BILKENT UNIVERSITY
Department of Economics
Econ 453 Theories of Growth and Development I
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"I don't really live in the actual world"
Bob Dylan.

"*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.

I will deal mainly with the new growth theory and development macroeconomics in this course. 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 which were designed to explain these facts through various exogeneity assumptions; 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) change gears towards the end of the course, and look into issues of stabilization and macroeconomic policy in an open developing country within the context of global world economy.

Grading will be based upon: (i) One midterm (40%) (*November 15, Thursday*) (ii) a Final Exam (40%); (iii) a take home exam (10%) upon which you will work during the finals' week; (iv) finite number of homeworks and effective classroom participation (10%).

READING LIST

Selected chapters from the following texts will be followed closely:

> David Weil, *Economic Growth*, forthcoming.
>
> Jones, Charles (1998) *Introduction to Economic Growth*, New York and London: Norton Pub.
>
> Agenor, Pierre-Richard (2000) *The Economics of Adjustment and Growth*, Academic Press

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 to be put in reserve of the Bilkent Library system. It is your responsibility to make your own copies, if necessary.

Stylized Facts and Empirical Regularities of Economic Growth

We start with economists' observations on empirical regularities of growth and the "development facts". 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.

Weil, op. cit. Chps 1 & 2.

Jones (1998) op. cit. Chp 1

Jovanovic, Boyan (2000) "Growth theory" *NBER Working Papers*, No. W7468, January.

Parente, S.L. & E. Prescott (1993) "Changes in the Wealth of Nations" *Federal Reserve Bank of Minneapolis Quarterly Review* Spring.

Baldwin, R. E. and P. Martin (1999) "Two Waves of Globalization: Superficial Similarities, Fundamental Differences" *NBER Working Paper*, No. W6904, January.

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.

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.

Weil, op. cit. Chp 3

Jones (1998) op. cit. Chp 2

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

Neoclassical Growth with Inter-temporal Optimization (optional)

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.

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

(o) Cass, D. (1965) "Optimum Growth in an Aggregative Model of Capital Accumulation" *Review of Economic Studies*, 32(3): 233-240.

(o) Koopmans, T.C. (1965) "On the Concept of Optimum Growth" in *The Econometric Approach to Development Planning*, Amsterdam: North Holland.

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

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).

Phelps, E. (1961) "The Golden Rule of Capital Accumulation: A Fable for Growthmen" *American Economic Review* 51(4): 638-643.

The following reading visits the same idea from the perspective of social classes:

Thompson, Frank (1998) "Golden Age vs. Golden Rule: Capitalists vs. Workers in Growth Theory" Paper presented at the URPE meetings in New York, January, 1999.

Convergence Controversies *(Optional Reading)*

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 had been said thus far, for those of you who are interested in more readings in this area.

(o) Barro, R. and S.X..Martin (1995) "Convergence Across States and Regions", *Brookings Papers on Economic Activity*, 1: 107-182.

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

(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) Quah, D (1996) "Twin Peaks: Growth and Convergence in Models of Distribution Dynamics" *The Economic Journal*, 106: 1045-1055.

(o) Schmitz, A.J. (1993) "Early Progress on the 'Problem of Economic Development'" *Federal Reserve Bank of Minneapolis Quarterly Review,* Spring.

(o) Krugman P. (1994) "The Myth of Asia's Miracle" *Foreign Affairs* November-December: 62-78.

(o) Sachs, J. & A.M. Warner (1995) "Economic Convergence and Economic Policies" *NBER Working Papers*, No. 5039, February.

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.

Kaldor, N. (1956) "Alternative Theories of Distribution", *Review of Economic Studies* 23: 34-100.

Pasinetti, L. (1961) "Rate of Profit and Income Distribution in Relation to the Rate of Economic Growth" *Review of Economic Studies* 29: 267-279.

Marxian Growth

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

Marglin, S.A. (1984) *Growth, Distribution and Prices* Harvard U. Press, chp 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.

Sala-i Martin, X. (1990) "Lecture Notes on Economic Growth (I): Introduction to the Literature and Neoclassical Models" *NBER Working Paper* No 3563, December.

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

Pack, H. (1994) "Endogenous Growth Theory: Intellectual Appeal and Empirical Shortcomings" *Journal of Economic Perspectives* 8(1): 55-71.

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. 47-56.

Jones, Chp 8.

The following are the seminal papers on the varieties of endogenous growth structure

Rebelo, S. (1991) "Long-Run Policy Analysis and Long-Run Growth" *Journal of Political Economy* 99: 500-521.

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

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

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 gods.

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.

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 Chp 4 and 5

Romer, P. (1990) "Endogenous Technological Change" *Journal of Political Economy* 98(5): S71-S102. (*You CAN read this paper: skip math, if necessary)*

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.

The International Economy: Growth, Openness and Trade Policy Reform

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 Weil chapter 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.

Weil Chapters 6 and 10.

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

Rodrik, Dani (1992) "The Limits of Trade Policy Reform in Developing Countries" *Journal of Economic Perspectives* 6(1): 87-105, Winter.

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.

Coe, D. T., E. Helpman and A.W. Hoffmaister (1997) "North-South R&D Spillovers" *European Economic Review*, January, 107:134-149.

Development Macroeconomics and Stabilization in an Open Economy

Now we turn our attention to issues of macroeconomic development and design of stabilization policies. First, we will analyze the impact of financial liberalization and the short term capital flows in an open developing economy given the recent financial crisis episodes in Mexico, Turkey, and East Asia.

What is the meaning of development under the age of financial globalization?
Adelman, I. And E. Yeldan (2000) "Is This the End of Economic Development?" *Structural Change and Economic Dynamics*, 11: 95-109.

Mkandawire, Thandika (2001) "The Need to Rethink Development Economics", Unite Nations Research Institute for Social Development, Geneva, *mimeo.*

Levitt, K. Polanyi (2001) "Reclaiming the Right to Development" Paper presented at the UNRISD Conference on "the Need to Re-Think Development Economics" Cape Town, September, 2001.

Rodrik, Dani (2001) "The Global Governance of Trade As If Development Really Mattered" Harvard University, J.F. Kennedy School of Government, *mimeo.*

Grabel, Ilene (1996) "Marketing the Third World: The Contradictions of Portfolio Investment in the Global Economy" *World Development*, 24(11):1761-1776.

Easterly, William (2001) "The Lost Decades: Developing Countries' Stagnation in Spite of Policy Reform" The World Bank, *mimeo.*

On the detrimental consequences of speculative-led growth and free mobility of short term capital:

Adelman, Irma (ed) Special Issue on Financial Liberalziation in *World Development* 28(6):1053-1142.

Akyuz, Y. and A. Cornford (1999) "Capital Flows to Developing Countries and the Reform of The International Financial System" *UNCTAD Discussion Paper* No 143, November.

Mishkin, F.S. (1999) "Global Financial Instability: Framework, Events, Issues" *Journal of Economic Perspectives*, Fall, 13(4): 3-20.

Calvo, G., L. Leiderman and C. Reinhart (1996) "Inflows of Capital to Developing Countries" *Journal of Economic Perspectives*, Spring, 10(2):123-140.

Singh, A. (1999) "Trade, Technology, Institutions, and Social Norms: A Perspective on the Determinants of Income Inequality" *WIDER Project Paper*, Helsinki.. December, Edwards, S. (1999) "How Effective Are Capital Controls" *Journal of Economic Perspectives*, Fall, 13(4): 65-84.

Agenor, P. Richard (2000) "Capital Inflows: Causes and Policy Responses" Chp. 6 in *The Economics of Adjustment and Growth.*

Next, we study the effectiveness of policies towards controlling moderate inflation in an open economy framework

Patinkin, D. (1993) "Israel's Stabilization Program of 1985, Or Simple Truths of Monetary Theory" *Journal of Economic Perspectives,* Spring, 7(2): 103-128

Calvo, G. (1991) "The Perils of Stabilization" *IMF Staff Papers*, December, 38(4): 921-926.

The Twin Crises and Financial Volatility

Kaminsky, Graciela and Carmen Reinhart (1999) "The Twin Crises: Tha Causes of banking and Balance of Payments Problems" *American Economic Review* 89 (June): 473-500.

Kaminsky, Graciela, Saul Lizondo and Carmen Reinhart (1998) "Leading Indicators of Currency Crises" *IMF Staff Papers,* 45 (March): 1-48.

Agenor, P. Richard (2000) "Currency Crises and financial Volatility" Chp 7 in *The Economics of Adjustment and Growth.*

Contrasting Views on the Turkish 2000-Crisis:

Selcuk, Faruk and Ahmet Ertugrul (2001) "A Brief Account of the Turksih Economy: 1980-2000" *Russian and East European Finance and Trade"* forthcoming.

Alper, Emre "The Turkish Liquidity Crisis of 2000: What Went Wrong" *Russian and East European Finance and Trade"* forthcoming.

Uygur, Ercan (2001) "Krizden Krize Turkiye: 2000 Kasim ve 2001 Subat Krizleri" Turkiye Ekonomi Kurumu tartisma Metni, No 2001/01.

Boratav, Korkut (2001) "2000-2001 Krizinde Sermaye Hareketleri" Iktisat, Isletme ve Finans" Eylul.

Yeldan, Erinc "On the IMF Directed Disinflation Program in Turkey: A Program for Stabilization and Austerity or a Recipe for Impoverishment and Financial Chaos?" in Balkan Nese (ed) *The Political Economy of Turkey*, Verso Press, forthcoming

Finally, this is a nice survey article to wrap-up:

Corden, M. (1987) "The Relevance for Developing Countries of Recent Developments in Macroeconomic Theory" *World Bank Research Observer*, 2(2): 171-187.