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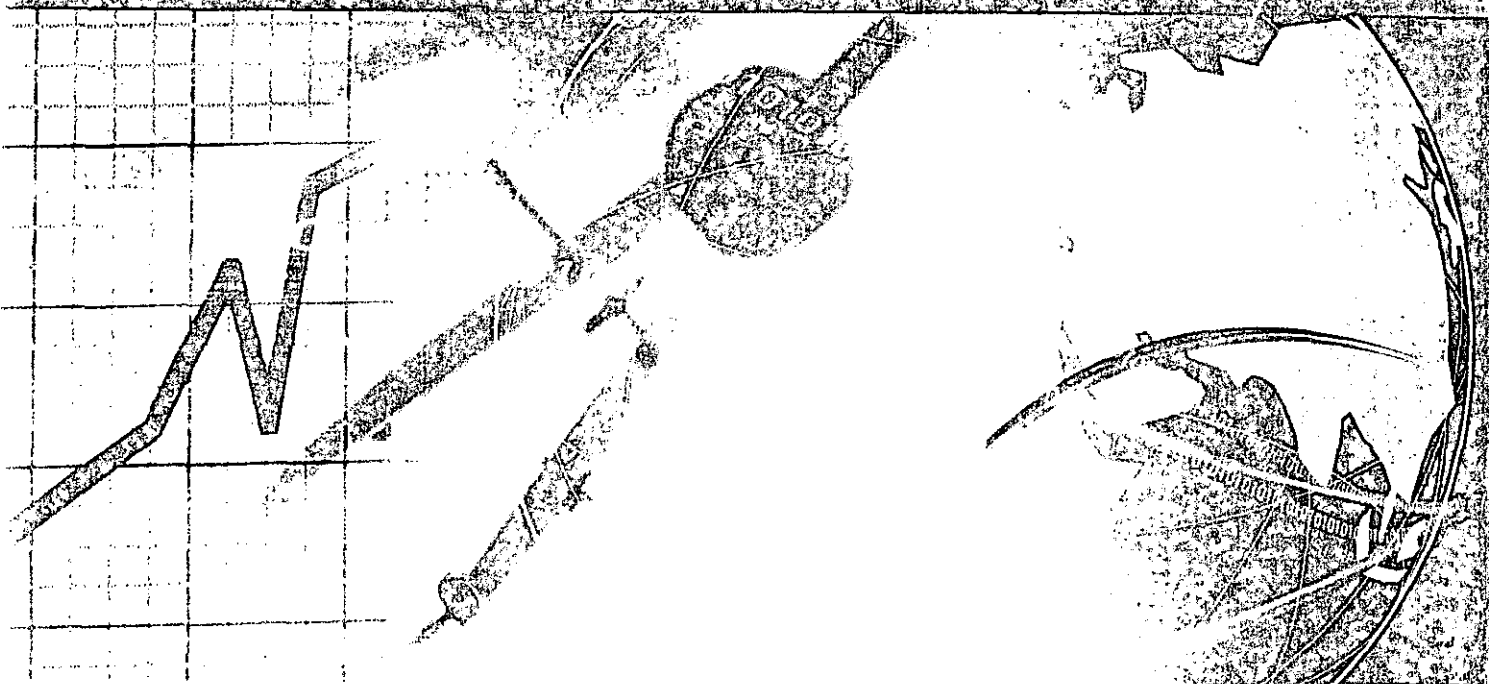
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a review of contending development
policy advisory directions



UNITED NATIONS
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Industry in growth and development: a review of contending development policy advisory directions

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Industry in Growth and Development: A Review of Contending Development Policy Advisory Directions

Abstract

This paper attempts to draw out, from the voluminous material available on economic growth in its relation to industry and development, the cogent factors and variables, which can serve as a basis for policy-making. It takes a global, macro- and micro-level view, cognisant of the nested nature of factors and variables and their articulation in policies. Formally, there seem to be some basic, limited in number, factors and variables that should be taken into consideration for policy craft. Ultimately, how specific policy advisory directions, in a particular country, are designed and implemented -- and changed in time and space according to circumstances -- appear to depend on 'deep determinants' of development that have their provenance in the geo-topographical, demographic, resource endowment, and institutional dynamics (political, social and cultural history) of the country and its people.

Key words: Economic development policies, empirical variables, path dependency, and conditioning factors

Introduction

The purpose of this paper is to use a literature review to raise a number of issues, in broad terms, concerning the development policy advisory directions (and their factors and variables) available in the public domain with respect to industry and growth. This is attempted with a view to indicating tentatively the 'state-of-art' policies and for stimulating discussion. Clearly, given the multi-disciplinary and increasingly emergent¹ nature of economic systems and therefore policy relevant to the economics of industry and growth and development [Arthur, Durlauf and Lane (1997)], the task is enormous. It is therefore important to indicate from the outset the delimitations and approach taken that is germane to such a paper.

Development policy advisory directions are embedded in the results of policy analysis -- itself the outcome of various kinds of economic research, in the broadest sense of the term. Necessarily, the approach taken herein has the form of a literature review (bearing in mind the vast amount of published material available).² It reports findings with a view to their policy implications and refrains, as far as is possible, from comparisons of theoretical positions. It avoids value judgements, notwithstanding the reality that, when all is said and done, development and the policies that may or may not engender it are about normative economics. It is not possible therefore to cover everything in the literature of industrial growth and socio-economic development and poverty reduction³ from the antecedents to, and from, the first development decade. Yet, despite the constrained 'policy space' available to developing countries, it is worth noting that there are policy lessons and prescriptions from the early days of development thinking that may still be valid [Bernstein (1973); Spero (1977); George (1988); Jones (2002)].

Given the multi-disciplinary nature of the subject matter, the sources of empirical literature are unavoidably eclectic. The delimitations are therefore somewhat difficult to define precisely. However, the traditional sources of recent vintage from the development community and key research institutes are very much evident.⁴ This review focuses on economic literature.

¹ In the sense of emergence of complexity in economic systems as non-linear processes [Crutchfield (1994); Durlauf (1998); Kwasnicki (1996); Krugman (1996a, 1996b)].

² For example, from the United Nations agencies, Think-tanks and NGOs, in the form of thematic reports; country-specific reports; and specific development, industry and growth research papers.

³ Without making inherent value judgments, these terms could be considered somewhat tautological.

⁴ World Bank, IMF, UN and, for example, National Bureau of Economic Research (NBER), Centre for Economic Policy Research (CEPR) and Oxford Institute for Economic Policy (OXONIA) and, inter alia, Centre for International Development at Harvard University, Brookings Institution, A. T. Kearney and McKinsey and Company.

This literature review, for policy advisory directions, is cognisant of the different but nested levels, not only of the various policy analyses but also of the resulting advice --ranging as they do from the macro- to micro- and firm-level at which, for instance, the direct employment effects are manifest; and from the academically and technically complex⁵ to the seemingly superficial.⁶ The nested characteristics render the boundaries of empirical literature and policy imprecise. It goes without saying that the different levels of policy advisory interact, and macro-level policy instruments affect micro-level activity; and micro-level instruments can have effects at the macro-level.

The challenges of the review and delimits present several important aspects -- vital to the debate on economic growth regarding which policy advice and associated instruments are best; under which defined circumstances; and when to switch between the different types of policy instruments? These are first, the accessibility of policy advisory to policy makers in developing countries (DCs), least developed countries (LDCs) and transition economies (TEs).⁷ Secondly, the actionability of policy levers by DCs. Thirdly, the transferability of policy lessons learned under differing circumstances in different countries. Fourthly, timeliness [Redding (2005); Devezas and Modelski (2003)] as different policies and policy levers are coupled with lags and therefore take different amounts of time to work.⁸ Fifthly, the path dependency of development. The fact of the matter is that policy advice directed to the assisted country and its policy makers, invariably takes place within an evolutionary context that is partly the outcome of path dependence. Sequencing therefore matters and outcomes from "particular courses of action, once introduced, can be virtually impossible to reverse." [Pierson (2000, p. 251)] There is also the issue of the receptive environment in the assisted country being sensitive to initial conditions such that, in comparison with others, "minor initial changes have enormous implications." [Page (2006, p. 91)] Policy advice, therefore, has to deal with the related causes of path dependency, namely, increasing returns, self-reinforcement, positive feedback and lock-in.

⁵ For example, from the NBER programmes which currently include: economic fluctuations and growth, industrial organization, monetary economics, productivity, and public economics.

⁶ There are from the Donor community and others in the development community increasing calls for developing countries to adopt 'prudent macroeconomic policies', 'good policies' and 'good institutions' [Chang (2005a)].

⁷ For brevity the term developing countries (DCs) will be used throughout to designate the non-industrialised countries as per the UNIDO International Yearbook of Industrial Statistics 2007.

⁸ Partly due to cyclical behaviour in socio-economic development processes such as the Kitchin, Juglar, Kuznets and Kondratiev cycles (waves). In the really long view of development there are even longer cycles [Kwasnicki (2000)].

In spite of such challenges, the continued growth of the ‘Development Business’⁹ and the increasing volume of policy analysis material,¹⁰ it is possible to demarcate various policy advisory directions which are empirically significant. However, it is imperative to signal notes of caution with respect to the national crucibles into which contending policy advisory directions may be placed. These notes of caution, reflective of the challenges of wrestling policy from the literature and applying it, are encapsulated by the following quotes:

“It is senseless to launch an economic development programme in a country which lacks political stability and does not have a government that sticks to that programme in the knowledge that, one day, it will be recognized and rewarded by the voters”.

[Albert Winsemius in Tamboer K., 1996, Albert Winsemius: ‘Founding Father’ of Singapore, International Institute for Asian Studies (IIAS), IIASN-9, Summer]

“More than money is required to give a less-developed country a firm start. Also required are certain conditions in the aided nation. These include careful planning and clearly defined goals, a strong commitment of local resources to the pursuit of these goals, determination by the government and people alike to get on with the job and, most important of all, a concurrent commitment to the promotion of social justice. Given these conditions, the possibility of external assistance contributing successfully to economic and social development is good; without them it is non-existent.”

[UNESCO Final Report - Conference of African Ministers of Education, Addis Ababa, 15-25/5/1961, p. 19, para. 33].

The quotes above contain conceivably the most invaluable of all policy advice. Since the onset of the concept of “Development Decades” (1960s onwards)¹¹ the dimensions of policy advisory direction and policy development in general, and policy for industrial development in particular, to DCs, have been changing. The volume of policy analysis has greatly expanded, as has the

⁹ According to the Economist, 31 July 1999, a survey of the new geopolitics, there were 62 states in 1914, 74 in 1946, 149 in 1978 and 193 in 1999, and most of them are relatively poor in per capita GDP terms.

¹⁰ As an illustration of just one of the multi-disciplines in economic research -- productivity related -- a mere 40 or 50 core papers yields a body of some 2,500 references. Key word searches (growth development) yields 12,500 documents from the Brookings Institution and over 2,000 papers from McKinsey and Company.

¹¹ Four Development Decades (1960-2000) and two Industrial Development Decades for Africa (1980-2000) have been designated by the UN (http://www.nalis.gov.tt/National-UN-Days/UN_INTERNATIONAL).

number and variety of organisations (and institutions) offering differing qualities of policy advisory services for development.¹² In sharp contrast to these changes, it is arguable that the ‘policy space’ -- broadly speaking, the freedom at hand for generating policy options, and to set economic policies and calibrate them in the national interest -- is increasingly restricted [Levitt (2006); Hamwey (2005); Ayala and Gallagher (2005); Hockman (2004); Chang (2002)].

