ECON7750.01 MACROECONOMIC THEORY

Fall 2018
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Lectures in Campion Hall 200 T TH 9.00am

Course content and objective

The first semester Macroeconomic Theory course provides an overview of growth theory and (in the last section) an introduction to the stochastic business cycle models used in EC751. We cover the standard models of exogenous and endogenous growth, mostly in a deterministic setting. We will study the Solow-Swan model, the Ramsey growth model with infinitely lived optimizing agents, overlapping generation models without and with altruism, fiscal policy, models with human capital, basic AK models of endogenous growth, two sector models of endogenous growth, product variety models and quality ladder Schumpeterian growth models. We will also review some crucial empirical papers on applied growth. In the last part of the course we will study the Ramsey model with a stochastic technology shock and the choice of investment with adjustment costs and consumption in a stochastic setting. This will serve as an introduction and link to EC751.

Grading, exams, and tutorials

The evaluation of the students will be based on a Mid-Term Exam (40% of total grade) and a Final Exam (60%).

Midterm Examination (tentative): Thursday, October 11
Final Examination: to be posted later

Students are also strongly encouraged to solve the weekly exercises that will be assigned. Collaboration is fine, provided each student makes a strong individual effort. The exercises will be corrected in a weekly tutorial session lead by the Teaching Assistant (Marco Errico). In borderline cases, a record of sustained good performance on problem sets will result in a higher grade.

Reading material

The two main sources of information for the course are:

1) Barro, R.J., and X. Sala-I-Martin, **Economic Growth**, second edition, 2004 Cambridge, MIT Press. (BSM for short).

2) Acemoglu, Daron, **Introduction to Modern Economic Growth,** Princeton University Press, 2009.

Another useful supplementary book that does not require dynamic optimization, and may be helpful as a transition book is

3) David Romer, **Advanced Macroeconomics**, 2006, McGraw-Hill, fourth edition (DR for short)

It contains, among other things, very useful exercises. Portions of the following book will also be referred to in the course outline:

4) Blanchard, Olivier J. and Fischer, Stanley, **Lectures on Macroeconomics**. Cambridge, MA: MIT Press, 1989.

I will also direct you to the original papers. Core readings (marked with a *) and further readings are listed under each heading of the course outline. Everyone should carefully study the core readings. The further readings include classic articles, more advanced or detailed treatments of the topics, and background material. Finally, on some of the topics, I made available typed lecture notes (see Canvas and my google website).

Course outline

1) **Trends and Cross Country Differences in Income: An Introduction.**

   BSM, Chapter 12

   DA, Chapter 1

   Easterly, W. and R. Levine, "What Have we Learned from a Decade of Empirical Research on Growth? It Is Not Factor Accumulation: Stylized Facts and Growth Models", *World Bank Economic Review,* 2001, 15, 177-219.

2) **The Solow Growth Model.**

   BSM, Chapter. 1.

   DA, Chapter 2

   DR, Chapter 1.1-1.7.

   Solow, Robert (1956), "A Contribution to the Theory of Economic Growth" *Quarterly Journal of Economics* 70:65-94.

3) **The Solow Model, Extensions and Testing.**

   DA, Chapter 3

   DR, Chapter 4.1-4.2

   *Mankiw, G., Romer, D., and D.N. Weil (1992), "A Contribution to the Empirics of Economic Growth", May, pp. 407-437.

   Klenow, P. and A. Rodriguez-Clare (1997), "The Neoclassical Revival in Growth Economics: Has It Gone Too Far?", in Bernanke, B., and J. Rotemberg, eds, NBER Macroeconomic Annual 1997, Cambridge, MA, MIT Press.

4) **More on Cross Country Income Differences: the Role of Institutions, Culture and Geography**

   DA, Chapter 4.3-4.6

*Hall, Robert E. and Charles I. Jones (1999), "Why Do Some Countries Produce So Much More Output per Worker than Others?" *Quarterly Journal of Economics* 114:83-116.

*Acemoglu, Daron, Simon Johnson, and James A. Robinson (2001), "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91 (December): 1369-1401.

*Albouy, David (2012), "The Colonial Origins of Comparative Development: The Colonial Origins of Comparative Development: An Empirical Investigation, Comment, *American Economic Review (*October): 3059-3076

*Acemoglu, Daron, Simon Johnson, and James A. Robinson (2012), "The Colonial Origins of Comparative Development: An Empirical Investigation, Reply" *American Economic Review* (October): 3077-3110.

*Sachs, Jeffrey (2003), "Institutions Don't Rule: Direct Effect of Geography on Per Capita Income", *NBER Working Paper* 9490.

Glaeser, Edward l., Rafael La Porta, Florencio Lopez-De-Silanes and Andrei Schleifer (2004), "Do Institutions Cause Growth?", Journal of Economic Growth, 9, 271-303.

Acemoglu, Daron and Simon Johnson (2006), "Disease and Development: The Effect of Life Expectancy on Economic Growth." *Journal of Political Economy,* December 2007, pp. 925-985.

Caselli, Francesco (2005), "Accounting for Cross-Country Income Differences," in Aghion and Durlauf (eds.), *Handbook of Economic Growth* (New York: Elsevier) vol. 1A, ch. 9.

