTS

Advanced Macroeconomics II

Overview and Objectives

PART I (PART II is to be defined)

In Advanced Macroeconomic 1 you studied the neo-classical growth model, which describes the long run determinants of GDP. In this Part 1 of Advanced Macroeconomics 2 we focus on the behavior of two main components of GDP: consumption and investment. Over five weeks, we will study several different models. The focus is on understanding how these models work and what we can learn from them, but also on how well they describe (features of) the real world. Within each topic, we will approximately follow the historical evolution of our thinking and motivate each step by evaluating the empirical performance of the models.

While the emphasis is on economic content, an important second objective is to familiarize you with the most important techniques that are commonly used in modern macroeconomics. A firm's decision (how much of revenues to invest in new capital) and a consumer's choice (how much of income to save) are two examples of intertemporal optimization problems. We will introduce uncertainty in these models, so that agents have to form expectations about the future, and use stochastic dynamic programming to solve the resulting intertemporal optimization problems.

This course targets primarily future PhD students and aims to prepare you to produce rather than simply consume research. Unless you have a strong background in the material that we cover, you will find that this is a hard course that requires a lot of work. In particular, it will be impossible to earn a good grade without spending many hours a week solving problem sets that at times will be quite technical. If you are mainly interested at a more intuitive introduction to macroeconomics (and do not plan to do a Ph.D.), it is recommended that you take the parallel course "Macroeconomics 2".

Course Outline

PART I

(Main readings are denoted with *)

1. Investment with Convex adjustment costs

Neoclassical Investment theory, and empirical evidence. The q theory. Average Q and marginal q .

*Romer (1996), chapter 8, pages 386-417

2. Investment with Non Convex adjustment costs

Empirical evidence on lumpy investment. Optimal investment with fixed adjustment costs and irreversibility.

*Caballero, R., (1999), "Aggregate Investment", Handbook of Macroeconomics.

*Giuseppe Bertola and Ricardo J. Caballero (1994). Irreversibility and Aggregate Investment, Review of Economic Studies, 61(2), pp.223-246.

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Caballero, R., Engel, E. and J. Haltiwanger (1995), "Plant level adjustment and aggregate investment dynamics," *Brookings Papers on Economic Activity*, 1995:2,1-39

Mark E. Doms & Timothy Dunne, 1998. "Capital Adjustment Patterns in Manufacturing Plants," *Review of Economic Dynamics*, vol 1.

Thomas, J., Is Lumpy Investment Relevant for the Business Cycle?, *Journal of Political Economy*, June 2002.

Khan, A. and J. Thomas, Idiosyncratic Shocks and the Role of Nonconvexities in Plant and Aggregate Investment Dynamics, *Econometrica*, March 2008

3. Stochastic dynamic programming

*Acemoglu (2008, chapter 16)

Adda and Cooper (2003, chapters 2 and 3).

Liungqvist and Sargent, Chapters 3 and 4

Stokey, Lucas, and Prescott (1989, Chapter 2).

4. Consumption: the intertemporal savings decision under uncertainty

The canonical consumption model

*Adda and Cooper (2003), sections 6.1 - 6.2.2 and 6.3 - 6.3.2

Deaton (1992), chapters 1 and 2

Blanchard and Fisher, section 6.2 and 3.4

Romer (1996), sections 7.1, 7.2 and 7.4

Empirical performance of the Life-Cycle / Permanent Income Hypothesis

*Adda and Cooper (2003), chapter 2

*Deaton (1992), chapters 3.2 - 4

Romer (1996), section 7.3

Hall, R.E., 1978, "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence", *Journal of Political Economy*, 1978, 86, 971-987

5. Asset pricing, consumption CAPM and the equity premium puzzle

*Adda and Cooper (2003), sections 6.2.3 and 6.3.3

Romer (1996), section 7.5

Mehra, Rajnish, and Edward C. Prescott. "The Equity Premium: A Puzzle." *Journal of Monetary Economics* 15, no. 2 (1985): 145-162.

Cochrane, John H., and Lars Peter Hansen. "Asset Pricing Explorations for Macroeconomics." *NBER Macroeconomics Annual 1992*. Cambridge, MA: MIT Press, 1992, pp. 115-165. (NBER Working Paper No. w4088.)

Hansen, L. P., and K. Singleton (1983): "Stochastic Consumption, Risk Aversion, and the Temporal Behavior of Asset Returns," *Journal of Political Economy*, 91(2), 249-268.

Kocherlakota, Narayana R. "The Equity Premium Puzzle: It's Still a Puzzle." *Journal of Economic Literature* 34, no. 1 (1996): 42-71.

Barro, Robert J. "On the Welfare Costs of Consumption Uncertainty." *NBER Working Paper No. 12763*, December 2006.

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----- "Rare Disasters and Asset Markets in the Twentieth Century." Quarterly Journal of Economics 121 (2006): 823-866.

6. Precautionary savings and financing constraints

*Adda and Cooper (2003), section 2.5 and chapter 3

*Adda and Cooper (2003), sections 6.2.4, 6.3.5 and 6.3.6

Deaton (1992), chapter 6

Romer (1996), section 7.6

Blanchard and Fisher (1989), section 6.2 (p.288-291)

Ljungqvist and Sargent (2004), chapter 4

Carroll, Christopher D. (2001), "A Theory of the Consumption Function, With and Without Liquidity Constraints", Journal of Economic Perspectives, 15(3), 23-46,

Chang-Tai, H. (2003), "Do consumers react to anticipated income changes? Evidence from the Alaska permanent fund," American Economic Review, 397-405.

Gross, D. and N. Souleles (2002), "Do liquidity constraints and interest rates matter for consumers behavior? Evidence from credit card data," Quarterly Journal of Economics, 149-185.

Aiyagari, S. R. (1994): "Uninsured Idiosyncratic Risk, and Aggregate Saving," Quarterly Journal of Economics, 109(3), 659-684.

Caballero, R. (1991): "Earnings Uncertainty and Aggregate Wealth Accumulation," American Economic Review, 81(4), 859-871.

Carroll, C. (1992), "The buffer-stock theory of savings: some macroeconomic evidence," Brookings Papers on Economic Activity, 1992:2, 61-165.

Carroll, Christopher D., Karen E. Dynan, and Spencer S. Krane (2003), "Unemployment Risk and Precautionary Wealth": Evidence from Households Balance Sheets, Review of Economics and Statistics, 85(3)

Required Activities

Weekly Problem Sets (TA:TBA)

Evaluation

Exam and Problem Sets

Materials

PART I

Romer, D., Advanced Macroeconomics, McGraw Hill 1996, or a later edition

Adda, J. and R. Cooper, Dynamic Economics, MIT Press, 2003

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Advanced Macroeconomics II

Deaton, A., Understanding Consumption, Clarendon Press, 1992

Ljungqvist, L. and T.J. Sargent, Recursive Macroeconomic Theory, MIT Press, 2000 or a later edition