

TUFTS UNIVERSITY

Department of Economics

Spring Term 2012

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Office hours: Mondays, 1:30–3:00pm; Wednesdays, 5:45 –7:00pm. Other times by arrangement. Please feel free to email or call me to communicate with me or to set up an appointment for a time other than my office hours.

Syllabus

EC118 QUANTITATIVE ECONOMIC GROWTH

Call No: 01228. Time Block E+: MW 10:30–11:45pm.

Room: Braker 118

1 Course Description

This course is concerned with the process of economic growth. Understanding economic growth has preoccupied economists ever since Adam Smith. This area of economics is attracting a truly astounding amount of interest among economists nowadays. As a field of economics, it is also considered as encompassing the real, i.e., nonmonetary, aspects of macroeconomics. It emphasizes aspects of economic performance which may be measured in terms of standard economic concepts and complements the study of economic development. In contrast, the field of economic development emphasizes more institutional and qualitative aspects of economic transformation and of the evolution of living standards and economic institutions.

The subject of economic growth has fascinated economists over hundreds of years. Several American economists have won Nobel Prizes for their intellectual work in this area. Economic growth is currently a very popular subject. Concern about development of less developed countries, the robustness of economic growth in newly industrialized countries, the phenomenal expansion of international trade and its natural relationship to economic growth (at least in certain parts of the globe) and the persistence of terrible poverty in other parts of the world are all subjects that are hotly debated among economists and in the popular press. Freely quoting Robert Lucas, one of the brightest economic minds alive today, “once you start thinking about questions [pertaining to economic growth], it is hard to think of anything else.”

The course will take a broader view that will go beyond the fundamentals of the description of economic growth in terms of macroeconomic models. In addition to the standard topics concerning the dynamics of intertemporal economic equilibrium, the course will address economic growth in the international economy as a global phenomenon. We will discuss

issues of convergence and divergence, inequality within countries and across countries, the importance of geography, natural resource scarcity and economic growth, and the impact of the “new economy” on US economic growth. Students’ research papers will themselves enhance the course.

1.1 Requirements

Exams. The course’s prerequisites are as specified in the catalog. If you have problems with them, please talk to me about it. The course grade will be based on performance in a twenty-minute quiz, in a midterm and a final exam, and a research paper. The course satisfies the Quantitative elective requirement for Quant Economics majors. The time schedule of the exams and their contribution towards the course grade are as follows:

- Monday, *March 5 midterm*, to count for 30%;
- Monday, May 7, 3:30–5:30pm, *Final exam*, to count for 35% of the grade. The final exam will be held as scheduled by the University and will *not* be moved, unless the class decides *unanimously* to move it to an earlier date.
- Some of the topics lend themselves to group discussions. I indicate below those topics. Your participation in those discussions will contribute 5% to the course grade.
- *The research paper*, the other major requirement for the course, and together with its class presentation will count for 30% of the grade.

The paper will be due on May 5, 2012. However, there will be several stages. First, you will put together a proposal for the paper, due by February 21, to be followed by a draft, which will be due on April 2. This plan is designed to spread the work over the entire term and to allow you to be ready for class presentations at the end of the term. The grade for the paper will be made up of 5% from the proposal, 5% from the draft and the remainder from the final version. This scale puts a lot of emphasis on the quality of the research effort that you make early on in the term.

I am typically very flexible about paper topics, and the paper proposal requirement is designed to help you focus your search for a topic in a timely fashion and to do adequate research to ensure that it may be done within the confines of the term. It is not necessary that you choose a topic that has been covered in class. To give a few examples of appropriate topics, one could think of economic growth experiences of different countries, specific growth episodes of countries and regions in the modern era, including those of the US, Japan and Europe, history of economic growth, health and economic growth, demography and economic growth, growth impact of innovations, technological progress, urban/local impact of economic growth, problems of economic transition, environment and economic growth, democracy and growth, political transition in South Africa and economic growth, fertility and growth, entrepreneurship and growth, growth consequences of macroeconomic stabilization problems, etc.

You may be allowed to *combine* the paper requirement for *this* course with that of *another* course, *provided* that this is made *explicit* ahead of time and *both the other instructor and I* are aware of your plans and *all three of us have agreed* to an appropriate amount of work. Violations of these conditions will be an academic integrity matter.

A list of topics of student papers from previous years follows and will give you a very precise idea about what past students have done their research on: The Asian Miracle, its Crisis and Aftermath; Argentina: Boom to Bust; Growth and Decline in the Argentine Economy; Looking within China: Convergence or Divergence? Future Prospects of China after Accession into the WTO; Economic Growth in Japan: How 1973 Changed Everything; A Market transition: Influences and Effects of Cuba's Second Economy and Small Businesses; Geography and Economic Growth: Will Africa ever be Able to Overcome its Poor Economic Growth? The "Geography" of Economic Growth: Will The East Asia Example Solve the Problem of Inequality? Economic Growth and the Environment; The Effects of the Oil Industry on the Norwegian Economy; Costa Rica in Transition: the Shift from Agriculture to Ecotourism; Regional Funds of the European Union: Convergence or Redistribution; Health and Economic Growth; Escaping Growth Traps: Combating Child Labor with Education and Credit; Growth in Australia and New Zealand: Specific Focus on the Transition to Greater Openness; Economic Growth Effects of Openness and Trade on the Indian Economy; A Case Study of Chile's Development; For Better or Worse: How Oil Booms in the 1970s Resulted in a Declining Nigerian Economy; An Analysis of the Growth Experience of China after the Implementation of the Market Oriented Reforms of 1976; Supply Leading or Demand Causing: a Case Study of the Stock Markets of Taiwan and Thailand; Venezuela and the Oil Wealth; Corruption and its Effect on Economic Growth in Post-Communist Russia; Privatization in India; Can Countries Use Economic Growth Inducing Policies as a Means of Alleviating Poverty? Economic Growth and Poverty in Peru; The Czech Republic: Growing from Communism to Capitalism; Why Did the Economic Growth of Northern Cyprus and of the Republic of Cyprus Take Separate Paths? East Germany and Hungary: Two Different Transition Economies; Surviving the Crisis: Examining China's Economic Growth during the Asian Financial Crisis; Economic Growth in Taiwan: The Role of Urbanization and of Agglomeration; Chaebols and Korean Economic Development; East Asian Economic Integration and Growth; Information Technology and Economic Development in India. Armenian Economic Growth; Consequences of the One-Child Policy in the PRC; Health and Economic Growth; African AIDS Epidemic and Economic Growth; Underground Economy and Economic Growth in Romania; Greek Economic Growth. China's Foreign Investment and African Growth. The Impact of the Tsunami and The Nuclear Power Station Accident on Japanese Economic Growth. Etc...

Of particular importance for the course are the research part of the paper and the class presentations of student papers. Regarding the writing part, remember that the Academic Resources Center provides help through a variety of ways. Check out their site:

<http://uss.tufts.edu/arc/>

Class presentations are an excellent exercise. They also provide valuable case studies and help students learn from each others' research. Normally, students feel very eager about presenting the work in class, and their presentations enrich the class experience. We will

discuss in class ideas on how to make best use of class presentations. We will dedicate the last two weeks of the course to class presentations.

1.2 Electronic Resources and Data Sets

I strongly recommend that you substantiate your work with data and encourage use of statistical and econometric techniques. A special class session with Connie Reik, a research librarian, will be scheduled. And, I personally have a fair amount of experience with electronic resources and am anxious to help you. I will provide a document with suggestions about economics-related resources on the web and the library.

Last but not least, I urge all of you to become acquainted with the academic integrity policies at Tufts University. Please check the following site and its hyperlinks:

<http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic%20Integrity%2010-11.pdf>

Matters of academic integrity are very important.

1.3 Books

This class is a quantitative economics elective, and as a result by design is pitched at a higher level than our regular economic growth class (EC 116).

1. I have chosen Galor, Oded. 2011. *A Unified Theory of Economic Growth*. Princeton, NJ: Princeton University Press.

This book provides an overarching theme, as it comes out of the modern study of economic growth.

2. A second important book is: Acemoglu, Daron, *An Introduction to Modern Economic Growth*, Princeton University Press, Princeton, 2009, [**DA**]

This is a graduate level text, but an excellent source for some of the material that we will cover. I will supply on **Trunk** sections from it. you dont have to buy anything.

3. We will also use additional material from various sources, but mainly a few chapters from the

Aghion, Philippe, and Steven N. Durlauf, eds., *Handbook of Economic Growth*, Elsevier, 2005,

which is available in hardcopy (on reserve) and electronically at Tisch. That is, the individual chapters are available electronically as follows: go to Tisch entry for the book, click under “electronic access” and you will be taken to the chapters in electronic form. If the chapter you want does not come up on the screen, go up and enter in the box the author’s name, click search, and you will get it.

4. If you wish to have a qualitative exposition to the subject of economic growth, here is a good book, which you can get cheaply in an earlier edition on the web:

Weil, David N., *Economic Growth*, Pearson Addison–Wesley, Reading, MA, 2005 [on reserve at Tisch Library]

5. We will use (as supplementary materials) a couple of short sections from the book Romer, David (2012), *Advanced Macroeconomics*, and is therefore placed on reserve at Tisch.

6. Also placed on reserve at Tisch is:

Spence, A. Michael. 2011. *The Next Convergence: The Future of Economic Growth in a Multispeed World*. New York: Farrar, Strauss and Giroux.

This book grew out of the Growth Commission, a project of the World Bank.

7. Also placed on reserve is:

Lucas, Robert E. *Lectures on Economic Growth*. Cambridge, MA: Harvard University Press.

8. The following macroeconomics text provides technical material that may prove useful (for those who want to delve deeper):

Azariadis, Costas. *Intertemporal Macroeconomics*. Oxford: Blackwell.

Additional materials, referred to below as “Ioannides notes,” will also be used and are detailed below.

Items marked by asterisk (*) denote very technical material which is typically optional. Its intuitive content will be presented in simple terms on class. Required readings will be available on reserve. URL is provided, when appropriate, for material on the web.

Do not be deterred by the complexity of some items on the list of readings. The class will be defined entirely by the lectures.

READING LIST

2 Introduction to economic growth: Facts

DA, Ch. 1, pp. 3–25.

Galor, Oded. 2005. “From Stagnation to Growth: Unified Growth Theory.” in Aghion and Durlauf, Vol. 1A, Ch. 4. Also online, pp. 174–234. These basic facts are also discussed at greater length in Galor (2011), Ch. 1 and 2. We will survey them in order to get the “big picture.” We cannot absorb all of them!

3 Evolution of Output and Economic Growth

3.1 The Descriptive (Solow) Neoclassical Growth Model

DA, Ch. 2, pp. 26–47.

Ioannides notes.

3.2 Comparative dynamics

DA, Ch. 2, pp. 67–68.

3.3 Technological change

DA, Ch. 2, pp. 58–59

4 The Solow Model and the Data

DA, Ch. 3, p. 77–100.

4.1 The Malthusian Theory of Economic growth

Galor (2011), sections of Ch. 3.

5 Ramsey–Cass–Koopmans neoclassical growth model

This material will be based on notes by Professor Ioannides, but here are some relevant sections in DA:

DA, Ch. 6, pp. 219–221, Ch. 8, pp. 287–313.

An application on the benefits of international migration:

Maurice Obstfeld, Kenneth Rogoff. 1996. *Foundations of International Macroeconomics*. Ch. 7, 448–454.

6 Growth with Overlapping Generations, Savings and Social Security

Ioannides notes.

DA, Ch. 9, pp. 327–342.

Romer, David, *Advanced Macroeconomics*, pp. 76–92. [On reserve at Tisch].

6.1 An Application to Foreign Aid

Ioannides notes.

Alesina, Alberto, and David Dollar, “Who Gives Foreign Aid to Whom and Why?,” *Journal of Economic Growth*, 5, 33–63, 2000; also downloadable from www.nber.org/papers/w6612.

Burnside, Craig, and David Dollar, “Aid, Policies and Growth,” *American Economic Review*, 2000, 90, 4, 847–868; downloadable from www.jstor.org.

7 Saving and growth in the international economy

DA, Ch. 19, pp. 653–655.

Ioannides notes.

8 Endogenous growth and technological progress

Ioannides notes.

Various selections from DA.

9 Fundamental determinants of differences in economic performance

DA, Ch. 4, pp. 109–143.

Group discussion.

See also section on “Institutions and Economic Growth,” below.

10 Demographic Transition

Galor (2011), Ch. 4.

11 Unified Growth Theory and its Applications

Galor (2011), Ch. 5.

See also, in abridged form, Galor (2005), in Aghion and Durlauf, Ch. 4, 235–264.

This material is more advanced, but we shall have developed the basic analytical tools first and then proceed very slowly, emphasizing qualitative aspects.

12 Topics: Unemployment and Growth via the Pissarides model

Ioannides notes, based on Christopher Pissarides, *Equilibrium Unemployment Theory* (2000), MIT.

13 Topics: Urbanization and Economic Growth

Henderson, J. Vernon (2005) “Urbanization and Growth,” Ch. 24, in Aghion, Philippe, and Steven Durlauf, eds., *Handbook of Economic Growth*, Vol. 1B, Ch. 24, pp. 1543–1591. Online at Tisch.

Ioannides notes.

14 Institutions and Economic Growth

Acemoglu, Daron, Simon Johnson, and James A. Robinson (2005), “Institutions as a Fundamental Cause of Long-Run Growth.” Ch. 6, in Aghion, Philippe, and Steven Durlauf, eds., *Handbook of Economic Growth*, Vol. 1B, Ch. 24, pp. 385–472. Online at Tisch.

Group discussion.

15 Topics: Natural Resources and Economic Growth

Romer, David, *Advanced Macroeconomics*, pp. Section 1.8, pp. 35–43.

*Brock, William A., and M. Scott Taylor (2005). “Economic Growth and the Environment: A Review of Theory and Empirics.” Ch. 28, in Aghion, Philippe, and Steven Durlauf, eds., *Handbook of Economic Growth*, Vol. 1B, pp. 1749–1821. Online at Tisch.

16 Student Class Presentations

A detailed schedule of presentations will be handed out once students have decided on the final drafts of their papers.

17 Epilogue

Various texts and if we have any time left. The topic of growth will be fun to contemplate, after we have gone through the extraordinary progress that economic theory has made.

“Epilogue: Mechanics and Causes of Economic Growth” **DA**, pp. 861–874.

“Human Evolution and the Process of Development”. Galor (2011), Ch. 7.

Speculative thoughts about the 21st Century: Keynes, John Maynard, 1930. “Economic Possibilities for our Grandchildren.” *Essays in Persuasion*, (1963). New York: Norton, pp. 358–373. Online at Blackboard.

Also, the text abridged: <http://www.econ.yale.edu/smith/econ116a/keynes1.pdf>
and an essay on the text:

<http://www.minneapolisfed.org/research/QR/QR3212.pdf>