Volume 1 No.2 February 2013 ISSN : 2319-961X

SO NEAR YET SO FAR! THE ELUSIVE QUEST FOR THE ENGINES OF ECONOMIC GROWTH

T. Lakshmanasamy
Professor, Department of Econometrics, University of Madras, Chennai - 5
Email: tlsamy@unom.ac.in

Abstract

The fundamental question that Economics tries to answer is that of what are the sources or correlates of economics growth? In a cross-country setting the much perplexing issue is that why growth rate differs across economies and regions? In other words, what explains the persistence or growing differences in per capita income? Both mainstream growth theory and development economics try to seek explanations in terms of one or other economic variable or policy that could explain the large productivity differentials across countries. The growth theory attempts to identify the economic variable that could be the panacea for growth. The suggested growth factor ranges from capital to technology, domestic savings to FDI, geography to institutions, colonial origins to ethnicity, and culture to genetics. On the other hand, the development economics analyses the structural features of the economies and tries to identify the policy variable that could be the miracle policy towards the quest for growth. The suggested policy measures swings from protection to free trade, import substitution to export promotion, markets to state control, poverty alleviation to asset creation, investments in human capital to health and environment, nationalisation to deregulation, public sector to public-private partnership, financial reforms to microfinance, structural reforms to market reforms, open economy to regulated economy, building social capital to financial capital, reforming governance to institution building, and a host of polices and programmes. However, the search is simply an elusive quest and the development economics often fails to identify the factor and the simple mechanism or policy that could ensure growth. Still it can not be ruled that growth is simply random and there could be some 'ultimate' economic or perhaps a fundamental source, a panacea waiting to be identified, of economic growth.

Keywords: domestic savings, FDI, export promotion, poverty, microfinance, market reforms

Growth Theory

Modern economic theories maintain that capital accumulation is the engine of economic growth. the starting point for a rigorous growth determinant is the early keynesian macroeconomic type model developed by harrod and domar. taking total demand or investments as the main factor, the model arrives at a conclusion that the capital is the crucial factor for economic growth. later relying on the neoclassical framework, the solow model attempts to explain economic growth with the production function approach, in which the factor capital is still the prominent growth determinant (solow, 1956). the neoclassical growth model of the solow type is: $y= ak^{\alpha} l^{1-\alpha}$, or in per capita terms: $y = f(k)$, where $k= k/l$, $y = y/l$ with $f'>0$ and $f''<0$. the two main properties of such a type of approach are: (i) diminishing marginal returns: $(\vartheta y/\vartheta k)>0$ and $(\vartheta^2 y/\vartheta k^{2)})<0$, and (ii) constant returns to scale: $y= a(\lambda k)^{\alpha} (\lambda l)^{1-\alpha} = \lambda y = \lambda^{\alpha+1-\alpha} ak^{\alpha} l^{1-\alpha}$. then, along with the assumption of exogenous technical change, the source of growth is solely the accumulation of (physical) capital, and more importantly, the economic growth rate tends to settle at steady state – a situation in which the various economic quantities grow at constant rates. then, the only determinant of long-run per capita income growth is labor-augmenting technical progress, which is essentially exogenous in neoclassical world. since savings rate is a crucial determinant of capital investments, the keynes-ramsey-cass-koopmans model makes savings interest dependent and allows for inter-temporal optimization in combination with the

neoclassical production technique. according to this model, consumption growth is possible when the market interest rate is bigger than the rate of time preference (discount rate). in the long term steady state, under certain assumptions, a savings rate that maximizes steady state consumption per person can be achieved, a situation termed as golden rule of accumulation by phelps.

The Solow type growth models could explain only the steady state level of income and in effect they could not explain the possibility of unlimited growth in the long term. As capital increases do not cause economic growth beyond the steady state, the less advanced economies would grow faster than the more advanced ones and economic convergence along the steady state is the result. The government intervention in this context has been rather modest, mainly addressing problems of market failure and trade restrictions. Only the growth rate during the transitional dynamics towards the steady state and the capital intensity in the long term steady state are determined endogenously. This led to the quest for other endogenous determinants of growth, starting with the Paul Romer's concept of increasing returns and long run growth (Romer, 1986; 1990). The clue lies in challenging the assumptions of diminishing returns to factors and the constant returns to scale. The New Growth Theory or Endogenous Growth Models allow for non-decreasing (at least constant) returns to factors and increasing returns to scale. By endogenising the production technology, through new accumulation factors, mainly knowledge, and innovation, the role of technological progress as a key driver of long-run economic growth has been incorporated to explain the inducement to the self-sustained growth and divergent growth patterns (Barro and Salai-i-Martin, 1995; Aghion, and Howitt, 1998). These Endogenous Growth models take insights from the Schumpeter's concept of 'creative destruction', which stresses 'innovations' as a growth motor, Myrdal's 'cumulative causation theory' in which initial conditions determine economic growth of places in a self-sustained and incremental way, Arrow's concept of 'learning by doing" from investments, Krugman's 'new economic geography' which asserts that economic growth tends to be an unbalanced process favouring initially advantaged economies, and North's 'new institutional economics' in which the fundamental role of institutions and property rights in economic growth is highlighted (Deaton, 2010). The Endogenous Growth models disaggregate the concept of capital from merely physical capital to include knowledge and human capitals and include the growth enhancing positive spillovers (externalities) from a host of economic activities, such as education, public services, trade and R&D activities, elements which became decisive in the newer ideas. They try to identify the factors that contribute to the total factor productivity growth and the factors that potentially generate externalities and positive spillovers. Thus, in terms of Growth Accounting Framework, the search is on the sources of the Total Factor Productivity growth.

The New Growth Theory is a research programme in the neoclassical tradition initiated by Romer (1986; 1990), Lucas (1988), Barro (1990; 1991), Grossman and Helpman (1990; 1991) and others towards the end of 1980s, which led to an explosion in the search for growth determinants in the 1990s. What the models of the new growth theory have in common is that the long run growth rate of an economy is explained endogenously, besides demonstrating the inadequacies of Solow type model. The knowledge factor is no longer identified exclusively as input for economic processes, but equally as output of a learning process. The positive spillovers decisively influence the level of optimum capital accumulation. They are technological externalities, since they enlarge the production possibilities of others without market compensation. In learning by doing type endogenous

growth models, through spillovers public knowledge capital is formed (Romer), public services are increased (Barro), human capital grows (Lucas), and product and process innovations (Romer and Grossman and Helpman) which promotes growth in general. Now the marginal products of the factors accumulated under market conditions approximates a positive constant, and so does not approach zero as is assumed in the traditional theory. The industrial organization and macroeconomic contributions to the knowledge factor have become the main pillars of the new growth theory. Since the private marginal product and social marginal product of the disaggregated capital differ with positive spillovers, the economic growth in the presence of externalities is greater than the one which is reached under market conditions. Further growth enhancing externalities come from a host of policy perspectives, such as reforming trade, institutions, financial and capital markets, labour markets, competitiveness, and social capital.

Even after considering so many economic and non-economic factors from sociology, geography and technology, the search for growth determinants continues and the panacea of growth remains elusive (Levine and Renelt, 1992; Easterly, 2001; Aghion and Durlauf, 2011). This has led to an economists, Xavier Sala-i-Martin, to express "I just ran two million regressions", who analyzing sixty two variables as 'robust' variables that are found to be correlated with economic growth observed in many studies, resulting in nearly two million growth regressions, and identified twenty two variables to be strongly related to growth (Sala-i-Martin, 1997). Unsatisfied with the conventional explanations, recent economists turn look at the historical roots of development via history (Nunn, 2009), geography (Hibbs and Olsson, 2004), culture (Bisin and Verdier, 2001; Putterman and Weil, 2010), and even to genetics (Galor and Moav, 2002; Spolaore and Wacziarg, 2009; 2012). Such a search for the deep roots of development shows that the factors, especially the genetic diversity, determined many million years before caused by the prehistoric exodus of Homo sapiens out of Africa (origin place) through the great voyage (Ozak, 2010) or great expansion (Henn, Cavalli-Sforza and Feldman, 2012) to other parts of the world, have a significant effect on the course of economic development from the dawn of humankind to the contemporary era. In fact, high (Africa) or low (Native American) degree of genetic diversity has not helped development, but the intermediate levels of genetic diversity in Europe and Asia have helped development (Ashraf and Galor, 2013).

