BILKENT UNIVERSITY
Department of Economics
Econ 453 Theories of Growth and Development, Fall 2014

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In this course we will deal mainly with the traditional and the new theories of growth and their implications for development macroeconomics. We will be mostly concerned with the determinants of the wealth of nations and also the appropriate national policies to achieve sustained and stable growth. We will regard the economic machine being in motion towards its long run (steady state) equilibrium, in all its giant complexity with many interrelated markets and different agents, classes and institutions. Four sets of issues will be addressed: we will:

(i) examine the recent evidence on the stylized facts and empirical regularities of economic growth across nations;
(ii) study traditional models of growth that were designed to explain these facts through various hypotheses, and focus on the interlinkages between growth and distribution as envisaged through alternative paradigms;
(iii) study the necessary ingredients of endogenous sources of growth and look at the seminal endogenous growth models; focusing, in particular, on the role of technological change and the market structure;
(iv) study alternatives to the neoclassical vision of the economy and contrast the structure and implications of models based on Marxian and (Neo)-Ricardian growth;

The course involves a fairly heavy reading load, the completion of which is essential to understanding the issues and controversies highlighted in the lectures. The lecture material will be complemented with various hand-outs relevant to the subject matter in due course. I will highlight some of the material as of secondary interest and regard as "optional reading" during the class.

Grading will be based upon: (i) One midterm (40%) (*November 19, Wednesday: 16:30 – 19:30*); (ii) a Final Exam (40%) (*date to be scheduled by the Registrar's Office*); and (iii) a finite number of homeworks and effective classroom participation (20%).

Each exam will be given *only* at the scheduled time, Wednesday, November 19, and as scheduled by the Registrar's Office during the Finals' week. Should an emergency prevent you from taking either exam, if you notify me in advance and if the emergency is verified by the University's Health Office, your grade will be based on the other remaining work in the course. Note that late homework sets will not be accepted under any exception, and **no homeworks via e-mail attachments please**!

Participation to lectures is *not a must*, but is *highly recommended* given observed empirical regularities on the external economies of lecture attendance on your course performance as well as your overall happiness as a young economist. However, (and this is important):

- If you fail to submit less than half of the homeworks; and/or
- If your midterm grade is less than tens value of the decimal system

You will not be allowed to take the final exam and your grade will automatically be set as FZ

Readings:

The following texts will be followed closely, and it is advised that you purchase them:

Yeldan, Erinç (2009) *Theories of Growth and Distribution*, Efil Yay.

Jones, Charles (2002) *Introduction to Economic Growth*, New York and London: Norton Pub.

You may also consider having the following texts in your tool-box (these are on reserve at the Bilkent Library):

Akyüz, Yılmaz (reprint: 2010) *Sermaye, Bölüşüm, Büyüme*, Efil yay.

Ertuğrul, Ahmet (2013) *Ekonomik Teori ve Analizin Tarihi*, Efil Yay.

Weil, David (2005) *Economic Growth*, New York: Pearson–Addison Wesley

In addition we will discuss all the papers listed below (except marked as optional) in class. This is *not* an exhaustible list of the papers in the subject area, though it should be useful enough for a head start.

All the course material is available either through electronic downloadable form at *Bilkent Library electronic journals database*, or via electronic links provided. It is your responsibility to make your own copies. **Note that some of the journals and sites such as the NBER and JSTOR will give you access only from a computer registered at Bilkent or from the Bilkent Library.**

For *lighter reading on economic growth*, you may wish to try the following books:

Piketty, Thomas (2014) *Capital In the Twenty-First Century*, Belknap & Harvard.

Acemoğlu, Daron and James Robinson (2012) *Why Nations Fail?* Crown Pub.

Rodrik, Dani (2007) *One Economics, Many Recipes: Globalization, Institutions and Economic Growth* Princeton U Press.

Easterly, William (2006) *The White Man's Burden*, Penguin.