In relation to the diminishing degrees of national freedom to set policy options, Harris-White (2005, p. 1) thought-provokingly throws down a gauntlet to the policy community. Accordingly, she states that “while it may be possible to mitigate poverty through social transfers, it is not possible to eradicate the processes that create poverty under capitalism i) the creation of pre-conditions; ii) petty commodity production and trade; iii) technological change and unemployment; iv) (petty) commodification; v) harmful commodities and waste; vi) pauperising crisis; vii) climate-change-related pauperisation; and viii) the un-required and/or incapacitated and/or dependent human body under capitalism.”

The increasingly restricted policy space¹³ is crucial when considering policy advisory directions because the restriction is occurring at a time of burgeoning policy analysis and, generally, in an increasingly interdependent world denoted by almost diametrically opposing views on globalisation¹⁴ [Schaefer (2006); Das (2005); Stiglitz (2002); Dollar and Kraay (2001)]. The broad implications of more advisory organisations, more analyses, and less policy space, point in the direction of having to continuously rethink about industry and growth policies and development strategies [Rodrik (2004)] -- hardly a simple task. And yet continuously great effort is put into this thinking and rethinking; not only because of the “bewildering and indecisive literature” [Sheffrin and Triest (1995, p. 1)] but also because the accessibility, actionability and

¹² In addition to the traditional sources for policy advice, manifest as the development community of the multi-lateral agencies of the UN system, other organisations include NGOs, Think-tanks, specialised university centres of excellence, as well as the large accounting firms and, in some cases, private military companies (PMCs). One such PMC group is the Control Risks Group, which offers “Governance and Development” services. These range from “Stabilisation Programme Design and Implementation”, “Investor Assessment and Advice”, and “Training and Awareness Programmes” - all of which involve policy advisory directions to some extent (<http://www.crg.com>). Worldpress.org lists over 300 organisations in the category Think-tanks and NGOs for example; and according to Adam Lerrick, Professor of Economics at Carnegie Mellon University, “Good intentions at the expense of the poor”, *Financial Times*, 2/August/2006, p. 11, “There are now 40,000 NGOs; 3,000 have consultative status at the United Nations, triple the 1995 number.”

¹³ It is arguable that the severe difficulties in the progress of the DOHA Round of Trade Negotiations of the WTO is partly a consequence of perceptions of increasingly restricted policy space and its national (domestic) ramifications [The Economist, 29 July 2006, *The future of Globalization* p. 11; special report - World Trade in the Twilight of DOHA, pp.65-66].

¹⁴ For example, Globalisationguide.org indicates 17 ‘pro-globalisation’ policy-related Think-tanks and institutes; and 18 that are ‘anti-globalization’, and a further 24 academic resources on globalization. See also *Alternatives to Economic Globalization, A Report of The International Forum on Globalization, 2002*, San Francisco: Berrett-Koehler Publishers.

transferability, referred to earlier, seem so remote from policy makers -- and not just in DCs.¹⁵ It is pertinent here to emphasise that the indecisive literature¹⁶ continues to be so and is a source of contention between policy advisory directions. Regardless of shortcomings in operations of methodology, data inadequacies and the differing assumptions that have to be made in economic modelling and policy analysis, different analyses come to conclusions with varying degrees of concurrence.¹⁷

The rest of the paper is organised as follows: Part 2, which provides a global overview, invites reflection, by looking at a few significant maps, on the persistent patterns of development. Part 3 presents a macro-level view of some of the enabling conditions, factors and variables within which policy advisory directions may be provided. This is done bearing in mind the close relationship between the enabling conditions [Chollet and Goldgeier (2005-06); Hamre and Sullivan (2002)], factors, variables and the policies themselves.¹⁸ Part 4 focuses on the micro-level and brings to light some of the issues which point to policy advisory directions with respect to some aspects of competitiveness and management. Part 5 concludes.

2. Persistent Patterns in Industrial Growth

It appears that, perhaps irrespective of policy action, patterns of countries' industrial growth and development have long-term concentrated and spatially structured characteristics, which change relatively slowly [Venables (2006); Sachs (2001)]. Evidence indicates that the direction of change,

¹⁵ As recently as March 2006, the IMF dedicated its volume 43, issue No. 1 of Finance and Development to understanding growth, and various aspects of rethinking growth including: growth diagnostics and analysis; directions for research and policy-making; barriers to growth; policy levers; and, especially growth acceleration with respect to Africa, which arguably has experience dis-development since the 'Lost Decades' of the 1980s and 1990s [Easterly (2001); Elliot (2003)].

¹⁶ From an academic perspective, this is to be expected as different schools of thought contend.

¹⁷ For example, the conclusion of Rodrik et al. (2002) that institutions are paramount for growth implies that, while the Sachs (2001) geography argument for tropical underdevelopment is cogent along with the O'Rourke (2001) view that globalisation (increasing economic integration and trade) has assisted convergence between countries in the late nineteenth and twentieth Centuries, it is ultimately the quality of decision-making within good 'rules-of-the-game' that account for industrial growth and development.

¹⁸ There is the issue of causality between these factors (which can be seen as capabilities), variables, policies and effects, which can be intractable unless tested for under rigorous assumptions and conditions [Granger (1969)]. See, for example, Oxley and Greasley (1998, p. 1387) who test for the causes of the British Industrial Revolution and find, perhaps surprisingly, that "to the extent that the first industrial revolution offers a template, exports appear not to provide a simple pathway to industrialization."; Sheffrin and Triest (1995) who test for causality among initial development level, human capital, growth, investment in equipment, non-equipment investment, openness, and political stability; Bose and Haque (2005, p. 95) who find that "using both informal and formal causality tests for a set of developing countries the strong association is the result of the effect running from growth to public investment rather than vice versa".

in terms of economic convergence, actually points to widening differentials¹⁹ *between* the industrialised countries (ICs) and developing (non-industrialised) countries (DCs),²⁰ and *within* countries where spatial inequalities have been growing.²¹ Kiliçaslan and Taymaz (2006, p. 1) using UNIDO's industrial statistics database, find that the industrial structures of ICs and DCs "change over time, but they do not converge, i.e., the "polarized" structure in the world economy is persistent in spite of all change in industrial structure". This may actually not be surprising when one looks at various 'economic' maps that depict the world. In terms and visuals that reflect industry and growth, one observes this persistent pattern of a centre (of industrial development) and a periphery (of relative underdevelopment) repeated over and over again.²² Irrespective of the level of the unit of analysis, nation-states or world system,²³ the centre comprises ICs and the periphery DCs.

Sachs (2001) finds the same persistence in that, considering the centre as climatically temperate, and the periphery as non-temperate, whereas temperate regions have increased their GDP per capita (1990 international dollars) by around 13 times, non-temperate regions' increase is only some five times over the 1820-1992 period. Gallup and Sachs (1999) point to the persistent pattern through factors of economic geography indicating that 70 per cent of cross-country variation in per capita income is down to health (malaria), oil and gas endowments, coastal access and transport costs. More importantly, anticipating Kiliçaslan and Taymaz (2006), the ratio of non-temperate to temperate GDP per capita has dropped from 0.68 to 0.25 respectively. When the centre-periphery view is interpreted in terms of the dynamics of international trade the persistent pattern again emerges albeit with a distinct regional orientation [Krempel and Plümper (2003)].

¹⁹ From an economic geography perspective, this should not come as a surprise, as proximity is conducive to productivity not only because of reduced transaction costs but also due to knowledge spillover efficiencies in product and labour markets. See, for example, Rosenthal and Strange (2004).

²⁰ Defined according to UNIDO 2007 International Yearbook of Industrial Statistics.

²¹ For example, as a consequence of policy, the Maquilladora of the Mexico-United States border region in comparison with the rest of Mexico; the Southeast coastal China special economic zones in contrast with the Western *hinterland*; and even in the European Union, which has the special programme -- *Europe of the Regions* -- to address spatial inequalities.

²² Such depictions, *inter alia*, are, for example, the artificial night sky brightness (Light Pollution Science and Technology Institute); the technology map of the world (J. Sachs, Technology Divide, *The Economist*, 22/June/2000); Global Optical Fibre Submarine Systems (Alcatel); and the Digital Access Index (International Telecommunications Union). Several other illustrations of this persistence of economic development patterns are provided by the Centre for Advanced Spatial Analysis, University College, London.

²³ See Giovanni Arrighi, 2000, *Globalization and Historical Macrosociology*, in Janet Abu-Lughod, Ed., *Sociology for the Twenty-First Century: Continuities and Cutting Edges*, Chicago: Chicago University Press, pp. 117-133.

UNCTAD's World Investment Reports (1991-2005) disclose a series of maps of investment and industrial production showing the distribution of global economic activity as a function of foreign direct investment (FDI). Despite increasing, but asymmetric, FDI flows to DCs since 1980,²⁴ the same persistent pattern of industrial development emerges with high intensities at the centre and lower intensities at the periphery.

This overarching pattern raises a number of interrelated questions (which are as old as the hills) concerning the reasons why, despite the evidence [Lynch (2003)] of long-waves of techno-economic development (Kondratiev waves), according to Földvari and van Zanden (2006, p. 25) "the share of countries converging is not growing consistently in time, in particular because after 1973 many countries seem to leave the convergence club".²⁵ Despite the public domain availability of policy advisory, why has global inequality continued to grow and, in spite of globalisation, why is the 'North'-'South' divide persistent? Sachs (2001) concludes (and thus points to a first set of policy advisory directions) that the complexly interlinked causes are: relatively high difficulties in mobilising energy resources in non-temperate regions (the 'South' which is comparatively underdeveloped vis-à-vis the 'North'); poor public health systems;²⁶ weak agriculture; and the slow "demographic transition from high fertility and mortality rates to low fertility and mortality rates"(op. cit. Abstract).

At a broader level, with respect to the post-industrial revolution patterns mentioned above, given the influence of path dependency [David (2001)], it appears -- again pointing to policy advisory directions -- that: history and the natural environment (from a comparative advantage perspective) matter; as do the quality of political institutions and decision-making (how the 'rules-of-the-games' are devised, agreed, acted upon and contested) in society; as well as social capacities and technological capabilities. History (retroactively is not amenable to policy),²⁷ and the natural environment may not be so readily amenable to the application of policy

²⁴ See UNIDO, 2003, Guidelines for Investment Promotion Agencies: Foreign Direct Investment to Developing Countries, Vienna: UNIDO.

²⁵ See MIMEO, "Global income distribution and convergence 1800-2000", Peter Földvari (Warwick University) and Jan Luiten van Zanden (IISH/Utrecht University), 2006, p. 25. An important qualification to this is that while countries may be diverging in growth terms, "The share of the world population converging is growing over time, and has continued to increase after 1973" (op. cit. p. 25). However, since 1820, overall global inequality has increased (op. cit. p. 15).

²⁶ The positive link between population healthiness and economic advancement is the subject of the March 2004, Vol. 44, No. 1 of Finance and Development (IMF).

²⁷ See Chang Ha-Joon, 2002, Kicking Away the Ladder: How the Economic and Intellectual Histories of Capitalism Have Been Re-Written to Justify Neo-Liberal Capitalism, Post-autistic Economic Review, Issue No. 15, 4/September/2002, Article 3, for a provocative analysis of the policy options available to developing countries in historical context.

instruments.²⁸ However, the social capital, governance, socio-technological absorptive capacities, and institutional capabilities of DCs are certainly amenable to policies and policy instruments.

Other pointers to policy advisory directions emerge from Fagerberg and Srholec (2005) who conclude, from a factor analysis of 29 socio-economic and technological variables for 135 countries over 1992-2002, that five capabilities assist in explaining the persistence of economic patterns of industrial growth, productivity and income differentials among countries. These capabilities are: knowledge²⁹ (in the sense of the national ability to increasingly generate and manipulate data, information, knowledge and cultivate the wisdom to enable the absorption of technology and manage its application to solving local problems); openness to external sources of technological knowledge (in the sense that trade openness -- given improvements in macroeconomic reforms, concerning labour markets for instance -- and growth are positively correlated) [Chang et al. (2005)]; development of the capital and financial system (in the sense that, although the precise relationships between legal, political, financial, institutional and capital market variables are difficult to discern, financial factors and systems³⁰ affect growth outcomes) [Bordo and Rousseau (2006)]; the quality of governance (meaning basically national abilities in minimising and/or moderating the incentive structures that lead variously to rent-seeking and corrupt behaviour) [Kaufmann (2005)]; and the extent of democracy³¹ (in the sense that representational electoral systems, universal suffrage and non-violent political change are linked to growth) [Bordo and Rousseau (2006); Persson and Tabellini (2006a, 2006b)].

The weight of evidence at the global level points to factors that signal some of the variables, which could serve as the basis for policy-making. One important factor, (the role of institutions, deserves more attention as institutions invariably constitute the manner of decision-making in society [North (1990)]. While the literature does not indicate unanimity, it seems that

²⁸ However, with respect to the atmospheric environment, clearly the result of the outcomes of various policies and associated instruments is that, in terms of climate change, the environment is amenable to policy (see Richard Black, 'Clear human impact on climate', BBC News website, 3 May 2006) with respect to final report, Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences, U.S. Climate Change Science Program, Synthesis and Assessment Product 1.1, April 2006.

²⁹ The World Development Report (1998/99 World Bank) entitled "Knowledge for Development" indicated the critical importance of two types of knowledge crucial to DCs, namely, knowledge about technology; and knowledge about attributes (focusing on qualities about training the labour force).

³⁰ It is germane that one regular publication of the IMF entitled "Finance and Development" has analysed for policy advisory directions, the various financial systems of DCs. For example: Islamic Financial Systems (June 1997); Resilience of Financial Systems to Shocks (December 2004); Financial Flows to Africa (June 1997); CIS-7 Countries Financial Systems (December 2003); Financial Systems Soundness (March 1997) etc.

³¹ See Mark Gradstein, Democracy, Property Rights, Redistribution and Economic Growth, CEPR Discussion Paper, No. 5130, June 2005, for an articulation of the relationship between institutional quality and democracy and growth.

the characteristics, qualities and performance of national institutions are crucial to growth.³² One aspect of this policy variable that needs addressing is the measurement issue -- what are the most appropriate measures of institutional characteristics, quantities and performance? [Aron (2000)]. Mauro (1995) who shows a correlation between low bureaucratic efficiency and low political stability suggests that institutional quality is important in how poor judicial systems, corruption and 'red tape' hinder growth.³³

The implication for policy advisory direction is that, given the correlation between institutions and growth, but not the direction of causality according to Aron (2000 p. 115), it is difficult to prescribe whether DCs should concentrate on growth and then deal with their institutions, or whether they should 'fix' their institutions³⁴ in order to grow? There is also the thorny question of when and to where policy makers in DCs should switch their policy attention? With regard to the LDCs -- the majority in Africa -- institutions and their qualities seem to matter a great deal [Ayittey (1992, 2005)]. The implications for industrial growth are that the five capabilities of Fagerberg and Srholec (2005) have to be developed, maintained diligently, and increased over time through policies that generate the capabilities effectively and efficiently. This is easier said than done, as the long-term growth performance of countries since the late 1800s shows [Maddison (1993)]. And then there is the issue of which of the five policy areas -- knowledge, openness, capital and financial markets, quality of governance, and extent of democracy -- should be prioritised for policy implementation; and what should be the sequencing of the others? The next part attempts to shed some light on the macroeconomic variables (for policy) responsible for growth dynamics.

³² Governance and institutions are intensively analysed and studied so much so that a casual search of World Bank documents and reports yields over 9,000 dealing with national governance (keyword) alone. Recently, the World Bank has focused on institutions in its World Development Reports of 1997, 2002, 2003, 2004. The IMF's World Economic Outlook Reports have focused on institutions in the 2003, 2005 (April), 2005 (September) reports.

³³ An informed view of the Corruption Perceptions Index 2005 from Transparency International (www.transparency.org) indicates an inverse association between economic standards of living and the amount of corruption in an economy. See Global Corruption Report 2006.

³⁴ According to Alan Greenspan there are "three important characteristics influencing growth: (1) the extent of a country's openness to trade and its integration with the rest of the world, (2) the quality of a country's institutional infrastructure, and (3) the success of its policymakers in implementing the measures necessary for macroeconomic stability." (Remarks by the U. S. Federal Reserve Board Chairman at Banco de Mexico's 2nd International Conference "Macroeconomic stability, financial markets, and economic development", Mexico City, 12 November 2002).

3. Macro-level Conditioning Factors

The persistent patterns of long-term growth in the world economy are ultimately manifest at the national level of each country. However, before attempting to portray the macroeconomic factors and variables, which make up the pool from which policy advisory directions may be taken, it is useful to sketch briefly some of the stylised facts as a background, given the vast amount of empirical literature on national policies for economic growth.³⁵

Each of the stylised facts, in turn, points to a general direction for policy advisory but does not disclose the specific details relevant to the national unit of analysis as to how the appropriate sets of particular policies should be configured in space and time; how they should be calibrated (and re-calibrated) according to the changing circumstances of the country in question (and those in its neighbourhood and far abroad); what knowledge is required of policy makers to configure and calibrate the sets of policies? In addition to these questions, Andersen and Gruen (1995, p. 280) indicate the complex and difficult nature of crafting and designing macroeconomic policies for growth by posing the simple question “How should ‘macroeconomic policies’ be defined and measured and through which channels do ‘good’ or ‘bad’ policies affect growth?”

First, according to Easterly and Levine (2001, p. 2), the between-country differences in the level of, and GDP, growth rate per capita are better explained by total factor productivity (TFP) -- a “something else” -- rather than factor accumulation. The models of TFP place emphasis variously on technology, technological change [Romer (1990)], barriers to technology diffusion and externalities.³⁶ These point to policy advisory directions which emphasise and encourage, through incentives, public (and private) investment; and investment in research and development (R&D)³⁷ and innovation.³⁸ In contrast to Easterly and Levine (2001), Baier et al. (2006, p. 42) conclude from an analysis of 45 countries over 1900-2000 that “little of the average growth of output per worker across the world is directly due to growth of TFP: 14% for all countries.”

³⁵ A typically serious empirical paper on policies for growth and development may have well over 100 references with dates of works starting from the 1950s.

³⁶ See, for example, Lucas (1988) for how technological spillovers, economies of scale effects and technological complementarities assist in explaining the way TFP affects output.

³⁷ It is not without reason that the share of government public spending as a percentage of GDP for 16 of the most industrialised countries has risen on average from below 10 per cent to over 45 per cent (with the highest individual expenditure exceeding 60 per cent) from 1870 to 1990. See Kwasnicki (2000) for the role of innovation.

³⁸ There is similarly a vast literature on innovation and industrial growth (see Danish Research Unit for Industrial Dynamics Biannual Conferences since 1995) which can serve as a pool for policy advisory direction.

Furthermore, “other regions have less, negligible, and even negative growth of TFP ... consistent with the importance of institutional changes and conflicts.”

The policy implications, given that “over long periods of time, the growth of output per worker is associated with accumulation of physical and human capital and technological change” [op. cit. p. 42], are that physical accumulation and education are important for growth and should not be ignored at the expense of other variables of growth. UNIDO’s own review on assisting DCs to master and absorb technology³⁹ points to the multi-faceted aspects of such policy advisory direction ranging from the encouragement of more tangible investment, for example, in (technical) education [Barro (1997)] to the more intangible aspects such as fostering improved social capital formation.

Secondly, across countries, national macroeconomic performance points to divergence not convergence over the long-run.⁴⁰ Thirdly, it is important to appreciate, in the context of a review for policy directions, that “growth is remarkably unstable over time. The correlation of per capita growth in 1977-92 with per capita growth in 1960-76 across 135 countries is only .08” [Easterly and Levine (2001, p. 20)]. This presents a real dilemma to policy makers regarding the configuration, calibration and switching (on/off, and between) policy variables.⁴¹ Fourthly, economic activity powering growth “is highly concentrated” (op. cit. p. 22). Furthermore, “this concentration has a fractal-like quality: it recurs at all levels of analysis, from the global level down to the city level. This concentration suggests that some regions have “something” that attracts all factors of production, while others do not.” (op. cit. pp. 22-23).⁴² In the context of macroeconomic variables, “each factor of production flows to where it is already abundant.” (op. cit. p. 27).⁴³ Fifthly, while there are contending empirical results -- and hence some disagreement

³⁹ See Frank L. Bartels, 2005, UNIDO’s Contribution to Technological Development: Enhancing Developing Countries’ Ability to Absorb and Master Technology, IPT Technology Paper Series, No. 4/05, September.

⁴⁰ This echoes earlier findings referred to above as well as the work of Durlauf and Quah (1998) on empirics of growth economics that points to a bifurcation in country income levels post-1960 such that there is now a bimodal distribution of income levels with rich countries remaining rich and poor countries remaining poor; and with few countries moving from one distribution to the other.

⁴¹ Given a stable political environment this is achievable, however the high rates of conflict and instability that has attended the LDCs since the 1960s has done immeasurable damage to the policy makers’ ability to design and implement policy. See Meredith (2005) and Guest (2005) for an analysis pertinent to Africa. The University of Maryland’s Center for International Development and Conflict Management Study “State Failure Task Force Report: Phase III Findings, 2003, points to instabilities (political, ethnic, religious fragmentations) as significant in the lack of growth.

⁴² An illustration of this concentration shows that the top 20 countries with some 15 per cent of global population produce some 50 per cent of global GDP. In the United States, 50 per cent of GDP is produced by cities occupying 6 per cent of land area.

⁴³ Among the arresting examples of this phenomena are labour towards rich countries; human capital (‘Brain Drain’) to the industrialized countries; capital flows to the ‘North’.

on which factors and variables animate economic growth, and on the measure of their coefficients or elasticities -- policy, overall, is crucially linked to socio-economic advancement. These macroeconomic variables, in particular, their importance in relation to growth, are addressed in the following section.

Unequivocally, a prerequisite for sustained economic growth -- in which industry is able to play the major part -- is stable macroeconomic conditions. Fischer's (1993) seminal empirical analysis articulates the key policy variables while cautioning that a stable macroeconomic environment alone is insufficient. The key policy variables, namely, rate of inflation, budget surplus and black market exchange premium, are significantly correlated with growth rate. As inflation is negatively correlated with growth, the direction of policy should be to target inflation⁴⁴ as part of monetary policy to avoid inflation variability, because inflation reduces capital accumulation, and investment. Despite the negative correlation between inflation and growth, as an illustration of the difficulties in policy advisory directions and policy setting, Ball and Sheridan (2003) find that "there is no evidence that inflation targeting improves performance." (op. cit. Abstract). Nevertheless, the reason why inflation is a key policy variable is due to its impact on productivity growth. Fischer (1993, p. 16) finds that "an increase in the inflation rate by 100 per cent is associated with a decline in the rate of productivity growth of 1.8 per cent per annum."