Development Economics

Empirically, many attempts have been made to examine the implications of neoclassical theory of growth, especially in the developing country context. The main implications of the Solow model are: (i) convergence – each economy converges to its own steady state and the speed of the convergence relates inversely to the distance from the steady state, as well as economies or regions with lower starting K/L ratio have higher per capita growth rates thereby catch up or converge with higher K/L ratios; (ii) it is government impediments to markets that prevent the economy from working smoothly – government failure. All one had to do is to ensure development was to transfer capital and remove government imposed distortions; (iii) The dynamics of the economy are mechanical – knowledge of fundamentals (resources, technology and preferences) and the initial conditions enables the precise prediction of the course of 'evolution' of the economy through market forces; the forces pulling toward equilibrium, and irrelevant are the – institutions, history and distribution of wealth. In cross-sectional empirical studies Solow model performs quite well; convergence is observed – conditional on the determinants of the steady state.

As the returns to capital is the driving force behind both growth and convergence, the Solow models also implies that capital would flow from rich to poor economies as poor countries lack capital and hence the returns to capital would be higher; and when returns to capital are equalized, so too GDP per capita. However, capital doe not flow to developing countries, as there is a shortage of complementary factors – skilled and educated labour, and poor economies of scale (aggregate, city, industry). Then the issue is that what could be done to increase the pace and efficiency of accumulation of capital in developing countries? The solution is not a narrow one of resource allocation. Or what are the miracle policies that could solve the problem of underdevelopment? The major early theoretical attempts include Arthur Lewis - unlimited supply of labour - Harvey Leibenstein - critical minimum effort doctrine - Edmond Nelson - low level equilibrium trap - Gustav Ranis and John Fei, Ragnar Nurkse - growth models of chronic bottleneck - Herbert Singer - balanced growth strategy - Albert Hirschman - unbalanced growth strategy, Rostow – stages of growth Rosentein-Roden - big push theory –all of which failed to solve problems and provide development strategies. And the policy solutions are state planning, import substitution, price control, aid (filling the gap between domestic saving and required investment), debt forgiveness, benevolence policies, which all again proved rather negatively. The list of proposed panaceas for growth by recent cross-country studies include high rates of physical-capital investments, rapid human-capital accumulation, low income inequality, low fertility, being located far from the equator, a low incident of tropical diseases, access to the sea, favorable weather patterns, hands-off governments, trade-policy openness, capital-market development, political freedom, economic freedom, ethnic homogeneity, British colonial origins, a common-law legal systems, the protection of property rights and the rule of law, good governance, political stability, infrastructure, market-determined prices (including exchange rate), foreign direct investment, and suitably conditioned foreign aid. This is a growing and non-exhaustive list" (Wacziarg, 2002).

Looking again deeply at the Solow model, in the case of multiple equilibria, there may be no forces for convergence; in fact, practically, unconditional divergence in per capita incomes is the case. Moreover, low capital is not a basis for low rates of return; Mankiw, Romer and Weil (1992) show that the correlation between growth rate and initial level of GDP is only small (0.094) and investment per capita and income per capita correlation is about 0.60. Neither rates of return nor investment rates are higher in poor economies - return to capital (interest rate) is 52% in India (9% in USA), marginal product of capital is 22-60%, marginal product of human capital is 8.96%, marginal product of health capital is 500% and mean investment rate is14.5% (only 4% in Asia) in developing countries (Hoff and Stiglitz, 2001; Banerjee and Duflo, 2005). But, investment does not respond to rates of return in poor economies. Is the puzzle of lack of catching up due to technological backwardness of poor? No, many firms use modern technology (while others use obsolete modes of production).

In modern economic growth, market failures are pervasive, and the dynamics of the economy are not mechanical. Modern economic development is influenced more by biological than physical models. It focuses more on evolutionary processes, complex systems, and chance events that may cause systems to divergence. The institutions, history and distribution of wealth are basic influences on the neoclassical fundamentals. Hence the 'deep' fundamentals of neoclassical theory are themselves endogenous, affected by social and economic environment. The recent quest for growth has identified the structure and

policy features of economies as the factors that facilitate the link between growth and innovation, technological progress and factor accumulation (Hall and Jones, 1999; Easterly, 2001). The structural features - probably exogenous – include geography (Sachs), country size (Ades and Glaeser), ethnic fractionalization (Easterly and Levine), political instability (Alesina), institutions (Acemoglu, Robinson and Johnson), income inequality, democratic institutions (Rodrik), corruption level, etc. The policy or governance features include black market, large share of government spending in GDP, fiscal deficit and public debt, inflation, protectionist trade policies (all have negative impact) and complementarities in industrialization – urban agglomeration and industrial clusters, rural credits, labour markets, saving rates, political constraints, inseparability among distributional institutions and efficiency, all are not gravitated through market forces, and involve transaction costs in which market is inadequate. The transactions cost depends on institutions, institutions are endogenous. Distribution of wealth affects economic efficiency, market decisions of individuals and hence macro variables, and contracts, incentives and intergenerational wealth distribution. History influences a society's technology, skill base and institutions, outcomes by affects beliefs, exposure to culture which shapes preferences. Thus, the proximate causes of growth may be accumulation (of various forms of capital) and technological change (measured by total factor productivity growth) and the fundamental causes are structures (institutions, geography, demography, etc) and policies that facilitate or hinder accumulation and technological change.

For effective economic development markets are central, and in developing efficient markets, institutions play an important role in how markets affect standards of living and help protect their rights. Institutions are the rules and organizations, including informal norms that coordinate human behaviour. The World Development Report 2002 identifies how institutions can provide inclusive and integrated markets, and ensure stable growth and thus improve incomes and reduce poverty. Effective institutions can make the difference in the success of market reforms. And weak institutions hurt the poor especially, and deny access to them for many market activities. Strong institutions provide opportunities for people and empower them. For sustainable development in a dynamic world institutions need to be improved at many levels – from the local and global – to promote growth in ways that protect environmental and social assets, strengthening the foundations for better institutions requires overcoming the inequitable access to assets and the pervasive barriers to inclusion (World Bank, 2002).

The great lesson of the 20th century is that successful development requires markets underpinned by solid public institutions (Rodrik, 2001). These institutions are that protect rights, regulate market participants, maintain macroeconomic stability, provide social insurance, and manage conflict. According to the augmented Washington consensus, liberalization, privatization, and global integration are no less important, but they need to be supplemented and supported by reforms in governance - structural reforms in business-government relations, corporate governance, bankruptcy laws, labour market institutions, and industrial policy; a set of codes and standards for the new international financial architecture - fiscal transparency, monetary and financial policy, banking supervision, data dissemination, corporate governance and structure, and accounting standards; global trade negotiations - subsidies, intellectual property rights, and investment-related measures; all reforms that harmonize practices in developing countries with those in the more advanced countries.

Development Policy

The almost two-decades old cross-country growth comparisons has given the learning to decisively reject misguided policies that have, at some point or another in the post-second world war II history of development thinking, been viewed as ideal solution to the problem of development: state planning, price controls, import substitution, aid directed at filling the so-called "financing gap" between domestic savings and "required" investment, debt forgiveness, policies that assumed benevolence on the part of developing countries' policymakers, which all ignored the social and political systems under which the developing countries' economic policies operate. It is therefore important to understand in what contexts market-based systems work – especially on the historical and cultural environment (Rodrik, 2004). A lot depends on the structural features of the economy and policies of the state. But, whether we can influence policy and in a market economy government interventions promote good outcomes?

There are evidences that government interventions can and in fact do affect market outcomes by influencing individual beliefs and the flow of information through affirmative action and anticorruption programs, enactment of social norms into law and temporary wage floor that solves the coordination problem, provide information and affect dynamics of political process, and change the distribution of wealth. A myriad of activities that are central to development process – innovation, honesty in trade, investment, labor training, saving, spillovers, localized knowledge - can create externalities. These externalities are mediated by change in beliefs and information - affecting the level of technology of individual agent, markets that exists and the rewards to activities. Thus, government policies can break path dependency – free of history. If so, what can be done through policy interventions in developing countries? The World Bank's initiatives in terms of creating Investment Climate (Stern, 2003) and Doing Business Reforms (Djankov, 2005) are appealing here. Structural reforms of liberalization and macroeconomic stabilization (the structural adjustments policies of early 1990s), institution building (regulatory structures of late 1990s) and recent microeconomic restructuring (of enterprises) remove the barriers to competition, as well as provide incentives to innovate and the policy perspectives for business. Not only policies, but also bureaucratic attitudes, implementation of policies, need to bridge the gap between policy and its implementation. To build good investment climate governments have to navigate four challenges: restraining rent-seeking, establishing credibility, fostering public trust and legitimacy, and ensuring policy response to fit local conditions.