Landes, David (1998) *The Wealth and Poverty of Nations.* New York: Norton.

de Soto, Hernando (2000) *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else.* New York: Perseus.

Diamond, Jared (1999) *Guns, Germs, and Steel,* New York: Norton

Rodrik, Dani, ed., 2003. *In Search of Prosperity: Analytic Narratives on Economic Growth.* Princeton: Princeton University Press.

Useful, but *more advanced, texts* on economic growth include:

Acemoglu, Daron (2009) *Introduction to Modern Economic Growth*, Princeton U. Press.

Ros, Jaime (2000) *Development Theory and the Economics of Growth*, Michigan U Press

Raj, Debraj (1998) *Development Economics*, Princeton U Press.

Aghion, Philippe, and Peter Howitt (1998) *Endogenous Growth Theory.* Cambridge, MA: MIT Press.

Barro, Robert J., and Xavier Sala-i-Martin (2003) *Economic Growth,* second edition. Cambridge, MA: MIT Press.

READING LIST and COURSE OUTLINE

"*The challenge isn't to find occult links between Debussy and the Templars. Everybody does that. The problem is to find occult links between, for example, cabbala and the spark plugs of a car.(...) Any fact becomes important when it's connected to another. The connection changes the perspective*".
Umberto Eco, *Foucault's Pendulum*. P.314.

Stylized Facts and Empirical Regularities of Economic Growth

We start with economists' observations on empirical regularities of growth and the "development facts". We ask the main nagging question: "why in the West, and why starting in the 18th century?" Then, we will build upon a simple growth model, linking issues of technology, savings, accumulation, growth and distribution to highlight the importance of initial hypotheses and the building blocks.

Yeldan, Erinç "History of Economic Growth and Economic Growth Throughout History" Chapter 1 in *Economics of Growth and Distribution*,.

Jones (2002) op. cit. Chp 1, also familiarize yourself with the technical material in Appendix A.

"The Road to Riches" *The Economist*, December 31, 1999 (the millennium issue).

Piketty (2014): Part II. The Dynamics of the Capital/Income Ratio, pp.113-30.

Golub, P. (2005) "All the Riches of the East Restored" *Le Monde Diplometique*, October.
Available online at http://mondediplo.com/2004/10/04asia

Yeldan, Erinc "Stylized facts and Empirical Regularities of Growth" Chapter 2. *op.cit.*

Zagha, R., G. Nankani and I. Gill (2006) "Rethinking Growth" *Finance and Development*, March, 43(1): 7-11.
Download from the IMF link at:
http://www.imf.org/external/pubs/ft/fandd/2006/03/zagha.htm

OECD (2014) "Policy Challenges for the Next 50 Years" Economic Policy Paper, no 9, July.
http://www.oecd.org/economy/growth/Policy-challenges-for-the-next-fifty-years.pdf

(o) Acemoglu, Daron, Simon Johnson and James Robinson (2005) "The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth" *American Economic Review*, June 95(3): 546-579.

Neoclassical Growth (with exogenous saving rates)

The neoclassical growth model is based on optimization behavior of consumers and producers as summarized with the marginality principle. It posits a "neoclassical" production function between capital and labor, and investigates the transitional dynamics of an essentially "savings-driven" economy. Yet, the long run (steady state) equilibrium is left unexplained. Its main feature is that distribution is primarily determined by technology, or that, growth process is resolved prior to distribution. The major implication of neoclassical growth is that, subject to certain hypotheses, per capita income levels across countries should converge as they approach to their respective steady states.

Jones (2002) op. cit. Chp 2, including Appendix to Chapter 2.

Yeldan, Erinc "Modeling Growth" Chapter 3 *op.cit.*

(o) Solow, R.M. (1956) "A Contribution to the Theory of Economic Growth" *Quarterly Journal of Economics* 70(1): 65-94.