Another key macroeconomic policy variable is the budget surplus which is positively correlated to growth. Increases in the budget surplus and improvements in the terms of trade [Fischer (1993, p. 16)], are positively correlated with increases in productivity growth.⁴⁵ Caballero et al. (2004) in looking at 'speculative' growth describe a feedback mechanism "from increased growth to an increase in the supply of effective funding ... when an expansion comes with technological progress in the capital producing sector, when fiscal rules generate sustained fiscal surpluses" (op. cit. Abstract). Clearly, from a policy perspective -- notwithstanding the political pressures

⁴⁴ See Ben S. Bernanke, "A perspective on inflation targeting" for an exposition of the highly complex operational side of policy-making with respect to the inflation macroeconomic variable; "the principles by which the policy committee decides how to set its policy instrument, typically a short-term interest rate"; and the process of communicating the policy objectives of inflation targeting. (Remarks by Governor (FRB) Ben S. Bernanke, at the Annual Washington Policy Conference of the National Association of Business Economists, 25/March/2003, Washington D.C.); and Bernanke and Woodford (2004) for a comprehensive view of the policy 'art'; and Croce and Khan (2000) for a simpler demonstration of inflation targeting as a policy measure for sustaining growth.

⁴⁵ See, for example, testimony of FRB Chairman Alan Greenspan, "The State of the Economy", before the Committee on The Budget, U. S. Senate, 24/January/2002 indicating "the re-emergence of moderate unified budget surpluses By lowering the publicly held federal deficit and freeing up private saving to be channelled into capital investment."; and testimony of FRB Chairman Ben S. Bernanke, "Outlook for the U.S. Economy" before the Joint Economic Committee, U.S. Congress, 27/April/2006, stating that "actions to move the federal budget towards a more sustainable position would do a great deal to help ensure the future prosperity of our country."

incumbent on government, and *ceteris paribus* -- government spending should not outpace government revenues.⁴⁶ Fischer (1993) finds that budget deficits are significantly correlated with low growth through lower capital accumulation and lower productivity growth, (and probably lower investment).⁴⁷ Fischer (1993) finds further that foreign exchange rate policy which does not lead to market distortion manifest in the black market premium is conducive to growth. Fischer's (1993) findings are supported by more recent studies.⁴⁸

Since Fischer's (1993) study, other empirical studies have continued to disclose additional important policy factors and variables, notably Akinlo (2005) who points to macroeconomic variables on TFP for sub-Saharan African (SSA) countries, and Andersen and Gruen (1995) who discuss the macroeconomic framework that is conducive to growth. Given the role of TFP⁴⁹ Akinlo (2005) finds that, for 34 SSA countries over the period 1980-2002: increasing external debt and inflation are negatively correlated with TFP; low agricultural value-added share of GDP is negatively correlated with TFP; and increases in human capital, exports share of GDP, credit of private sector share of GDP, FDI share of GDP, and manufacturing value-added share of GDP are all positively correlated with TFP.

While these point to policy advisory directions of macroeconomic stability, technology and education, FDI and the private sector, the actual policies, in terms of debt management, fiscal responsibility, and the configuration of incentives and direct support which will enable human capital formation without disruption and attract FDI, remain difficult to define precisely. And, anyway, the actual policies and their configuration would need to be country specific and designed to be applied with reference to local conditions. Nevertheless, evidence indicates that human capital and social capital are elements of the "deep determinants of economic

⁴⁶ See, for example, Henderson (2006).

⁴⁷ See DeLong's (2000, p. 13) analysis of U. S. investment during the 1982-1989 business cycle in which "the nominal share of investment in GDP fell as the expansion proceeded (due to) a decline in the savings rate, and the large budget deficits that had emerged during the 1980s."

⁴⁸ See, for example, Bekaert et al. (2005, p. 26) who find "a significantly positive relation between the black market premium and the (growth) volatility ratio (consumption growth volatility to GDP growth volatility)". An important adjunct to this aspect of distorted exchange is the role of military spending in DCs which leads to higher black market premium in turn leading to lower growth prospects [Bahmani-Oskooee and Goswami (2006)]. See also Tsangarides (2005, p. 15) who finds the following as "very strongly" robust growth determinants: inflation; fiscal balance to GDP; overall investment to GDP; government consumption to GDP; initial income; polity; terms of trade; tropical geography; trade terms; and black market premium. With specific reference to Africa, the additional determinant variables are: democracy; civil war; and debt service to GDP. See also Redding and Venables (2004) who point to the importance of market access in increasing per capita income through augmenting exports as well as the level of exports in GDP -- a 1 per cent increase in exports raises per capita income by about 0.25 per cent.

⁴⁹ See Jeong and Townsend (2004) who indicate the sources of TFP growth during Thailand's 1976-1996 period of structural change as occupational shift (technological change) and financial deepening.

development” [Knowles (2006, p. 21)], and inward FDI impacts positively on growth via a number of mechanisms including technological knowledge transfers [Hansen and Rand (2005); Razin (2002)].⁵⁰ Andersen and Gruen (1995) refer to Aschauer (1989a, 1989b) in relation to public investment in the stock of capital and productivity increase.⁵¹

The above points to policy advisory directions for investment in education for boosting human capital formation; restructuring the environment in which business is transacted; enabling the private sector to progressively engage in transformational (value-added) activities; and ensuring that the FDI regulatory regime exhibits modal neutrality and market contestability and policy coherence.⁵² Clearly attention to changing the regulations that govern doing business, for domestic and foreign investors alike, to render them free of rent-seeking behaviour would need to be a policy priority.⁵³ In relation to property, a crucial policy advisory direction concerns the regulatory environment in which property is legally registered and the ensuing rights can be collateralised [De Soto (2003)], and subsequently used in transactional and/or transformational economic activity.

To say that policy craft -- creating policy coherence out of the conflicting demands that arise due to national objectives and obligations to international treaties, modal neutrality, market contestability, as well as scaling and measuring the factors and variables which must be considered in policy research and analysis -- is a challenge, is an understatement.⁵⁴

⁵⁰ From a policy perspective, a great deal of effort is invested, for example, in inward FDI promotion and there are several sources of organisational advisory, including MIGA, UNCTAD, UNIDO, and World Association of Investment Promotion Agencies (WAIPA). The fact that the (WAIPA) has over 200 members is an indication of the implications of the importance of attracting FDI for policy craft.

⁵¹ Often, in terms of investment in education and (transport) infrastructure, it is found that, with respect to the United States a 1 per cent increase in the stock of public capital increases private sector capital productivity by 0.4 per cent; and with respect to aggregate investment an increase of 1 per cent in capital stock per worker leads to an increase in annual output growth per worker by 0.3 per cent.

⁵² Modal neutrality describes policies that allow foreign investors to decide for themselves how best to serve the markets they enter. Market contestability embodies the ability of both foreign and domestic investors to compete on a level of playing field for factors of production. Policy coherence refers to the degree of internal consistency of objectives, FDI policies and interpretation of policies, in their regulatory form, across a range of issues and at different levels of government, and at different locations in the country.

⁵³ The variables for policy attention include the transaction costs, that is, the time and costs for: starting a business; dealing with licenses; employing workers; registering property; getting credit; protecting investors; paying taxes; trading across borders (customs and excise); enforcing contracts; and closing a business (see World Bank, *Doing Business: Bench marking business regulations*, 2005, 2006, The World Bank Group, for a global comparison of business transaction costs in different countries).

⁵⁴ Policy and policy instruments, which can be generalised as incentives, obviously need to be crafted in relation to overall economic development goals. Thus, different dimensions of incentives can be depicted. First incentives can be either *general* or *specific* (with a discretionary perspective). A second dimension is the durability of incentives. Indeed, according to the country's priorities, incentives could be either *permanent* or *temporary*. However, pragmatically, policy and policy instruments related to incentives need to change in duration so as to encourage the kinds of economic behaviour and industrial specialisation the country wants. And therefore it is

However, econometrically, as every factor or variable has its own growth coefficient or elasticity, policy makers (and countries) with limited resources should therefore concentrate their policy formulation efforts on those factors and variables with the highest growth coefficients or elasticities. As an illustrative example, given the role of FDI in growth, in rank order, with respect to FDI [Christiansen (2004)]⁵⁵ as a driver of growth these are: (i) growth-competitiveness, which combines macroeconomic and technology variables, with a FDI inflow elasticity of 0.63; (ii) economic freedom, combining government intervention, property rights, wages/prices and regulation variables, with FDI inflow elasticity of 0.56; (iii) taxation and regulation, with a FDI inflow elasticity of -0.50; (iv) quality of telecommunication services, with FDI inflow elasticity of -0.28;⁵⁶ and (v) labour market regulation, with FDI inflow elasticity of -0.26.

Furthermore, it should be recalled that coefficients or elasticities have short- medium- and long-term adjustments rates. These are some examples of the variables for policy design. Awareness of such policy variable coefficients and elasticities (and the underlying measure of the particular variable), allows policy makers to weigh the choices and options, including the policy instruments available to them, in a systematic manner commensurate with resources obtainable in the country. With reference to the above, a focus on the macroeconomic environment stability and technology policies to increase the rates of innovation and transfer is necessary. In a similar vein, harmonising taxation regulation across regional space would be a viable policy.

The purpose of the above illustrations, using FDI as one variable of growth, is to reveal the slow nature of the adjustment process. Policy craft, levers and instruments require ultimately resources to be applied to one, or more variable(s), in the environment of the national economy for the selected variable(s) to change in the desired direction. Empirical growth-related studies [Bourguignon (2002); Arora and Vamvakidis (2005)] pose the question “There is no doubt that faster economic growth is associated with faster poverty reduction. But what is the

useful to think of policy and policy instruments as ‘windows of opportunity’ which open and close. Another dimension exists at the geographic -- or spatial -- level since incentives can target economic activity either at a national, a regional or a local level. Local incentives can be used to promote specific regions of a country that are poorer or in greater need of development (this is one example of the “non-actionable” subsidy approach regarding regional development assistance for balanced growth). Further, incentives can be used respectively for the whole *economy* or only to certain *sectors* or sub-sectors, according again to development strategy and the specific needs of the country. Finally, at the firm level, incentives can focus either on *all firms*, or only on *specific investors*.

⁵⁵ For example, the FDI stock elasticities of GDP per capita range from 0.89 to 0.96 implying that a 10 per cent increase in a country’s GDP per capital would result in a 10 per cent increase in inward FDI stock. See Christiansen (2004, pp. 32-37) for other FDI-elasticities (economic freedom, taxation, regulation, infrastructure, human resources).

⁵⁶ The measurement scale is from 1 to 5 representing increasing poor quality, hence the negative sign on regression coefficient.

corresponding elasticity?” [Bourguignon (2002, p. 1)]. It turns out that, as with the illustrations on FDI above, the ‘gearings’, tend to be modest, notwithstanding the fact that the nexus between growth and poverty and its reduction is far from straightforward. Policy advisory directions that encourage policy makers to go for growth in order to reduce poverty should take into consideration the finding that, for example, “a one per cent increase in mean income or consumption expenditures in the population reduces the proportion of people living below the poverty line (US\$ 1/day) by 3 per cent” [op. cit. p. 1] (assuming the country in question has the resources to stimulate the required increase in income).

Bourguignon (2002) does not prescribe what should be done to promote growth, but taking into consideration earlier indications of the determinants of growth [Fischer (1993)]⁵⁷, even the effort to create a one per cent increase in consumption would be a challenge for resource-constrained DCs. Furthermore, according to Bourguignon (2002, p. 12), “a growth spell leading to an annual 2.7 per cent rise in mean income ... increases poverty reduction by some 3 percentage points annually.”

Bearing in mind that industrial growth, socio-economic development and poverty reduction are ultimately generational, and therefore the requisite policies must be appropriately configured, calibrated and switched in time and space, it is sobering to note that according to Rogers (2003, p. 112) “it is worth pointing out the implications of small differences in per capita growth rates. A 0.6 per cent growth rate will not even double GDP per capita over 100 years: A 2 per cent growth rate will raise GDP per capita by 7.4 times over the same period.” How challenging these rates may be for (especially lower income) DCs to achieve and sustain, *ceteris paribus*, is indicated by Rodrik (2004, p.14) that, despite the higher than expected frequency of occurrence of growth accelerations (increase in growth of or above 2 percentage points), most growth accelerations⁵⁸ “were not sustained” for a sample of 110 countries over 1957-1992.⁵⁹ Furthermore, for the period 1960-1999 Arora and Vamvakidis (2005, p. 10) conclude that “a 1 percentage point increase in South African economic growth is correlated with a $\frac{1}{2}$ - $\frac{3}{4}$

⁵⁷ For a comprehensive view of growth regression explanatory variables, and their sign and significance, see Tsangarides (2005) for how different empirical approaches (and authors) can find, in some instances, differing results for the same variable.

⁵⁸ It should be noted that these growth accelerations are “highly unpredictable” [Rodrik (2004), p. 17].

⁵⁹ The difficulties inherent in the challenge are illustrated by Tahari et al. (2004, p.1) who, in looking for sources of growth in sub-Saharan Africa, find that the “average annual growth in the region, at 3 $\frac{1}{2}$ per cent during 1997-2002, is less than half of the estimated growth needed to halve the fraction of population living below \$1 per day between 1990 and 2015.” Furthermore Tahari et al. (2004) point, inter alia, to the need for better institutions and human capital development.

percentage point increase in growth in the rest of Africa.”⁶⁰ In terms of catching up, Lewis (2004b) makes the sobering statement “even if poor countries grew at the extraordinary rate of 7 per cent a year, it would take them 50 years to catch up. At current rates, it would take them a couple of centuries - if they ever did.” [op. cit. p. 2, on-line version]⁶¹ Together, these coefficients, elasticities and figures pose serious challenges to policy formulation and advice.

Given the complexities involved in crafting policies for competitive growth,⁶² it is natural that some of the reservations regarding the policy factors and variables outlined above are addressed before going on to look at some aspects of structural change and productivity (which drives aggregate economic growth from the microeconomic level). First, growth patterns for individual countries and growth accelerations, as analysed by Rodrik (2004), are quite unpredictable. And, despite the link, for instance, between low inflation and growth, according to Fischer (1993, Table II, p. 32) during the period 1961-1988 several countries experienced greater than 5 per cent annual growth for a year or more when the inflation rate was above 50 per cent. By the same token according to Fischer (1993, p. 20) while “countries that are able to reduce the inflation rate in a sustainable way can on average expect higher growth to follow ... there is nothing in that argument that contradicts the view that controlling inflation will help restore growth.”⁶³ The difficulties of attempting to prescribe policies, over and above the general principles, even when contingent specificities are known are amplified by Fischer’s (1993, p. 21) statement “It is clearly possible to sustain large deficits for some time, with the assistance of high savings rates and financial repression (and grow).”⁶⁴

It is reasonable to signify that the foregoing sketches the broad policy directions regarding economic growth. Before moving to look at some of the dynamics of productivity growth as drivers of economic growth which also point to policy, it is useful to reflect on the very long-term record of economic growth. Rogers (2003), in his survey of economic growth, reviews the

⁶⁰ The gravitational effects of growth have not been a focus when considering factors and variables of policy advisory directions, however, very clearly, there is a regional as well as a global dimension to policy factors and variables, and hence advisory directions.

⁶¹ And this assumes that the advanced industrialised countries would have either very modest growth rates or very low growth rates.

⁶² See, for example, the EU Lisbon Agenda to make the European Union a competitive and dynamic knowledge-driven economy by 2010.

⁶³ For a fuller explanation of the subtleties involved vis-à-vis growth within high deficits and inflation using indexation, see Dornbusch and Fischer (1993).

⁶⁴ Any discrepancy that this earlier statement may evoke regarding, for example, the situation of the United States (currently low savings rates, high deficits and growth) would need to be viewed through the binoculars of United States productivity growth and foreign investment in the United States [Gordon (2004); Jorgenson and Stiroh (2000); Gros (2006a, 2006b)].

empirical evidence and highlights: investment and finance banking development and stock markets as conducive to growth (notwithstanding the issue of causality); human capital (with education as key);⁶⁵ macroeconomic factors and the role of government in providing public goods;⁶⁶ rule of law; international openness (which permits knowledge exchange and learning); and technology. These factors, and their associated policy instruments, are seen as determinants of growth.

Concerning the technology factor, as pointed out earlier by Lall (1992), technical know-how and learning are difficult, and the absorptive capacity and enabling conditions that support learning, *within the DC in question are crucial to the technology transfer which is important in innovation and productivity.*⁶⁷ It is worth noting that the change in theoretical view from neo-classical models to endogenous growth models has widened the horizon for factors and variables which determine national economic and industrial advance. Nevertheless, according to Rogers (2003, p. 129) the endogenous growth model “cannot, on its own, guide policy.” This poses further challenges to policy makers and policy advice especially with respect to LDCs. As far as Africa is concerned “expensive investment goods, low levels of education, poor health, adverse geography, closed economies, too much public expenditure (on the wrong things) and too many military conflicts are seen as the key explanations of the economic tragedy.” [Artadi and Sala-I-Martin (2003, Abstract)] Herein lies exemplary policy advice.⁶⁸

4. Micro-level Considerations

The challenges for policy craft and advice continue at the level of industrial economics and the firm. Although the orientation may change from concern with the economy as a whole to concerns about which sectors experience concentration and which are subject to dispersal and firm survival, nonetheless policy guidance from government authorities is still required to steer

⁶⁵ Rogers (2003) emphasizes the empirical difficulties in measuring human capital, which should ideally include formal schooling time but also quality measures as well as non-formal learning activities and behaviour.

⁶⁶ In this respect the World Bank Research Report of 1993, *The East Asian Miracle: Economic Growth and Public Policy*, highlights the efficacies of policy interventions - but cautions that “the variety of institutions, and the variations in policies among the HPAs does not allow a model (of rapid growth with equity) to be developed.” [op. cit. Abstract]. However, the report points to broad based human capital, good macroeconomic development, and limited price distortions as the basis for growth.

⁶⁷ There is a vast amount of literature on the role of innovation and technology which is beyond the scope of this paper. However TFP growth rates are correlated with both domestic and foreign R&D [Rogers (2003)].

⁶⁸ However, such policy advice, as would be pertinent to sub-Saharan African countries, would need to take into consideration a historical and political economy context that in turn would inform the said advice. See Giovanni Arrighi, 2002, *The African Crisis: World Systemic and Regional Aspects*, *New Left Review*, Vol. 15, May-June, pp. 7-10, 30-31, in particular [Giovanni Arrighi is Professor of Sociology at Johns Hopkins University].

aggregate firm-level activity for increasing productivity.⁶⁹ This is the point at which industrial policy, in its various guises, comes to the fore.⁷⁰ Despite enormous interest in, and resources directed to, productivity measurement and analysis,⁷¹ the subject raises controversial issues, yet seems to be the pivot on which success in growth and industrialisation depends.

Before looking at productivity issues for policy advisory, it is germane to review briefly drivers of industrial performance -- as these signal “underlying structural factors” of industrial success [Lall (2003, pp. 1, 12)] and enable productivity changes to take secure root at the firm level. In turn, this allows competition to maximise returns and utility.⁷²

Lall (2003) points to FDI, technological effort (in terms of domestic R&D), skills, infrastructure, and licensing as the key structure of industrial performance. Policy craft therefore would need to increase the value of the variables that are associated with these factors. And, as industrial growth and development are the concerted outcome of rational economic activity by economic agents -- firms and entrepreneurs -- policy makers would need to pay close attention to those variables which condition the domestic business climate and commercial environment and enable businesses to service customers and create value without punitive transaction costs [World Bank (2005, 2006)].

The considerable economic and industrial policy effort directed to enhancing productivity is neatly summed up by Krugman (1990, p. 9) “productivity isn’t everything, but in the long run it is almost everything.” However, the statement does not readily disclose the inherent difficulties and controversies associated with productivity which, of course, influence debate and policy

⁶⁹ While the individual manager is concerned with company survival, the government (notwithstanding political considerations and lobby pressures) is primarily concerned with ensuring a dynamic rate of sectoral entry and exit that advances the overall efficiency and competitiveness of the sector. This has implications for technical cooperation given to a particular sector – in that increasing the rate of dynamism may have temporary and permanent labour impacts, which require other policies to mitigate the social consequences.

⁷⁰ It is not without reason that, following the performance of the Japanese economy during the 1960s and 1970s, and the stagnation of the 1980s, the Federal Reserve Bank of Kansas City annual economic symposia in 1983 and 1992 focused respectively on “Industrial Change and Public Policy” and “Policies for Long-run Economic Growth”.

⁷¹ The United States has no less than six official government departments involved in this activity; Bureau of Economic Analysis; Congressional Budget Office; Council of Economic Advisors; Bureau of Labour Statistics; General Accounting Office; and the Federal Reserve. Several leading institutions in the industrialised countries carry research programmes on productivity. The subject is regularly discussed in leading financial press.

⁷² Porter’s (1990, p-xiii) view of within industry competition is “the particular industry .. is where competitive advantage is either won or lost”, and it is the pace and dynamics of competition that determines whether the economy is internationally competitive or not (this is notwithstanding the continuing debate on what is competitiveness?). For a view on the competing notions of competitiveness see, for example, Ezeala-Harrison (2005), Lévy (2005) and Flint (2000).

advisory directions, for example, towards removing the legislative formalities and regulations that maintain protected interests.⁷³ These controversies are not trivial.⁷⁴

Returning to the macro-level momentarily, on the one hand, Felipe⁷⁵ (1997, Abstract) concludes, perhaps unexpectedly, after a critical survey, that “the theoretical problems underlying the notion of the TFP are so significant that the whole concept should be discarded; the TFP growth estimates are contentious: they vary significantly, even for the same country and time period, depending on assumptions and data sources.”⁷⁶ In only limited ways does this view reflect an earlier empirical view [Young (1994, Abstract)] that “while the growth of output and manufacturing exports in the newly industrializing economies of East Asia is virtually unprecedented, the growth of total factor productivity in these economies is not.” A similar view is expressed by Krugman (1994) regarding growth in East Asia. The misgivings over concern with productivity⁷⁷ are neatly encapsulated by Sarel (1996, p. 21) in the analysis of growth in East Asia as “the study does not offer clear and conclusive results nor does it make clear policy recommendations ... it is far from clear what specific policies governments should pursue, beyond the standard set of policies aimed at getting the basics right.”

It is fair to say that the controversies may not have died down with respect to production and productivity measurements.⁷⁸ On the other hand, there is an enduring focus on productivity⁷⁹ that continues to provide markers for policy advisory [Lewis (2004a)] and is of concern to

⁷³ See Martin Wolf, Competition would overthrow the tyranny of vested interests, *Financial Times*, 18/January/2006, p. 15 for a penetrating view on some of the key issues. The obstacles highlighted as standing in the way of competition, and hence productivity growth, are seen as a combination of “incumbent businesses, corrupt bureaucrats and politicians, possessors of sinecures, protected workers in formal employment, and beneficiaries of government subsidies.”; and James Manyika, The coming imperative for the world’s knowledge economy, *Financial Times*, 16/May/2006, p. 13 for a view of the increasing role of “tacit interactions” in productivity growth.

⁷⁴ For a technical view see Hulten (2000).

⁷⁵ Senior Economist, Economics and Research Dept., Asian Development Bank, Manila, Philippines.

⁷⁶ See, for example, Forstner and Isaksson (2002) in which different statistical techniques can yield differing results.

⁷⁷ See Stefan Stern, It is time to end our unproductive fixation with productivity, *Financial Times*, 11/April/2006, p. 10 which indicates some difficulties of the concern with measurement in relation to quality and public sector productivity, for example.

⁷⁸ In a series of articles by Felipe, and others, (2005, 2005, 2003, 2001) take issue with the measurement challenges involved. This followed a refutation by Krugman (1994) in the *Asian Wall Street Journal* by J. Felipe, Why Krugman is wrong, 18/March/1997, p. 8. It should be noted that this refutation was at a time just before the onset of the Asian Economic Crisis in mid-1997 [Bartels and Pass (2000, pp. 280-303)] when the ills of Asia were blamed on precisely the attributes and policy interventions that earlier were considered vital for growth [See Rodrik (2004, Table 2, p. 6) East Asian Anomalies].

⁷⁹ In addition to government departments, a number of institutions have programmes on productivity. A key word search (productivity) in the ProQuest Social Science Journal data base yields over 6,000 various scholarly articles on the subject. Since 1980 the McKinsey Global Institute has produced over 200 reports on productivity including the major study (2001) on United States Productivity Growth 1995-2000. The UNCTAD Least Developed Countries Report 2006 mentions productivity over 300 times.

governments.⁸⁰ Lewis (2004b) persuasively, but provocatively, indicates that the orientation of policy for growth should move from conventional wisdom's exclusive focus on the factors of production (including technological infrastructure, capital markets, education, health; and the policy prescriptions of the 'Washington Consensus' [Rodrik (2004, p. 12)] -- important as they are) towards a focus on undistorted competition in product markets for the benefit of serving consumers and their interests. The principle arguments are that first, "competition is the mechanism that helps more productive and efficient companies expand and take market share from less productive ones Consumers benefit as companies offer better goods at lower prices" [Lewis (2004b, p. 3, on-line version)]. Secondly, "The main obstacles to economic growth in poor countries are the many policies that distort competition." [op. cit. p. 4, on-line version].⁸¹

In this argument, in which primacy seems to be given to economic advancement through competition to enable the consumption of 'goods', a holistic view of industrial development and policy advisory could not ignore the production, and externalities and involuntary consumption of 'bads' [Dunning (2005, 2006); Braithwaite (2005)]. In Lewis' (2004b) view policy advisory direction points unambiguously towards removing barriers to competition (reflective of the World Bank (2005, 2006) doing business prescriptions) for growth to occur. The shift from the Washington Consensus (despite the shrinking policy space) deserves attention as, in many cases, the structural adjustment programmes of the 1980s and 1990s, and their inbuilt policies, did not deliver expected results [Cornia (1991); Rodrik (2004)].

For Van Reenen (2005) policies to boost capabilities in the form of human capital -- especially the management aspect,⁸² and at the bottom end of the labour market -- as well as R&D are the most crucial. This is a critical policy issue as the increasing technological nature of work -- and

⁸⁰ For example, the EU's Lisbon Agenda.

⁸¹ Lewis (2004a) provides a number of illustrations and examples of market distorting measures in both industrialised and developing countries and advocates policy advisory that shifts the balance of policy more to consumer interests over producer (and special interest groups) interests by removing protectionist measures.

⁸² The McKinsey (2001) report on United States productivity growth lays emphasis on improved management and management systems as key in wholesale and retail sectors especially, as well as in securities markets, industrial equipment (computer manufacturing), electronics (semiconductors) and telecoms. It is arguable that the performance of these sectors is a long-run consequence of United States advantages built up, during and after World War II [Gordon (2004)] as a consequence of specific policies. Examples of such policies that have worked well for the United States are: investments in manufacturing standards; engineering education and production management; and defence research grants directed towards leading universities (the results of which are diffused rapidly into the civilian economy).

especially that of 'knowledge-workers'⁸³ -- is demanding increasingly higher matching skills (and vice versa) [Lewis (2006)]. Clearly, policy advisory must therefore be in the direction of broad-based education which ought to include attention to management as well as technical training and up-grading workers' skills in order to increase labour market mobility.⁸⁴

Pissarides (2005) looks for policy insights by examining barriers to factor mobility and the impact of tax regulations, and finds that barriers move economic activity in the opposite direction to TFP. Therefore, to speed up structural change, policy should be oriented to removing barriers to: enterprise start-up⁸⁵ and labour entry into services.⁸⁶ The Kok report (2004, p. 6) concludes that (for the European Union) there are five areas of policy directions: making R&D "a top priority and promoting the use of information and communication technologies"; completing the internal market to enable freer intra-regional factor movement in goods and services,⁸⁷ "reducing the administrative burden" on business; "developing strategies for lifelong learning"; and "spreading eco-innovations". These policy directions can, and should, be adopted and adapted to suit the circumstances of DCs.

According to Pack (2000), in addition to the macroeconomic variables responsible for differences in productivity across countries (already mentioned in Part 3), firm's own investments in learning and worker training is crucial. With respect to industrial policy, Pack (2000, p. 63) concludes, comparing Japan and the Republic of Korea, that regarding industrial success "the simplest explanation is that policies in both countries included significant competition, whether by holding "contests", as in Japan (Stiglitz 1996), or by linking preferential

⁸³ Drucker (1967, p. 5) anticipated the policy requirements in this area by indicating that "productivity for the knowledge worker means the ability to get the right things done. It means effectiveness. Who is an executive? Every knowledge worker in modern organization is an "executive" if, by virtue of his position or knowledge, he is responsible for a contribution that materially affects the capacity of the organization to perform and obtain results." As recently as 2006, the policy implications of equipping economies with knowledge-workers through business education were highlighted by Glenn Hubbard, Dean of Columbia Business School and chairman of the U. S. Council of Economic Advisors (2001-2003) in an op-ed piece "Do not undervalue the impact of business education", *Financial Times*, 28/June/2006.

⁸⁴ As an example of a comprehensive view of the policies that can be adopted, see the initiatives of Singapore's Workforce Development Agency established in 2003 to act as a catalyst and champion of workforce development; and Thangavelu and Wei (2006) for a summary of worker skills upgrading programmes available.

⁸⁵ Again this points to making sure there are progressive improvements in the variables that constrain business as expressed, for example, in the World Bank Doing Business Data Base comparisons of 155 countries.

⁸⁶ For example, a comparison of the United States and European Union seems to indicate that the United States has been more successful in this aspect in that the expansion of jobs in United States drew in more women proportionately than that in European Union.

⁸⁷ In this policy area, clearly the DCs, especially those in Africa, have to address the serious problem of the dysfunctional and poorly integrated regional trade blocs with multiple and overlapping memberships. Thus "regional trade arrangements (RTAs) in Africa have been ineffective in promoting trade and foreign direct investment." [Yang and Gupta (2005, p. 1, p. 11)].

interest rates and tariffs on imported good to success in export markets, as in Korea. Firms thus had strong incentives to improve productivity.” Some of the policies involved may now fall within the framework of the World Trade Organization of “actionable” subsidies (an example of the shrinking space for policy options which the DCs face) as a consequence of successive trade round agreements.

The policy implications are that DCs have to design policy instruments geared to “non-actionable” subsidies. These are in the areas of: R&D assistance to firms and knowledge-based institutions;⁸⁸ regional development assistance for balanced growth; and environmental protection assistance to enable firms to comply with higher operational standards with respect to the environment [Ayala and Gallagher (2005)]. This dovetails with policy recommendations by UNCTAD (2006, p.3) to LDCs that “productive capacities should be at the heart of development and poverty reduction policies.” This policy stance seeks to “get behind the abstract aggregates of the neoclassical growth models ... by focusing on the reality of production ... which can help policy makers, particularly in poor countries, gain a better view of how to start, sustain and accelerate economic growth.” [op. cit. p. 76].

UNCTAD (2006, p. 291) proposes a nested or multilevel approach to policy advisory.⁸⁹ In addition to the macroeconomic policies for stability, policy orientation for LDCs should focus on “meso-level production structures and institutions as well as micro-level capabilities and incentives”; promoting entrepreneurship; and “a strategic approach to global integration”. It is perhaps at the micro-level that the major weaknesses, which hinder policy formulation in DCs, are visible. DCs are generally weak on a number of fronts simultaneously: first, barely sufficient transport, distribution and logistics infrastructure and technology;⁹⁰ secondly, in terms of the feeble organisational and transactional links between the commercial sector (which is usually oligopolistic in the distribution and structure of its firms) and their capital and financial markets (which are usually small, illiquid and isolated from international financial markets);⁹¹ and thirdly,

⁸⁸ The 2004 Rand Corporation Study - The 21st Century at Work, shows the profile of United States’ patents granted as accelerating, deepening and widening during the period 1900-2000. See Karoly and Panis (2004).

⁸⁹ Recognising the disappointments of first- and second-generation reforms [IMF (1999); Rodrik (1996)] the UNCTAD report indicates the need for policies that encourage domestic investment while ensuring that capacity in the agricultural sector is expanded. It should be noted here that in 1999 UNIDO called for a third generation of reforms and policies oriented to the private sector in DCs (UNIDO 8th Session General Conference).

⁹⁰ See Technological Divide, *The Economist*, 22/June/2000.

⁹¹ In many instances of privatisation of state assets during the 1990s local capital and financial markets were unable to handle the operation thus missing out on growth opportunities. See, for example, Bortolotti et al. (2003) indicating that the success of privatisation (one of the first-generation policies of reform) has been limited in DCs with less developed capital markets; and Parker and Kirkpatrick (2005).

the nature of demand conditions and factors [Porter (1990)] is fragile and fragmented with small domestic markets that are unsophisticated in their product/services preferences, and tend to be isolated from regional and sub-regional markets.

Policy advisory would need to emphasise a sub-regional approach to linking urban centres and nodal points in the rural environment with communications infrastructure. Additionally useful is strengthening transactional linkages through greater emphasis on regional and sub-regional trade. A related policy advisory is oriented towards reducing tariffs⁹² to enable any latent or nascent vertical intra-industry trade to develop sub-regionally. Policy would also need to focus on financial intermediation geared to small loan schemes. According to UNCTAD (2006, p. 298) “The new industrial policy essentially perceives the state as a facilitator of learning and a provider of regulatory framework that can accommodate a system of ensured private IPRs, attract FDI through fiscal incentives and indirect subsidies, and improve market governance by removing bottlenecks and correcting market failures.”⁹³

It is worth emphasising that the policy advisory directions portrayed require time to design and implement (and adjust during implementation) [Card and Freeman (2002)]. In Card and Freeman (2002) reference is made to a number of country comparison indices and rankings. It is important to mention here that in these rankings⁹⁴ are to be found not only relevant policy variables -- from which the DC in question can choose what it sees fit to monitor with respect to its macro- and micro-economic environment, and attempt to adjust the selected variables through policy craft -- but also a comparison with its neighbouring, and competitor, countries.