The business in poor countries face three times the administrative costs, and twice as many bureaucratic procedures and delays than in rich countries, heavy regulation and weak property rights exclude the poor and weaker sections (low skilled) from doing business. Accordingly, there have been many business reforms initiated to ease business environment and provide investment climate; starting a business, hiring and firing workers, registering property, getting credit, protecting investors, enforcing contracts, closing a business, dealing with licenses, trade logistics and corporate taxation (comprising 24 indicators). The gains from such business reforms include 56 percent reduction in costs of starting a business, 26 percent reduction in procedures, 8 percent reduction in minimum capital, and easier to start a business in 35 countries. Easing of doing business (reforms) is associated with up to two percentage points (1.4-2.2 per cent) more annual economic growth.

The lesson of the development experience of the last few decades has been that both the market and the state are complements to each other in economic development. The market needs the state to provide the institutional environments for effective functioning and the state needs the market for efficient resource allocation. The state has to provide the investment climate and the regulatory institutions. For effective economic development markets are central, and in developing efficient markets, institutions play an important role in how markets affect standards of living and help protect their rights. At the market level, understanding of the institutional setup under which an economy functions is crucial for economic reforms: Developing country institutions are of two types - formal institutions such as property rights, contract enforcement - reduce uncertainty and lower the costs of transactions, provide for disclosure of information (Williamson, 1985; North, 1990); and informal institutions – social capital – norms, trust, reputations, sanctions, networks, civic actions (Coleman, 1990; Putnam, 2000). Social capital in the form of personal relations and social networks increase the efficiency of social exchange in the provision of public goods as well as minimize transactions cost in the formal sector. Hence, the priority is to develop and strengthen the market-supporting institutions for an effective mixed economy with private (market) and public institutions. A market economy relies on a wide range of non-market institutions that perform regulatory, stabilizing, and legitimizing functions. Once these institutions are accepted as part and parcel of a market-based economy, every well-functioning economy is a mix of state and the market, laissez-faire and regulation. In the case both market and government failures, the community arrangements to facilitate transactions become operative. In essence, development can not be sensibly understood simply in terms of growth of aggregates such as income per capita. Development is about fundamental change in economic and social structures as well as the policy and bureaucratic approaches.

Conclusion

The basic search by economists is on what constitutes the exact 'economics' of growth? The search for the sources of economic growth and therefore the miracle policies that could solve the problem of underdevelopment has resulted in a substantial body of literature. Still the quest for growth determinant is elusive to economists. However, the half a century old search, with various experiments in theory and policy, has yielded some lessons for understanding the 'economics' of growth. Some of the outcomes may be summarized as follows:

What We Now Know:

- To reject misguided policies that have at some point or another in post war history of development thinking been viewed as ideal solution to the problem of development.
- A host of non-fundamentals affect growth – geography, ethnicity, beliefs, information, institutions, culture, and even genetics.
- Development is possible, but not inevitable.
- More capital may be helpful, but not much impact.
- Eliminating government imposed distortions is desirable, but neither necessary nor sufficient.
- There is no sure formula for success – some strategies seem to work for a while.
- We are beginning to see "the contours of a new vision, both more rooted in evidence and more ambitious in its theorizing".

- Perhaps it is better to understand the micro distortions that affect macro behaviour.
- Move away from the aggregate approach to non-aggregative approach – to explain why individuals do not always make the best possible use of resources available to them.

What We Still Do Not Know: "What Causes Growth".