Neoclassical Growth: The Golden Rule and the Golden Age of Capital

Once upon a time the Kingdom of Solowia was gripped by a great debate: "this is a growing economy, but we can grow faster"…So the King appointed a task force under the leadership of the Vezir, Oiko, to study the facts of economic life in Solowia, and to find the optimal investment rule. Oiko was heard to say,"Forget grand optimality in terms of extremums, derivatives, Lagrangeans, and Hamiltonians. Solowians are a simple people. We need a simple policy rule".

Here, we will seek for the "optimal" rate of savings and accumulation in a neoclassical economy, and analyze the features of the "golden rule of accumulation" together with the golden age (of capital, that is).

(o)Phelps, E. (1961) "The Golden Rule of Capital Accumulation: A Fable for Growthmen" *American Economic Review* 51(4): 638-643.
Downlad from JSTOR link below:
http://links.jstor.org/sici?sici=0002-8282%28196109%2951%3A4%3C638%3ATGROAA%3E2.0.CO%3B2-I

The following reading presents/discusses the same idea from the perspective of social classes:

Thompson, Frank (2003) "Golden Age vs. Golden Rule: Capitalists vs. Workers in Growth Theory" *Review of Radical Political Economics*, Winter, 35(1): 3-17.
Available in electronic reserve of the Bilkent Library, Ec453.

Neoclassical Growth with Inter-temporal Optimization

The exogeneity of savings in the neoclassical model was relaxed with the hypothesis of the so-called Ramsey model of optimal consumption choice (consumption smoothing). The following texts discuss the features of neoclassical model under inter-temporal optimization. The essence of the model together with its long run implications, however, remains unchanged.

Read Yeldan chapter IV section 3.

Barro, R.J. & X. Sala-i Martin (1995) *Economic Growth,* New York: McGraw Hill. Chapter 2.

(o) Ramsey, F.P. (1928) "A Mathematical Theory of Savings" *Economic Journal*, 38: 543-559.

Policy Implications of the Neoclassical Growth Model

Easterly, Chapter 3, "Solow's Surprise: Investment is Not the Key to Growth"

(o) Krugman P. (1994) "The Myth of Asia's Miracle" *Foreign Affairs* November-December: 62-78.
Available from *Foreign Affairs* at:
http://www.foreignaffairs.org/19941101faessay5151/paul-krugman/the-myth-of-asia-s-miracle.html

Jones, Chapter 3, "Empirical Applications of Neoclassical Growth Models"

Empirics of Growth

Convergence across nations, as one of the major implications of the traditional neoclassical model, has been put to test in many papers. Below is a non-exhaustive, yet suggestive, list of what has been said thus far, for those of you who are interested in more readings in this area.

Symposium: What Have We Learned From A Decade of Empirical Research On Growth?" *The World Bank Economic Review* Vol 15, No 2, pp. 177-289.

(o) Mankiw, N.G., D. Romer & D.N. Weil (1992) "A Contribution to The Empirics of Economic Growth" *Quarterly Journal of Economics* May, 107(2): 407-437.

(o) Bernanke, Ben and Refet Gurkaynak (2001) "Is Growth Exogenous? Taking Mankiw, Romer and Weil Seriously" *NBER Working Papers*, No. W8365, July.

(o) Barro, R.J. & X. Sala-i Martin (1995) *Economic Growth,* New York: McGraw Hill. Pages: 383-401.

Ricardian Theory of Growth and Income Distribution

The basic characteristic of the Ricardian growth models is that distribution and growth processes are resolved simultaneously. Rather than assuming a production functional, Neo-Ricardians posit an independent investment function, and seek out long run equilibrium in terms of changing class shares, to attain a balance between aggregate savings and investment.

Yeldan Chapter 5.

