Macroeconomics 3

Module 3, 2024-2025

Instructor: Konstantin Styrin

kstyrin@nes.ru

17 September 2024

Course information

Course Website: my.nes.ru

Instructor's Office Hours: by appointment; walk-ins welcome

Class Time: TBA

Room Number: TBA

TAs: TBA

Course description

The course provides an introduction into theories and empirics of economic growth. This is a first course in the School's macro sequence that deals with macroeconomic models explicitely grounded on microeconomic foundations. Two workhorse models with optimizing agents, the Neoclassical Growth Model with an infinitely-lived representative household and the Overlapping Generations Model (OLG), are presented. We consider the role of various factors affecting economic growth such as accumulation of physical and human capital, production of knowledge, growth-enhancing government policies, and institutions. Then we turn to the sources of cross-country differences in per capita income and the rate of economic growth observed in the data. The final part of the course studies neoclassical monetary economy models.

Course requirements, grading, and attendance policies

The requirements include problem sets (20% of final grade), and the final exam (80%). At least 70% lecture attendance is mandatory for getting a passing grade.

Course contents

I. Stylized facts

- Main empirical facts about economic growth

II. Solow growth model

- Accumulation of capital as a driving force of economic growth
- Balanced growth path
- Growth convergence
- The role of the saving rate
- Empirical tests of the Solow growth model

III. Economic growth models with microeconomic foundations

- Why do we need macro models with micro foundations?
- Neoclassical Growth Model, a.k.a. Ramsey model
- Overlapping Generations Model, a.k.a. Diamond model
- What determines the saving rate?
- Optimizing behavior of firms and households
- The effect of government expenditures on market equilibrium
- Dynamic inefficiency

IV. Endogenous growth theories

- Sources of growth in the productivity of factors
- R&D sector and production of knowledge
- Allocation of resources involved in the production of knowledge in a centralized vs. market economy. The role of externalities
- Paul Romer endogenous growth model
- Government policies stimulating economic growth
- Empirical tests of endogenous growth theories

V. Cross-country differences in per capita income and the rate of economic growth

- Why are some countries richer than others?
- Why do some economies grow faster than others?
- The Solow growth model with human capital
- The role of institutions and growth-stimulating policies

VI. Monetary economy

- Money in the utility function
- Neoclassical growth model with money, a.k.a. Sidrauski model
- Neutrality and superneutrality of money
- OLG model with money

Sample tasks for course evaluation

Consider the Neoclassical Growth Model, a.k.a. the Ramsey model, that we discussed in class.

i. How is the real rate of interest related to the marginal product of capital?
ii. How is the real rate of interest related to the rate of consumption growth? Explain ecconomic intuition behind this relationship.
iii. How do the real rate of interest and real output change as long as the economy converges to the balanced growth path? What is it equal to once the economy has reached the balanced growth path?
iv. What is the transversality condition? Explain its economic meaning.

"In the endogenous growth model with the growing number of product varieties that we discussed in class, the government should subsidize R&D expenditures of firms in order to obtain a Pareto-efficient allocation of resources in the economy." True, false, or uncertain? Explain.

Course materials

Required textbooks and materials

Romer, D., *Advanced Macroeconomics,* McGraw-Hill Irwin, 5th ed., 2019 (earlier editions are also acceptable), chapters 1-4

Additional materials

More readings to be uploaded on my.nes.

Academic integrity policy

Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated.