Syllabus - Advanced economic growth theory, Spring 2013

Masaryk University, Brno

Lecturer(s) and instructor(s)

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Course webpage

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Course description

This course covers advanced topics from economic growth theory. It starts from neoclassical models (Solow, 1956; Ramsey, 1928). These models were employed in the first attempts for explaining economic growth. It then confronts inference from these models with data and identifies weaknesses of these models. It proceeds to models which have tried to alleviate those weaknesses.

The first set of models which it covers focus on efficiency growth of human capital (human capital accumulation): Romer (1986) and Lucas (1988). Romer (1986) highlights the efficiency growth that stems from learning-by-doing which is modeled as a pure externality. In turn, Lucas (1988) highlights the formal education process.

The second set of models focus on R&D-driven endogenous growth: Romer (1990), Aghion and Howitt (1992), Grossman and Helpman (1991), Jones (1995), and Smulders and van de Klundert (1995). Romer (1990) and Jones (1995) have horizontal innovations (i.e., introduction of new goods), while Grossman and Helpman (1991), Aghion and Howitt (1992) and Smulders and van de Klundert (1995) have vertical innovations (i.e., quality or process innovation).

Requirements

Students are expected to be familiar with modern macroeconomic theory and continuous time dynamic programming.

Materials

Lecture notes will be distributed for certain parts of the course. These notes will cover the main points of respective lectures and part of the algebra.

Exams and assignments

There will be one cumulative end-term exam (date, time and place: TBA) and two home assignments

- HW 1 is currently scheduled on 19.04.2013 with a deadline 29.04.2013

- HW 2 is currently scheduled on 29.04.2013 with a deadline 08.04.2013

Grading

- class participation 3 points (out of 100)

- home assignments 20 points

- end-term exam 77 points

Schedule and outline

Block 1: 08.04.2013 and 15.04.2013

Brief introduction to growth theory; Solow-Swan and Ramsey neoclassical models; Romer (1986) endogenous growth model

- Chapters 1, 2, 3, and 4 from Barro and Sala-i-Martin (2004)

Block 2: 19.04.2013 and 22.04.2013

Lucas (1988), Romer (1990), and Jones (1995) models

- Chapters 5 and 6 from Barro and Sala-i-Martin (2004) for Lucas (1988) and Romer (1990)

Block 3: 29.04.2013 and 06.05.2013

Grossman and Helpman (1991), Aghion and Howitt (1992) and Smulders and van de Klundert (1995) models

- Chapter 7 from Barro and Sala-i-Martin (2004) for Grossman and Helpman (1991)

Main textbook

Barro, R. and Sala-i-Martin, X. (2004). *Economic Growth* (2nd ed). MIT Press. or
Barro, R. and Sala-i-Martin, X. (1995). *Economic Growth* (1st ed). McGraw-Hill.

Recommended textbooks

Acemoglou, D. (2009). *Introduction to Modern Economic Growth*. Princeton University Press.
Aghion, P. and Howitt, P. (1998). *Endogenous Growth Theory*. MIT Press.
Chiang, A. E. (1992). *Elements of dynamic optimization* (1st ed). McGraw-Hill.

References

Aghion, P. and P. Howitt (1992). A model of growth through creative destruction. *Econometrica 60*(2), 323–351.

Grossman, G. M. and E. Helpman (1991). Quality ladders in the theory of growth. *The Review of Economic Studies 58*(1), 43–61.

Jones, C. I. (1995). R&D-based models of economic growth. *Journal of Political Economy 103*(4), 759–784.

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics 22*(1), 3–42.

Ramsey, F. P. (1928). A mathematical theory of saving. *The Economic Journal 38*(152), 543–559.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy 94*(5), 1002–1037.

Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy 98*(5), 71–102.

Smulders, S. and T. van de Klundert (1995). Imperfect competition, concentration and growth with firm-specific R&D. *European Economic Review 39*(1), 139–160.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics 70*(1), 65–94.