Kaldor, N. (1956) "Alternative Theories of Distribution", *Review of Economic Studies* 23: 34-100.
Download from JSTOR link below:
http://links.jstor.org/sici?sici=0034-6527%281955%2F1956%2923%3A2%3C83%3AATOD%3E2.0.CO%3B2-P

Pasinetti, L. (1961) "Rate of Profit and Income Distribution in Relation to the Rate of Economic Growth" *Review of Economic Studies* 29: 267-279.
Download from JSTOR link below:
http://links.jstor.org/sici?sici=0034-6527%28196210%2929%3A4%3C267%3AROPAID%3E2.0.CO%3B2-D

Marxian Growth

The two excerpts below should give a basic understanding of the distinguishing principles of Marxian growth.

Yeldan Chapter V-2 and also V-3

(o) Harris, D. (1978) *Capital Accumulation and Income Distribution* Chp 3.

Introduction to Endogenous Growth Modeling

Faced with many of the shortcomings of the traditional models of exogenous growth, research has focused on the determinants of growth as can be explained within the context of the economic machine. Two major shortcomings of the traditional neoclassical model were: first, the neoclassical model used to leave technological change unexplained; and second, culminating empirical evidence suggested that long run rates of growth are sensitive to economic policies pursued by the governments, and the traditional model failed to capture much of this phenomenon.

We will start with the underlying ingredients of endogenous growth and synthesize the common methods used to endogenize the standard model.

Yeldan Chapter 6

Sala-i Martin, X. (1990) "Lecture Notes on Economic Growth (I): Introduction to the Literature and Neoclassical Models" *NBER Working Paper* No 3563, December.
Download from *NBER* at: http://www.nber.org/papers/w3563.v5.pdf

Romer, P. (1994) "The Origins of Endogenous Growth" *The Journal of Economic Perspectives*, Winter, 8(1): 3-22.

(o) Sala-i Martin X. (1990) "Lecture Notes on Economic Growth (II): Five Prototype Models of Endogenous Growth" *NBER Working Paper,* No 3564, December.

Models Based on *AK*, Externalities, Learning by Doing and Human Capital

One strand of endogenous growth theory relies on externalities and on the nature of technology which enables non-diminishing returns to the cumulative factor, capital.

Jones Chp 3: pp. 54-63.

Jones, Chp 8: Alternative Theories of Endogenous Growth.

The following are the seminal papers on the varieties of endogenous growth structure
(o) Rebelo, S. (1991) "Long-Run Policy Analysis and Long-Run Growth" *Journal of Political Economy* 99: 500-521.

(o) Barro, R.J. (1990) "Government Spending in a Simple Model of Endogenous Growth" *Journal of Political Economy,* October, Part II, 98(5): S103-S125.

(o) Lucas, R.E.J (1988) "On the Mechanics of Economic Development" *Journal of Monetary Economics,* 22(1): 3-42.

Economics of Ideas and the R&D-Based Models of Endogenous Growth

R&D-driven models of endogenous growth are based on three premises: (i) technological development is the ultimate source of growth; (ii) advances in technology occurs not because of chance or birth of Einsteins at random rate, but rather arises because of purposeful actions of optimizing agents in a market setting; (iii) technology is a different good than other economic goods.

Two important implications of the R&D-driven endogenous growth paradigm are that, firstly, the above three premises can not be sustained in a perfectly competitive market setting with marginal cost price taking; and secondly, changes in policy have permanent effects on the long run rate of growth. This latter implication is criticized heavily by Jones, an example of which is provided in Jones (1997) below.

A major shortcoming of the R&D-driven growth framework is that the long run rate of growth is sensitive to the size of the stock of human capital (or to population in simpler models which do not distinguish between skilled and unskilled labor) and, thus, in order to attain balanced growth, the stock of human capital has to be assumed constant over time.

Yeldan Chapter 7

Romer, P. (1992) "Two Strategies for Economic Development: Using Ideas and Producing Ideas" *Proceedings of the World Bank Annual Conference on Development Economics,* IBRD: 63-92. (See also comments).

