Syllabus - Advanced Economic Growth Theory, Fall 2013 - Spring 2014

The Central Bank of Armenia

Lecturer

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Course web page

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Course description

This course covers modern topics from economic growth theory. Upon successful completion of this course, the attendees will have the necessary apparatus to understand the foundations of modern economic growth theory.

The syllabus that follows may be subject to adjustment along with the progress of the course. Please check for updates on the syllabus, lecture notes and problem sets in the web page of this course.

Time table

Classes start on 17.12.2013 and end on 18.01.2014

- Block 1 of classes is from 17.12.2013 to 25.12.2013
- Block 2 of classes is from 08.01.2014 to 18.01.2014

Classes:

- Everyday, 10:00 - 11:15 and 11:30 - 13:15;

Office hours:

- Block 1: 19.12.2013, 14:30 - 18:00; 22.12.2013, 14:30 - 18:00; 23.12.2013, 14:30 - 18:00;
- Block 2: 10.01.2014, 14:30 - 18:00; 12.01.2014, 14:30 - 18:00; 15.01.2014, 14:30 - 18:00;
- by appointment (drop me an email or just knock on my door);

Detailed Outline

Topic 1

Introduction to Economic Growth: The Solow-Swan and Ramsey Models

- Chapters 1, 2, and 3 from Barro and Sala-i-Martin (2004);
- Solow (1956); Ramsey (1928).

Topic 2

Efficiency Growth of Human Capital (Human Capital Accumulation): The Romer and Lucas Models

- Chapters 4 and 5 from Barro and Sala-i-Martin (2004);
- Romer (1986); Lucas (1988).

Topic 3

Models of R&D-driven Growth

- Chapters 6 and 7 from Barro and Sala-i-Martin (2004);
- Romer (1990); Aghion and Howitt (1992); Grossman and Helpman (1991); Smulders and van de Klundert (1995); Jones (1995); Dinopoulos and Thompson (1998); Young (1998); Segerstrom (1998); Peretto and Smulders (2002); Laincz and Peretto (2006).

Topic 4

Growth Accounting

- Chapter 10 from Barro and Sala-i-Martin (2004);
- Caselli (2005).

Topic 5

The Diffusion of Technology

- Chapter 8 from Barro and Sala-i-Martin (2004);
- Barro and Sala-i-Martin (1997).

Topic 6

Biased Technical Change and Unbalanced Growth

- Acemoglu (1998, 2002); Ngai and Pissarides (2007); Acemoglu and Guerrieri (2008).

Exams, presentation sessions, and take home problem sets

There will be one cumulative end-term exam (date: 18.01.2014), one homework assignment (date: 20.12.2013; deadline: 23.12.2013), and two presentation sessions (dates: 08.01.2014 and 17.01.2014).

The problems in end-term exam are open-end questions which require rigorous knowledge of the subject and calculus/algebra. Homework assignment will consist of a simulation exercise in Matlab. It can be performed in groups individually or in groups that will be formed for presentation sessions (see below). The deadline of the homework assignment is tentatively set on 23.12.2013. Regarding the presentation sessions:

- For presentation session on 08.01.2013 papers are Solow (1956); Ramsey (1928); Romer (1986); Lucas (1988); Barro (1990); Mankiw et al. (1992);
  - Make 6 groups of uniform number of people (as uniform as possible) and select a presenter within the group. I will make a random assignment of these papers to groups on 18.12.2013;
- For presentation session on 17.01.2014 papers are Romer (1990); Rivera-Batiz and Romer (1991); Grossman and Helpman (1991); Jones (1995); Smulders and van de Klundert (1995); Acemoglu (2002);
  - Make 6 groups of uniform number of people (as uniform as possible) and select a presenter within the group. I will make a random assignment of these papers to groups on 10.01.2014;
- Each group needs to critically read all papers and present the paper assigned to it;
- By default the presentation of assigned papers is maximum 30 minutes. After the presentation, 10 minutes are allowed for questions/remarks and answers. During the presentation no interruptions are allowed;
- Presenter needs to present very succinctly (no philosophical mambo-jambo!) the main idea of the paper (topic and purpose), its relevance (economic and, perhaps, policy significance), the results of the paper and a very relevant and precise critique. Presenter can use any means found necessary and available for presentation (i.e., PowerPoint, Beamer, LateX, white/black board, etc);
- Questions/remarks should offer additional constructive critique to the presented paper and insights about its topic, economic significance, and results. Questions/remarks and answers must avoid any personal content and be maximum 45 seconds long;
- In order to ask your question, raise your hand and wait till the presenter and I allow it. Name your group before your question (e.g., group 1);