⁹² See IMF, Global Trade Liberalization and the Developing Countries, Issues Brief, 01/08, November 2001 for an indication of the tendency of DCs to have relatively high tariffs -- as a source of government revenue because of low tax base and collection inefficiencies -- which mitigate against intra-regional trade; and Chang (2005b) for the policy conundrum as to why DCs need relatively high tariffs. According to The Globalisation Institute, from 1983 to 2003 SSA reduced its average tariffs from 22.1 per cent to 17.7 per cent in comparison with OECD reduction from 23.7 per cent to 3.9 per cent; and SSA imposed an average tariff of 34 per cent on agricultural goods from other African countries and 21 per cent on other products (See Andrew Mitchell, A Pan-African Trading Area, 25/July/2006, The Globalisation Institute).

⁹³ Attracting inward FDI can be viewed in policy terms as a business ‘make’ or ‘buy’ decision. It may be relatively easier to import what amounts to a domestic industry than to make a home-grown domestic industry. But, of course, there may be lost opportunities to learn in former case.

⁹⁴ See A. T. Kearney, 2005, *FDI Confidence Index*, Global Business Policy Council, volume 8; A. T. Kearney, 2005 *Global Retail Development Index*; A. T. Kearney, 2004, *A. T. Kearney’s 2004 Offshore Location Attractiveness Index: Making Offshore Decisions*, Chicago; Fraser Institute, *Economic Freedom of the World; 2005 Annual Report*, Vancouver; Heritage Foundation, 2006, *2006 Index of Economic Freedom*; IMD, 2006, *The World Competitiveness Yearbook 2006*, Geneva; Transparency International, 2005 *Corruption Perceptions Index*, Berlin; UNDP, 2005, *Human Development Report*, New York; UNIDO, 2002, *Industrial Development Report 2002/2003: Competing through Innovation and Learning*, Vienna; UNIDO; WEF, 2006 *Global Competitiveness Report 2005-2006* Geneva; World Bank, *Doing Business in 2005, 2006*, Washington D.C.: IBRD/World Bank/OUP. See also Countryrisk.com for various country analysis reports which use a variety of indices to compare and contrast countries across dimensions from export to sovereign risk for example.

This can be useful for policy makers in DCs to navigate their way through the many policy variables and options.

Returning briefly to the issue of diminishing policy space, it is worth recalling the kind of trade and industrial policies adopted in the history of industrial development by other countries, notably the United Kingdom and United States, for policy insights [Shafaeddin (1998)].⁹⁵ If industrial policy, at the micro-level, amounts to a set of choices pertaining to industrial sector variables that, for some welfare or strategic (or other) reasons are deemed important enough to warrant alteration by government intervention, then a serious question is evoked. Does industrial policy work? Given the enormous volume of academic research on business, economics and industry, a fraction of which has been touched upon herein, Pack and Saggi (2004, p. 1) conclude a rather unexpected answer that “overall, there appears to be little empirical support for an activist government policy even though market failures exist that can, in principle, justify the use of industrial policy.” This view is in contrast to Fagerberg and Srholec (2005) and Kok (2004) and runs counter to other arguments [Chia (2005)]. In the argument over the answer to the question, does industrial policy work? It is worth quoting in extenso Lance Taylor, Arnhold Professor of International Cooperation and Development and Director, Center for Economic Policy Analysis at The New School for Social Research, Washington, D. C.

“I refer to Martin Wolf’s review of Edmund Phelps’ Nobel lecture (“European corporatism needs to embrace market-led change”, January 24, 2007). It is true that big European economies did not play the leading role in the information technology revolution, but that was not due to corporatism as Prof Phelps argues. It was the result of American industrial (essentially Defence Department) policy operating over five decades of history. Largely through public (read Defence) support of leading corporations the US took three big steps: development of programming and computer systems for national security purposes (concentrated on IBM), transistors (Bell Labs), and creation of the internet (initially for the military in the Pentagon’s Advanced Research Projects Agency Network, Arpanet). Prof Phelps ignores history. Industrial policy sets the stage for corporate structure and responses, not the other way round.”

[“Postwar industrial policy set stage for US progress in IT”, Lance Taylor,
Letter to the Financial Times, 26 January 2007, p. 12]

⁹⁵ See also, *New Development Threats and Promises*, Queen Elizabeth House’s 50th Anniversary Conference, 4-5 July 2005, Oxford, U. K. especially Westphal’s (2005) paper on obstacles to industrial policy in DCs.

5. Some Concluding Remarks

Growth and industry and development, in the broadest sense, comprise a concerted and synergistic set of activities that are much more than the factors and variables exposed and discussed herein.⁹⁶ The factors and variables indicated, for every country and economy, have historical signatures that influence and moderate the extent to which they can be manipulated by policies and associated instruments. Perhaps these signatures provide clues as to why there is a persistent pattern to economic development and why economic change, that is capable of becoming systematised and socially embedded, is inherently a long-run problem.⁹⁷

According to Thorbecke (1999, pp. 1-2) (worth quoting in extenso)

“After a half century of development experience, there is a broad consensus regarding the major strategic elements of that (sic) contributed to poverty retreating faster in some regions or countries than in others. These elements are 1) a rapid poverty reduction has been much more likely to occur in countries and periods characterized by rapid economic growth; 2) an outward orientation and a strategy of export-led growth, based on labor intensive manufacturers is particularly conducive to poverty alleviation; 3) emphasizing agricultural and rural development at an early stage and encouraging the adoption of Green Revolution technologies contribute to productive employment creation and lower food prices thereby benefiting the poor; 4) investment in physical infrastructure and human capital which adds to the resource endowment of the poor unskilled households; 5) *institutions that provide the right set of incentives to farmers and entrepreneurs such as property rights and a reliable and transparent judicial system and, finally;* 6) social policies to promote health and education (particularly female primary education) and social capital as well as minimal safety nets to help protect not only the chronically poor but also those households caught in transient poverty.”

⁹⁶ The literature review herein of the leading articles has barely scratched the surface of the vast subject area – key word searches (economic development; developing countries) in the web page of the bookseller Amazon U. K. yield over 23,000 and over 10,000 book results, respectively.

⁹⁷ The long-run view indicates that new technologies reduce the transaction costs of distance and increase returns from transformational activities; “national policy choices may be critical determinants of the extent of international economic integration”; and social dislocation is associated with development [Remarks by Chairman Ben S. Bernanke at the Federal Reserve Bank of Kansas City 13th Annual Economic Symposium, “The New Economic Geography: Effects and Policy Implications”, 25-26/August/2006, Jackson Hole, Wyoming].

However, despite such a consensus, the persistence of a variety of gaps between the industrialised economies and the developing countries attests to the difficulties of policy craft and evokes questions about the workability of whatever may be designed in the name of policy advisory and policy consensus. What has been reviewed indicates that the various insights are, relatively speaking, unchanging -- they are not that new -- but warrant repeating. Nevertheless, it is up to leadership in each country to devise the means by which the factors and variables of growth, industry and development are crafted for the benefit and advancement of the majority of citizens (political difficulties and pressures and lack of resources notwithstanding).

To a degree, mainstream economic literature on growth shies away from confronting the difficulties associated with the managerial and social and cultural dimensions of development.⁹⁸ Geo-political economy and its influence on development factors and variables have remained outside the scope of this review – but clearly they matter too. Also the issue of the different dimensions of leadership -- as indispensable factors in economic development -- are not mentioned as often as perhaps they should in the economic literature of industrial development. Clearly, management and the managerial qualities of leadership in a developing country matter immensely [Chia (2005); te Velde (2001), Ayittey (1999, 1992)].

In this respect, while there may be several examples of development policies and trajectories which have ‘worked’, from a policy management and the managerial perspective, policy makers in many developing countries could benefit from first, closely examining the growth and industry and development policy experience of Singapore [Lee (1998, 2000)],⁹⁹ and secondly, taking on board the directions articulated by Jolly et al. (2004).¹⁰⁰

The contending policy advisory directions presented above, by and large, have dealt with some of the key ‘hard’ factors and variables of growth, industry and development. However, the long-

⁹⁸ Perhaps a notable exception is Mancur Olson (1971, 1984) who points out the difficulties in obtaining collective behaviour without well-considered selective incentives (and disincentives), and the consequences this has for national development.

⁹⁹ The experience of Singapore -- a once developing country -- is salutary. In 1960, the opinion of Albert Winsemius was anything but favourable. However, in recognising the quality that “her greatest asset is the high aptitude of her people to work” [See Kees Tamboer, 1996, Albert Winsemius: ‘Founding Father’ of Singapore, The International Institute for Asian Studies, IIASN, No. 9, Summer] policy advisory and recommendations, not very different from what has been captured in the literature review, were able to take root and produce the outstanding results of development of which almost everyone is now familiar.

¹⁰⁰ Jolly and his co-authors trace the mainstream development ideas in action over four development decades.

term transformation of a particular society is also dependent on 'soft' factors and variables. While these 'soft' factors and variables may not be as easily subject to formal econometric and mathematical analyses as they relate to qualities of the human condition, cultural dynamics and social exchange, they are nevertheless amenable to rigorous social science analysis.

Stewart (2006) points out that the dynamics involved in government reform of unregulated markets and the recent return to deregulated markets or increased liberalisation require social systems with the capacity and ability to mitigate the negative social consequences of structural adjustment. This in turn necessitates legislatures and political decision-making capable of handling the legal intricacies of social security.¹⁰¹ In many respects, the judicial capability and integrity of the legal system, reflects the 'soft' factor of social capital which encapsulates the notion of trust. Although difficult to model and analyse precisely, according to Barrett (1997) and Lall (2002), social capital and trust influence economic development. These social and behavioural factors affect the process and characteristics of structural adjustment in so far as, "the ability of a society to make progress with ideas and objects depends to an important degree in closing any trust gaps it acquires from difficult episodes in its history." [Barrett (1997, p. 560)] And social capital, which "comprises the ability of individuals in a group to form relationships of trust, cooperation and common purpose" [Lall (2002, p. 3)], is necessary to assist in overcoming fragmentation¹⁰² as well as the "pervasive market and institutional failures holding back the supply response of many developing economies (Stiglitz, 1996, 1998)" [op. cit. p. 3]. Trust is crucial to overcoming moral hazard, opportunism and the problems of information asymmetries in market failure, as well as principal-agent relations.¹⁰³

Trust (and increasing levels of trust) lead to: a lowering of sunk costs; reduced uncertainty; moderated downside risks of investment in economic activity (which cannot be performed in isolation); increased rates of learning through greater exchange of ideas; increased returns within path dependent processes;¹⁰⁴ closing of idea gaps; and increased transnational and cross-border

¹⁰¹ DCs are relatively weak in their legislatures and legislative processes. See Lippman and Emmert (1997) and the Failed States Index 2006 (The Fund for Peace), in particular, the variables "Criminalization and delegitimization of the State" and "Progressive deterioration of public services" which show the relative positions of the DCs and ICs with respect to capabilities which determine whether legislatures have integrity or not.

