

Advanced Macroeconomics (60h – 9CFU)

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Course learning objectives and skill acquisition

Overview and objectives:

Modern macroeconomics conceived the economy as a general equilibrium system that reflects decisions made by rational agents on a set of variables that connect the present with the future. We will see how contemporary macroeconomics seeks to provide an integrated and coherent explanation of economic systems' long-term and short-term quantitative development. We will work with models in conjunction with data, discussing how to solve, calibrate, simulate and evaluate Dynamic Stochastic General Equilibrium (DSGE) models.

Course outline:

Part I. The first part of the course deal with the basic concepts needed to define and measure economic growth and the business cycle. To derive a set of short and long-term stylised facts, we will review essential notions about the trend-cycle decomposition of historical series, the filtering procedures and the theory of stochastic processes.

Then, we will derive the neoclassical growth model (Solow model) and its micro-founded version with complete and perfectly competitive markets and perfect information (Ramsey-Cass Koopmans).

We will see that, in the long run, the trend component of the technological progress causes the growth of the real variables, whereas, in the short run, random components in the technological progress will trigger the cycle.

Part II. This second part of the course will focus on several extensions of the canonical RBC model. We will keep adding more and more elements to the model to bring the results of simulations closer to empirical evidence. The main extensions that we will see are the indivisible labour model, habit in consumption, variable capital utilization, capital and investment adjustment cost and preference shocks.

Part III. The third part of the course will focus on fiscal policy in the RBC models. In particular, on the effects of increases in public spending financed by either lump-sum or distortionary taxation and debt accumulation, emphasizing the theoretical foundations and the match with the empirical evidence.

Part IV. The last part will focus on monetary policy issues. We will see that the introduction of money in a Walrasian model implies results that are at odds with the empirical evidence.

Then we will focus on the New-Keynesian approach, which shares the same methodological approach as the RBC theory. Still, the micro-foundation is based on monopolistic competitive markets and sticky prices. These two hypotheses make money non-neutral and give the monetary policy an active role. Furthermore, price stickiness also affects the responses to real shocks that differ, to some extent, from those obtained in the RBC model. In this way, we will see how it is possible to reproduce both the unconditional and the conditional evidence to the realization of both real and nominal shocks.

Skill acquisition

Students should get an overview of modern macroeconomic theory. Students must be able to recognize theories and present arguments with precise examples. Students will have the ability to understand how aggregate markets work and explain their weaknesses.

Assessment

Evaluation for the course will be based on four problem sets and a final written exam.

Forty per cent of the course grade will be based on the four problem sets, basically consisting of the solution, linearisation, calibration and simulation of the models discussed during the lessons.

The final written exams, for the remaining sixty per cent of the course grade, consist of two open questions focusing on explaining the transmission mechanisms of the main macroeconomic shocks and on the role of policy interventions in the various models analysed during the lessons.

Course general schedule

The course takes place in the first semester. It lasts sixty hours and consists of three weekly lessons lasting two hours each.

Teaching material

There is no single assigned textbook for the course. Rather, class lectures and handouts will draw on my typed notes, which will be available online. The teaching material is based on the following textbooks and scientific papers:

Textbooks

Gali, Jordi. Monetary Policy, Inflation, and the Business Cycle.

Romer, David. Advanced Macroeconomics

Walsh, Carl. Monetary Theory and Policy.

Marchetti, Enrico. Teorie del Ciclo Economico

Additional readings

King, Robert G. & Plosser, Charles I. & Rebelo, Sergio T., 1988. "Production, growth and business cycles I. The basic neoclassical model," *Journal of Monetary Economics*, Elsevier, vol. 21(2-3), pages 195-232.

King, Robert G. & Rebelo, Sergio T., 1999. "Resuscitating real business cycles," *Handbook of Macroeconomics*, in: J. B. Taylor & M. Woodford (ed.), *Handbook of Macroeconomics*, edition 1, volume 1, chapter 14, pages 927-1007, Elsevier.

Baxter, Marianne & King, Robert G., 1993. "Fiscal Policy in General Equilibrium," *American Economic Review*, American Economic Association, vol. 83(3), pages 315-334, June.

Mark Gertler & Jordi Gali & Richard Clarida, 1999. "The Science of Monetary Policy: A New Keynesian Perspective," *Journal of Economic Literature*, American Economic Association, vol. 37(4), pages 1661-1707, December.