*Algan, Yann and Pierre Cahuc (2010). "Inherited Trust and Growth." American Economic Review, 100(5): 2060--2092.

*Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2006). "Does Culture Affect Economic Outcomes?" Journal of Economic Perspectives, 20(2): 23--48.

*Tabellini, Guido (2010). "Culture and Institutions: Economic Development in the Regions of Europe." Journal of the European Economic Association, 8(4): 677--716.

Giavazzi, Francesco, Fabio Schiantarelli, and Michel Serafinelli (2013) "Culture, Policies and Labor Market outcomes." Journal of the European Economic Association, 11(6): 1256--1289.

S. Fulford, I. Petkov, and F. Schiantarelli, "Does it Matter Where You Came From? Ancestry Composition and Economic Performance of US Counties, 1850-2010", Boston College w.p. 875.

5)   **The Ramsey Model with Infinitely Lived Agents**.

       BSM, Chapter 2

       DA, Chapter 5 (skim) and 8

       DR, Chapter 2.1-2.7.

6)   **The Overlapping Generations Model**.

       BSM, Chapter 3, 3.8

       DA, Chapter 9

       DR, Chapter 2.8-2.12.

       Romer, *Advanced Macroeconomics*, Chapter 2, Part B.

       Diamond, Peter (1965), "National Debt in a Neoclassical Growth Model" *American Economic Review* 55:1126-1150.

       Blanchard, Olivier J. (1985), "Debt, Deficits, and Finite Horizons." *Journal of Political Economy* 93: 223-247.

7)   **Fiscal Policy, Ricardian Equivalence**

       DR, Chapter 12.

       Blanchard & Fischer, *Lectures on Macroeconomics,* Chapter 3.1-3.2, 3.4.

       Barro, Robert J (1989), "The Ricardian Approach to Budget Deficits." *Journal of Economic Perspectives* 3:37-54.

       Bernheim, B. Douglas and Bagwell, Kyle (1988), "Is Everything Neutral?" *Journal of Political Economy* 96:308-338.

8)   **Basic Endogenous Growth Models**

       a) <u>One Sector Models of Endogenous Growth: the AK Model</u>

           BSM, Chapter 4, 4.1-4.4 and 4.6

           DA, Chapter 11

DR, Chapter 3

Romer, Paul, M. (1986), "Increasing Returns and Long-Run Growth", *Journal of Political Economy*, 94, October, 1002-1037

b) Two Sectors Models of Growth

BSM, Chapter 5, 5.1-5.4

DR, Chapter 3, Part A

Lucas, Robert E. (1988), "On the Mechanics of Economic Development" *Journal of Monetary Economics* 22:3-42.

9) **Endogeneizing Technological Change**

a) Technological Change: Models with Expanding Variety of Products

BSM, Chapter 6, 6.1-6.4

DA, Chapter 13

Romer, Paul, M. (1990), "Endogenous Technological Change", *Journal of Political Economy*, 98. October, part II, S71-S102

b) Technological Change: Models with Improvements in the Quality of Products.

BSM, Chapter 7, 7.1-7.2 and 7.5

Aghion, P. and P. Howitt, Endogenous Growth Theory, 1999, MIT Press, Chapter 2 and 3.

Aghion, P. and P. Howitt, The Economics of Growth, the MIT Press, 2009, Chapter 4.

DA, Chapter 14

Aghion, Philippe, and Peter Howitt (1992), " A Model of Growth Through Creative Destruction", *Econometrica*, 60, March, 323-351

Aghion, P. and P. Howitt, The Economics of Growth, the MIT Press, 2009, Chapter12. on competition and entry.

c) <u>Models of Technology Diffusion</u>

BSM, Chapter 8, 8.1-8.5 and 8.8

DA, Chapter 18

Aghion, P. and P. Howitt, <u>The Economics of Growth</u>, the MIT Press, 2009, Chapter 7.

10)   **More on the Empirical Implications of Endogenous Growth Models**

*Kremer, M. (1993), "Population Growth and Technological Change: One Million B.C. To 1990", *Quarterly Journal of Economics*, August 1993, pp.681-716.

*Jones, C.I. (1995), "R&D-Based Models of Economic Growth", *Journal of Political Economy*, vol. 103, n.4, 1995, pp. 759-784.

*Jones, C.I.(1999), " Growth: With or Without Scale Effects?", *American Economic Review,* May, p. 139-144.

11)   **Stochastic Neoclassical Growth Model: Log-linearization and Solution**

*Uhlig H. "A Toolkit to Analyze Nonlinear Dynamic Stochastic Models Easily",   mimeo,1997.
http://www2.wiwi.hu-berlin.de/institute/wpol/html/toolkit/toolkit.pdf

12)   **Two Examples of Stochastic Dynamic Programming: Investment with Adjustment Costs and Consumption with Stochastic Returns**

BSM, Chapter 3.2, and DR, Chapter 8 (review of investment models with adjustment costs in the deterministic case)

Hansen, L.P. and K.J. Singleton (1983), 'Stochastic Consumption, Risk Aversion, and the Temporal Behavior of Asset Returns", *Journal of Political Economy*, 91(2), pp. 249-265.

Most importantly: my lecture notes for both investment and consumption.