- All the so called development models offer only explanations for the lack of growth.
- None of the models could neither identify the factor nor offer any miracle policy as panacea for growth.
- In effect, "we are at least at the stage at which we know that we do not know".
- Perhaps there could be some 'ultimate' economic or a 'fundamental source', a panacea waiting to be identified, of economic growth.
- Probably an interdisciplinary approach may identify the hidden growth factor.
- Possibly enriching the neoclassical theory may look for some hope for both theoretical and policy formulations.

References

1. Aghion, P. and P. Howitt (1998) *Endogenous Growth Theory*, Cambridge, Mass.: MIT Press.
2. Aghion, P. and S. N. Durlauf (2011) (Eds.) *Handbook of Economic Growth*, Amsterdam: North Holland.
3. Acemoglu, D., S. Johnson and J. Robinson (2001) "The Colonial Origins of Comparative Development: An Empirical Investigation", *American Economic Review*, 91, 1369-1401.
4. Arrow, K.J. (1962) "The Economic Implications of Learning by Doing", *Review of Economic Studies*, 29, 155-173.
5. Ashraf, Q. and O. Galor (2013) "The Out-of-Africa Hypothesis, Human Genetic Diversity, and Comparative Economic Development", *American Economic Review*, 103, 1-46.
6. Banerjee, A.V. and E. Duflo (2005) "Growth Theory Through the Lens of Development Economics", in P. Aghion and S. Durlauf (eds.): *Handbook of Economic Growth*, *Volume 1A*, Amsterdam: Elsevier Science Ltd.-North Holland, 473-552.
7. Barro, R.J. (1990) "Government Spending in a Simple Model of Endogenous Growth", *Journal of Political Economy*, 98, S103-S125.
8. Barro, R.J. (1991) "Economic Growth in a Cross Section of Countries", *Quarterly Journal of Economics*, 106, 407-443.
9. Barro, R.J. and X. Salai-i-Martin (1995) *Economic Growth*, New York: McGraw Hill.
10. Bisin, A. and T. Verdier (2001) "The Economics of Cultural Transmission and the Evolution of Preferences", *Journal of Economic Theory*, 97, 298-319.
11. Coleman, J.S. (1990) *Foundations of Social Theory*, Cambridge, MA: Harvard University Press.
12. Deaton, A. (2010) "Understanding the Mechanisms of Economic Development", *Journal of Economic Perspectives*, 24, 3-16.
13. Djankov, S. (2005) *Doing Business in 2005: Removing Obstacles to Growth*, Washington, D.C.: World Bank.
14. Durlauf, S.N. (2002) "On the Empirics of Social Capital", *Economic Journal*, 112, F459-F479.
15. Durlauf, S.N. and D.T. Quah (1999) "The New Empirics of Economic Growth", in J.B. Taylor and M. Woodford (eds.): *Handbook of Macroeconomics*, Vol.1A, Amsterdam: North Holland, 235-308.
16. Easterly, W. and R. Levine (1997) "Africa's Growth Tragedy: Policies and Ethnic Divisions", *Quarterly Journal of Economics*, 112, 1203-1250.
17. Easterly, W. (2001) *The Elusive Quest for Growth*, Cambridge, Mass.: MIT Press.
18. Galor, O. and O. Moav (2002) "Natural Selection and the Origin of Economic Growth", *Quarterly Journal of Economics*, 117, 1133-1191.
19. Granovetter, M. (1985) "Economic Action and Social Structure: The Problem of Embeddedness", *American Journal of Sociology*, 91, 481-510.
20. Grossman, G. and E. Helpman (1990) "Comparative Advantage and Long-run Growth", *American Economic Review*, 80, 796-815.
21. Grossman, G. and E. Helpman (1991) *Innovation and Growth in the Global Economy*, Cambridge, Mass.: MIT Press.

