Syllabus Macroeconomics –part I

This module deals with the basics in intertemporal optimization. One instructors (Gianluca Femminis) shall lecture for 18 hours (inclusive of some tutorials)

Basic growth theory (5 hours)**.** After a quick reprise of the Solow model, the classic Ramsey model will be analyzed in some details. Attention will be devoted both to the economic intuition for the results and to the embedded analytical issues.

An introduction to the dynamic programming approach to growth theory (2 hours)**.** The 'Bellman principle' will be introduced and illustrated through examples based on the classic growth models.

Endogenous growth theory (3 hours) The most important workhorses in endogenous growth will be succinctly illustrated.

Dynamic investment model (2 hours). A simple model, based on Tobin's $q,$ will be used to add persistence to the model.

Competitive equilibrium with complete markets (3 hours). A stochastic competitive economy will be analyzed, to highlight the role of complete markets and the meaning of a "representative agent".

Lectures**:**

Tue 26th of April 10.30-12.30 (2)

Fri 29th of April 10.00-13.00 (3)

Tue 03 of May 10.30-12.30 (2)

Fri 06th of May 10.00-13.00 (3)

Tue 10 of May 10.30-12.30 (2)

Fri 13th of May 10.00-13.00 (3)

Reharsal / discussion of exercises Thu 19 th of May 9.30-12.30

Textbooks: Despite its introductory nature, there is no single textbook for this module. However, lectures will refer to textbooks such as G. McCandless (2008), *The ABC of RBC*, Harvard University Press; L. Ljungqvist and T. Sargent (2012), *Recursive Macroeconomic Theory* (3rd edition), M.I.T. Press; B. Heijdra (2018), *Foundations of Modern Macroeconomics*, Oxford University Press.

Essential references

Mc Candless, Chapter 1 and 3

G. Femminis, "From simple growth to numerical simulations: A primer in Dynamic Programming", (2016) available at: https://ideas.repec.org/p/ctc/serie1/def050.html

Heijdra, Chapter 13,14, 4, 17 (section 4 in particular).

Ljungqvist and Sargent, Chapter 8.

Further readings

Abel, A. B. (1982). Dynamic effects of permanent and temporary tax policies in a *q* model of investment, *Journal of Monetary Economics*, 9, pp. 353-373.

Aghion, P., E. Caroli, and C. García-Peñalosa (1999). Inequality and economic growth: The Perspective of the New Growth Theories, *Journal of Economic Literature*, 37, pp. 1615–1660.

Akgit, U. and W. Kerr (2018) Growth through Heterogeneous Innovations, *Journal of Political Economy*, 2018, 126 pp. 1374-1443.

Blanchard O. J. and C. M. Kahn (1980). The solution of linear difference models under rational expectations. *Econometrica*, 48, pp. 1305-1311.

Farboodi M. and L. Veldkamp (2020), Long Run Growth of Financial Technology, *American Economic Review* 110 (8), pp. 2485-2523).

Peretto, P. (2021). Through scarcity to prosperity: Toward a theory of sustainable growth. *Journal of Monetary Economics* 117, 2021 pp. 243 - 257.

Glomm, G. and B. Ravikumar (1994). Public investment in infrastructure in a simple growth model, *Journal of Economic Dynamics and Control*, 18, pp. 1173-1187.

Jones, C. (1995). R&D-based models of economic growth, *Journal of Political Econ*omy 103, pp. 759–84.

Lucas, R. J. (1988). On the mechanics of economic development, *Journal of Monetary Economics*, 22, pp. 3-42.

Mankiw, N., Romer, D. and D. Weil (1992). A contribution to the empirics of economic Growth, *Quarterly Journal of Economics*, 107, pp. 407 – 437.

Temple, J. (1999). The New Growth Evidence, *Journal of Economic Literature* 37, pp. 112–156.