- If the presenter does not answer the question, his/her group can do that. His/her group members also can add to the answer (max 30 seconds). In order to do so, raise your hand, and wait till the presenter and I allow it.
- In questions and answers part, I will order the groups and allow each group to have at least one question (to economize on time, please give easy names to your groups, e.g., group 1, group 2). Later by default I maintain FIFO order.
- I am the arbiter of presentations and questions and answers. I allow myself discretion in any of these rules, if deemed necessary to me.
- Please maintain order and very respectful atmosphere. Respect the timing so that your colleagues (and I) feel that you do so.[1]

I might also post online 2 voluntary problem sets. I will not check/correct your solutions although I might agree to devote some of the classroom time to you so that you could present your solutions to colleagues.

Grading

- Presentation sessions 10 points (out of 100)

  The points will be assigned discretionarily/subjectively and on the basis of (ordered by weight) clearness and succinctness of the presentation of the paper, critique of the paper, handling the questions, and, least importantly, asking insightful questions. I might subtract points if the questions are not appropriate or contain personal content.[2]
- Homework assignment 5 points
- End-term exam 85 points

Main textbooks

- Barro, R. J. and Sala-i-Martin, X. (2004). Economic Growth (2nd ed). The MIT Press.
- Barro, R. J. and Sala-i-Martin, X. (1995). Economic Growth (1st ed). The McGraw-Hill.
- Acemoglou, D. (2009). Introduction to Modern Economic Growth. Princeton University Press.
- Aghion, P. and Howitt, P. (1998). Endogenous Growth Theory. MIT Press.

[1] It is fine if we waste time on respecting time rather than on abusing it.

[2] I recommend you to use beamer and follow the usual order and content of presentations in economics: (1) 2-3 minutes (1-2 slides) for topic, purpose, and relevance; (2) 2-3 minutes (1-2 slides) short discussion of results; (3) 3-4 minutes (2-3 slides) description of methodology; (4) 7-8 minutes (4-5 slides) detailed outline of results; (5) 1-2 minutes (1 slide) conclusions; (6) 3-5 minutes (1-2 slides) robustness/critique. I recommend presenters to rehearse presentation at least in front of your group.

- Aghion, P. and Howitt, P. (2008). The Economics of Growth. MIT Press.

Articles

Acemoglu, D. (1998). Why do new technologies complement skills? Directed technical change and wage inequality. *The Quarterly Journal of Economics 113*(4), 1055–1089.

Acemoglu, D. (2002). Directed technical change. *The Review of Economic Studies 69*(4), 781–809.

Acemoglu, D. and V. Guerrieri (2008). Capital deepening and non-balanced economic growth. *Journal of Political Economy 116*(3), 467–498.

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

Barro, R. J. (1990). Government spending in a simple model of endogenous growth. *Journal of Political Economy 98*(5), 103–125.

Barro, R. J. and X. Sala-i-Martin (1997). Technological diffusion, convergence, and growth. *Journal of Economic Growth 2*(1), 1–26.

Barro, R. J. and X. Sala-i-Martin (2004). *Economic Growth* (2 ed.). Cambridge, MA: The MIT Press.

Caselli, F. (2005). Accounting for cross-country income differences. Volume 1, Part A of *Handbook of Economic Growth*, pp. 679–741. North-Holland: Elsevier.

Dinopoulos, E. and P. Thompson (1998). Schumpeterian growth without scale effects. *Journal of Economic Growth 3*(4), 313–335.

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.

Laincz, C. A. and P. F. Peretto (2006). Scale effects in endogenous growth theory: An error of aggregation not specification. *Journal of Economic Growth 11*(3), 263–288.

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

Mankiw, N. G., D. Romer, and D. N. Weil (1992). A contribution to the empirics of economic growth. *The Quarterly Journal of Economics 107*(2), 407–437.

Ngai, R. L. and C. A. Pissarides (2007). Structural change in a multi-sector model of growth. *The American Economic Review 97*(1), 429–443.

Peretto, P. F. and S. Smulders (2002). Technological distance, growth and scale effects. *The Economic Journal 112*(481), 603–624.

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

Rivera-Batiz, L. A. and P. M. Romer (1991). Economic integration and endogenous growth. *The Quarterly Journal of Economics 106*(2), 531–555.

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.

Segerstrom, P. S. (1998). Endogenous growth without scale effects. *American Economic Review 88*(5), 1290–1310.

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.

Young, A. (1998). Growth without scale effects. *Journal of Political Economy 106*(1), 41–63.