22. Hall, R.E. and C.I. Jones (1999) "Why Do Some Countries Produce So Much More Output per Worker than Others?", *Quarterly Journal of Economics*, 114, 83-116.
23. Henn, B.M., L.L. Cavalli-Sforza and M. W. Feldman (2012) "The Great Human Expansion", *Proceedings of the National Academy of Sciences*, 109, 17758-17764.
24. Hibbs, D.A. and O. Olsson (2004) "Geography, Biogeography, and Why Some Countries Are Rich and Others Are Poor", *Proceedings of the National Academy of Sciences of the United States*, 101, 3715-3720.
25. Hoff, K. and J.E. Stiglitz (2001) "Modern Economic Theory and Development", in G. Meier and J.E. Stiglitz (eds.): *Frontiers of Development Economics*, New York: Oxford University Press, 389-459.
26. Jones, C. (1995) "R&D-based Models of Economic Growth", *Journal of Political Economy*, 103, 759-784.
27. Levine, R. and D. Renelt (1992) "A Sensitivity Analysis of Cross-country Growth Regressions", *American Economic Review*, 82, 942-963.
28. Lucas, R.E. Jr. (1988) "On the Mechanics of Economic Development", *Journal of Monetary Economics*, 22, 3-42.
29. Mankiew, G., D. Romer and D. Weil (1992) "A Contribution to the Empirics of Economic Growth", *Quarterly Journal of Economics*, 107, 407-437.
30. North, D.C. (1990) *Institutions, Institutional Change and Economic Performance*, Cambridge, MA.: Cambridge University Press.
31. Nunn, N. (2009) "The Importance of History for Economic Development", *Annual Review of Economics*, 1, 65-92.
32. Ozak, O. (2010) "The Voyage of Homo-oeconomicus: Some Economic Measures of Distance", mimeo, Department of Economics, Brown University
33. Putnam, R.D. (2000) *Bowling Alone: The Collapse and Revival of American Community*, New York: Simon and Schrster.
34. Putterman, L. and D.N. Weil (2010) "Post-1500 Population Flows and the Long-Run Determinants of Economic Growth and Inequality", *Quarterly Journal of Economics*, 125, 1627-1682.
35. Quah, D. (1997) "Empirics for Growth and Distribution: Stratification, Polarization, and Convergence Clubs", *Journal of Economic Growth*, 2, 27-59.
36. Ramsay, F.P. (1928) "A Mathematical Theory of Saving", *Economic Journal*, 38, 543-559.
37. Rodrik, D. (2001) "Development Strategies for the 21st Century", in B. Pleskovic and N. Stern (eds.): *Annual World Bank Conference on Development Economics, 2000*, Washington, D.C.: World Bank, 85-108.
38. Rodrik, D. (2004) "Growth Strategies", in P. Aghion and S. Durlauf (2004) (Eds.), *Handbook of Economic Growth*, Amsterdam: Elseiver, North Holland.
39. Romer, P.M. (1986) "Increasing Returns and Long-run Growth", *Journal of Political Economy*, 94, 1002-1037.
40. Sala-i-Martin, X. (1997) "I Just Ran Two Million Regressions", *American Economic Review*, 87, 178-183.
41. Schumpeter, J.A. (1934) *The Theory of Economic Development*, Cambridge, Mass.: Harvard University Press.
42. Sheshinski, E. (1967) "Optimal Accumulation with Learning by Doing", in K. Shell (ed.): *Essays on the Theory of Optimal Economic Growth*, Cambridge, Mass.: MIT Press.
43. Spolaore, S. and R. Wacziarg (2009) "The Diffusion of Development", *Quarterly Journal of Economics*, 124, 469-529.
44. Spolaore, S. and R. Wacziarg (2012) "How Deep are the Roots of Economic Development?", NBER Working Paper No. 18130.
45. Solow, R.M. (1956) "A Contribution to the Theory of Economic Growth", *Quarterly Journal of Economics*, 70, 65-94.
46. Stern, N.(2002) "A Strategy for Development", Keynote address for the Annual World Bank Conference on Development Economics,2001/2002, *Annual World Bank Conference on Development Economics*, 11-35.
47. Stern, N. (2003) "Opportunities for India in a Changing World", Keynote address for the Annual World Bank Conference on Development Economics, Bangalore, May 21-23,2003.
48. Wacziarg, R. (2002) "Review of Easterly's *The Elusive Quest for Growth*", *Journal of Economic Literature*, XL, 907-918.
49. Williamson, O.E. (1985) *The Economic Institutions of Capitalism: Firms, Markets and Relational Contracting*, London: Macmillan.
50. World Bank (2002) *World Development Report, 2002*, Washington, D.C. World Bank.