Jones Chapter 4: The Economics of Ideas,
and Chapter 5: the Engine of Growth

(o) Romer, P. (1990) "Endogenous Technological Change" *Journal of Political Economy* 98(5): S71-S102. (*You CAN read this paper: skip math, if necessary)*
Available online from JSTOR at:
http://links.jstor.org/sici?sici=0022-3808%28199010%2998%3A5%3CS71%3AETC%3E2.0.CO%3B2-8

(o) Romer, Paul M. (1996) "Why, Indeed, in America? Theory, History, and the Origins of Modern Economic Growth" *American Economic Review*, 86(2): 202-206.
Download from JSTOR link at:
http://links.jstor.org/sici?sici=0002-8282%28199605%2986%3A2%3C202%3AWIIATH%3E2.0.CO%3B2-L

The following is a serious critique of the hypotheses implicit in the R&D-Based Growth literature:
Jones, C.I. (1997) "The Upcoming Slowdown in US Economic Growth" *NBER Working Paper* No 6284.

(o) Easterly, chapters 8 and 9

Alternative Approaches to Neoclassical Endogenous Growth

The origins of many new insights: Schumpeterian growth…

Yeldan Chapter VII-4.

Beaugrand, Philippe (2004) "And Schumpeter said: 'this is how thou shalt grow': The Further Quest for Economic Growth in Poor Countries" *IMF Working Paper*, no WP/04/40, March.

The International Economy: Growth, Openness and Trade Policy Reform
(optional, to be handled as time permits)

Much energy has been put into the debate on the links between openness and growth. Empirical studies from an orthodox perspective have often claimed a negative relationship between protection and growth. However, this literature arguably suffers from serious deficiencies in terms of its analytical and conceptual propositions. The recent paper by Samuelson below gives a balanced view of the analytics of these arguments, while Rodrik draws a distinction between microeconomic distortions which would not necessarily lead to economic instability, nor warrant reductions in the long term growth) and unsustainable macroeconomic policies.

Proponents:

Balassa, B., 1988, "Outward orientation," in H. Chenery and T.N. Srinivasan (eds.), *Handbook of Development Economics*, vol. 2, Amsterdam: North-Holland, pp.1645-1689.
Book on Reserve of the Bilkent library

A. Krueger (1998) "Why Trade Liberalisation is Good for Growth" *The Economic Journal* 108 (September): 1513-1522.

(o) A. Krueger (1974) "The Political Economy of Rent Seeking Society." *American Economic Review*, 64:3, 291-303.

Sceptics of the "liberalize trade and pick up the free dollar bills laying on the streets" approach:

Hausmann, R., D. Rodrik and A. Velasco (2006) "Getting the Diagnosis Right" *Finance and Development*, March, 43(1): 12-15.
Download from the IMF link at:
http://www.imf.org/external/pubs/ft/fandd/2006/03/hausmann.htm

Rodrik, Dani (1996) "Understanding Economic Policy Reform" *Journal of Economic Literature*, March, vol.34: 9-41.

Rodrik, Dani (2003) "Growth Strategies" paper prepared for the Handbook of Growth Economics. http://ksghome.harvard.edu/~drodrik/growthstrat10.pdf

With a more serious critique and strong caveats:

(o) Rodriguez, F. and Dani Rodrik (2000) "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence" *NBER Working Paper, No. 7081*, (Revised version, May).

and, some concluding technical points

(o) Frankel J. and D. Romer (1999) "Does Trade Cause Growth?" *American Economic Review*, 89(3):379-399, May.

(o) Samuelson, Paul (2004) "Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization" *Journal of Economic Perspectives*, 18(3), Summer, pp. 135-146.

On the other hand, there is strong evidence that openness stimulates externalities: In fact, one of the implications of R&D-driven growth is that size matters. Thus, countries which are open to foreign trade can have access to the stock of foreign R&D crystallized in imports of machinery.

Helpman and Coe claim that international trade will bring fruits of productivity gains,
(o) Coe, D. T., E. Helpman and A.W. Hoffmaister (1997) "North-South R&D Spillovers" *European Economic Review*, January, 107: 134-149.

Diao, Roe and Yeldan argue that such gains are not automatic and call for a ***strategic trade*** *policy*
(o) Diao, X., T. Roe and E. Yeldan (1999) "Strategic Policies and Growth: An Applied Model of R&D-Driven Endogenous Growth", *Journal of Development Economics*, Vol 60: 343-380.

As in Lall and Teubal
(o) Lall, Sanjaya and Morris Teubal (1998) "Market-Stimulating Technology Policies in Developing Countries: A Framework with Examples from East Asia" *World Development* 26(8): 1369-1385.

The Role of Institutions and Socio-Cultural Factors
(optional, to be handled as time permits)

Olson, Mancur, 1996. "Big Bills Left on the Sidewalk: Why Some Nations Are Rich, and Others Are Poor." *Journal of Economic Perspectives* 10 (Spring): 3–24

International Monetary Fund, 2003. "Growth and Institutions." In *World Economic Outlook April 2003,* pp. 95–128 [on-line access at www.imf.org]

(o) Easterly, William, and Ross Levine, 2003. "Tropics, Germs, and Crops: How Endowments Influence Economic Development." *Journal of Monetary Economics* 50 (January): 3–39

(o) Rodrik, Dani, et al., 2002. "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development." NBER Working Paper 9305 [on-line access at www.nber.org]

(o) Sachs, Jeffrey D., 2003. "Institutions Don't Rule: A Refutation of Institutional Fundamentalism." NBER Working Paper No. 9490 [on-line access at www.nber.org]

(o) Kuran, Timur, 2004. "Why the Middle East is Economically Underdeveloped: Historical Mechanisms of Institutional Stagnation." USC Center for Law, Economics, and Organization, Research Paper No. C03-24

Available on-line at http://ssrn.com/abstract=475205]

Let's Try to Conclude

Finally, we will wrap things up with the following :

Yeldan Chapter 8

N. Gregory Mankiw; Edmund S. Phelps; Paul M. Romer (1995) "The Growth of Nations" *Brookings Papers on Economic Activity*, Vol. 1995, No. 1, pp. 275-326. Available online from JSTOR at: http://links.jstor.org/sici?sici=0007-2303%281995%291995%3A1%3C275%3ATGON%3E2.0.CO%3B2-Y

Kenny, Charles and David Williams (2001) "What Do We Know About Economic Growth? Or, Why Don't We Know Very Much?" *World Development*, 29(1): 1-22.

Fine, Ben (2000) "Endogenous Growth Theory: A Critical Assessment" *Cambridge Journal of Economics* 24: 245-265.

(o) Solow, R. (1994) "Perspectives on Growth Theory" *Journal of Economic Perspectives* 8(1): 45-54.

Roberts, M. and Setterfield, M. (2005) "What is Endogenous Growth Theory?" *mimeo.* Available at *Bilkent Library electronic reserve, Ec453*.

As a final remark, think about the following:

QUESTIONS FROM A WORKER WHO READS

Who built Thebes of the seven gates?
In the books you will find the names of kings.
Did the kings haul up the lumps of rock?
And Babylon, many times demolished
Who raised it up so many times? In what houses
Of gold-glittering Lima did the builders live?
Where, the evening that the Wall of China was finished
Did the masons go? Great Rome
Is full of triumphal arches. Who erected them? Over whom
Only palaces for its inhabitants? Even in fabled Atlantis
The night the ocean engulfed it.
The drowning still bawled for their slaves.

The young Alexander conqured India.
Was he alone?
Caesar beat the Gauls.
Did he not have even a cook with him?
Philip of Spain wept when his armada.
Went down. Was he the only one to weep?
Frederick the Second won the seven Years' War. Who
Else won it?

Every page a victory
Who cooked the feast for the victors?
Who paid the bill?

So many reports.
So many questions.

Bertolt Brecht