¹⁰² The extent of socio-linguistic, ethnographic, socio-cultural and, belief systems homogeneity or heterogeneity.

¹⁰³ However, not all social capital as defined by Lall (2002) is desirable as it can lead to exclusion and/or 'bads' through criminal activities.

¹⁰⁴ As history matters and conflict increases perceptions of downside risks so trust is required to dispel apprehensions that hold back recovery. In this sense, a recent example of trust at work is the South African Truth and Reconciliation process after 1994 (The Truth and Reconciliation Commission of South Africa Report, 21 March 2003).

flows of factor inputs [Barrett (1997, pp. 557-559)]. The challenges regarding trust as a policy variable are due to the fact that trust lies largely outside the control of policy makers, as there are mores and underlying moral and cultural, as well as ethical factors to trust. It is also that “trust is inherently more difficult to accumulate than either objects or ideas, because unlike investment in capital or knowledge, investment in healthy interpersonal relations requires coordination and is heavily conditioned by irreversible history.” [Barrett (1997, p. 564)] The development implications of trust therefore centre on the quality of leadership and governance, and crucially whether or not the State is kleptocratic.

A second major ‘soft’ factor or variable appears to be management,¹⁰⁵ specifically development management -- meaning deliberate public action and efforts for progress (over and above the historical change process) -- which is aimed not only at economic advancement but also perhaps more importantly at developing human potential.¹⁰⁶ In attempting to manipulate this factor, the policy maker is confronted with formulating coherent policy in the face of value-judgements and conflicting social aims (emanating from the needs of different groups and stakeholders).¹⁰⁷

A third major factor, which arguably has both ‘hard’ and ‘soft’ qualities, is education or human capital.¹⁰⁸ The ‘hard’ aspect has been dealt with earlier. The ‘soft’ feature -- human capital -- is intricately linked with social capital [Ostrom and Ahn (2003)], due to the networks, relationships and beliefs at work in society.

All these factors -- social capital, trust, management and human capital -- are intertwined and difficult to separate. However, with respect to trust, it seems that “ethnic homogeneity is associated with higher levels of human and infrastructure capital accumulation” [Easterly (2000, p. 24)]. This is reflected in the UNDP Human Development Index [UNDP (2005)]. And the thorny issue of culture’s consequences and influences [Hofstede (2001)] is yet another ‘soft’ factor in development, which seems to lie outside the immediate grasp of policy makers.¹⁰⁹

¹⁰⁵ Management differs across countries and the differences matter for productivity (see remarks by Chairman S. Bernanke at the MIT 2006 Commencement, 9 June 2006).

¹⁰⁶ In the sense of self-actualisation after Maslow’s (1943) needs of human motivation.

¹⁰⁷ The more fragmented a society the more difficult is the process of creating coherence (see Goldstone et al., 2005, Political Instability Task Force Phase V Findings, 2005, A Global Forecasting Model of Political Instability, for the relationship between diversity, social coherence and regime type).

¹⁰⁸ Strictly, these are not equivalent but education leads to human capital, which is a broader concept that encapsulates an aggregate social ability to learn and apply the results of learning [see Sianesi and van Reenen (2002)].

¹⁰⁹ The UN Research Institute for Social Development has a project theme “Culture and Development” under its programme area -- the social effects of globalisation -- which publishes extensively on culture and its relationship

When linked with the lexicon of the development business it seems to increase the distance between policy makers and policy (instruments) [Cornwall and Brock (2005)]. These soft issues of growth and industry and development raise considerable policy challenges for policy makers especially in DCs.

In terms of growth and productivity, much has been made of the performance of the United States economy in comparison with the European Union since the mid-1990s,¹¹⁰ and what the underlying factors and variables (from increased use of computing to better operations management) of that performance imply for other countries. The methodological and measurement difficulties of analysing economic performance have been alluded to. The extent of these difficulties is indicated by contrasting conclusions. Jorgensen et al. (2003, p. 468) conclude that “the US productivity revival is likely to remain intact for the intermediate future” while cautioning that “trend growth rates are subject to considerable uncertainty”. Despite their own earlier warning, Jorgensen et al. (2004, p. 1) conclude that, with respect to United States productivity “during the next decade, private sector productivity growth will continue at a rate of 2.6 per cent per year, a significant increase from their 2002 projection of 2.2 per cent growth.”

And yet in 2006 the Financial Times, in its analysis of United States economy,¹¹¹ wrote “the US productivity “miracle” — one of the defining economic developments of modern times — is looking a shade less miraculous following a series of revisions to recent historical data.” The latest estimates¹¹² for productivity growth range from 1.6 to 2.5 per cent per year for the United States economy — showing a lack of consensus on the issue of productivity measures.

to socio-economic development. See also UNESCO, 2001, *Recognising Culture: A Series of Briefing Papers on Culture and Development*, Paris: UNESCO.

¹¹⁰ See Gordon (2004), Karoly and Panis (2004), McKinsey Global Institute (2001), Jorgensen and Stiroh (2000).

¹¹¹ See, *Danger Ahead: Why the US economic juggernaut may face a lower speed limit*, Financial Times, 18 August 2006, p. 7.

¹¹² From Goldman Sachs, JP Morgan Chase and Morgan Stanley.

References

- Akinlo A. E., 2005, Impact of Macroeconomic Factors on Total Factor Productivity in Sub-Saharan African countries, WIDER-UNU, Research Paper No. 2005/39, June.
- Andersen P., Gruen D., 1995, Macroeconomic Policies and Growth, Reserve Bank of Australia Annual Conference, Vol. 1995.
- Aron J., 2000, Growth and institutions: A Review of the Evidence, The World Bank Research Observer, Vol. 15, No. 1, February, pp. 99-135.
- Arora V., Vamvakidis A., 2005, The Implications of South African Economic Growth for the Rest of Africa, IMF Working Paper No. WP/05/58, March.
- Artadi E. V., Sala-I-Martin X., 2003, The Economic Tragedy of the XXth Century: Growth in Africa, NBER WP No. 9865, July.
- Arthur W. B., Durlauf S., Lane D., (Eds), 1997, *The economy as An Evolving Complex System II*, Reading, Mass.: Addison-Wesley.
- Aschauer D. A., 1989a, Is public expenditure productive?, *Journal of Monetary Economics*, Vol. 23, No. 2., pp. 177-200.
- Aschauer D. A., 1989b, Public Investment and Productivity Growth in the Group of Seven, *Economic Perspectives*, Vol. 13, No. 5, pp. 17-25.
- Ayala F. A., Gallagher K. P., 2005, Preserving Policy Space for Sustainable Development, Commentary, International Institute for Sustainable Development, Canada, December.
- Ayittey G. B. N., 1992, *Africa Betrayed*, New York: St. Martin's Press.
- Ayittey G. B. N., 1999, *Africa Chaos*, London: Palgrave MacMillan.
- Ayittey G. B. N., 2005, *Africa Unchained*, London: Palgrave MacMillan.
- Bahmani-Oskooee M., Goswami G. G., 2006, Military Spending and the Black Market Premium in Developing Countries, *Review of Social Economy*, Vol. 64, No. 1, pp. 77-91, March.
- Baier S. L., Dwyer G. P., Tamura R., 2006, How Important are Capital and Total Factor Productivity for Economic Growth?, *Economic Enquiry*, Vol. 44, No. 1, pp. 23-49.
- Ball L., Sheridan N., 2003, Does Inflation Targeting Matter? NBER WP No. 9577, March.
- Barrett C. B., 1997, Idea Gaps, Object Gaps, and Trust gaps in Economic Development, *The Journal of Developing Areas*, Vol. 31, Summer, pp. 553-568.
- Barro R. J., 1997, *Determinants of Economic Growth: A Cross-Country Empirical Study*, Cambridge, Mass.: MIT Press.
- Bartels F. L., Pass C. L., 2000, *International Business: A Competitiveness Approach*, Singapore: Prentice Hall.

Bekaert G., Harvey C. H., Lundblad C., 2005, Growth Volatility and Financial Liberalization, Keynote Address at the Journal of International Money and Finance Conference on Emerging Markets Finance, 6 May 2005, City University, London, U.K.

Bernanke B.S., Woodford M., 2004, Eds., *The Inflation Targeting Debate*, NBER Studies in Business Cycles, Chicago: University of Chicago Press.

Bernstein H., Ed., 1973, *Underdevelopment and Development*, Middlessex: Penguin.

Bordo M. D., Rousseau P. L., 2006, Legal-Political Factors and the Historical Evolution of the Finance-Growth Link, NBER, WP No. 12035, February .

Bortolotti B., Fantini M., Siniscalco D., 2003, Privatisation Round The World: Evidence from Panel Data, *Journal of Public Economics*, Vol. 8, pp. 305-332.

Bose N., Haque M. W., 2005, Causality between public investment in transport and communication and economic growth, *Journal of Economic Development*, Vol. 30, No. 1, June, pp. 95-106.

Bourguignon F., 2002, The Growth Elasticity of Poverty Reduction: Explaining Heterogeneity Across Countries and Time Periods, CNRS, EHESS, ENS, World Bank, Working Paper No. 2002-03, February.

Braithwaite J., 2005, *Markets in Vice, Markets in Virtue*, Oxford: Oxford University Press.

Caballero R., Farhi E., Hammour M. L., 2004, Speculative Growth: Hints from the U.S. Economy, NBER WP No. 10518, May.

Card D., Freeman R. B., 2002, What Have Two Decades of British Economic Reform Delivered?, NBER WP No. 8801, February.

Chang Ha-Joon, 2002, *Kicking Away the Ladder: Development Strategy in Perspective*, London, Athem Press.

Chang Ha-Joon, 2005a, Policy Space in Historical Perspective – with Special Reference to Trade and Industrial Policies, 2005 Leontief Prize Award Statement, Tufts University.

Chang Ha-Joon, 2005b, Why Developing Countries Need Tariffs? How WTO NAMA Negotiations Could Deny Developing Countries' Right to A Future, South Centre and OXFAM, November, Geneva: South Centre.

Chang R., Kaltani L., Loayza N., 2005, Openness Can be Good for Growth: The Role of Policy Complementarities, NBER, WP No. 11787, November.

Chia S. Y., 2005, The Singapore Model of Industrial Policy: Past Evolution and Current thinking, Latin America/Caribbean and Asia/Pacific Economics and Business Association (LAEBA), 2nd Annual Meeting – Latin America and Asia: Strategic Policies for Global Competition, 28-29/November/2005, Buenos Aires, Argentina.

Chollet D., Goldgeier I. M., 2005-06, The Faulty Premises of The Next Marshall Plan, *The Washington Quarterly*, Vol. 29, No. 1, Winter, pp. 1-9.

- Christiansen H., 2004, ODA and Investment for Development: What Guidance can be drawn from Investment Climate Scoreboards, OECD WP on international investment 2004/5, Paris: OECD.
- Chrutchfield J. P., 1994, Is Anything Ever New? Considering Emergence, in *Complexity: Metaphors, Models, and Reality*, G. Gowan, D. Pines and D. Melzner, Eds., Redwood City: Addison-Wesley, pp. 479-497.
- Cornia G. A., 1991, Is Adjustment Conducive to Long-term Development? The Case of Africa in The 1980s, UNICEF Innocenti Research Centre, Innocenti Occasional papers Economic Policy Series, No. 91/41, Florence.
- Cornwall A., Brock K., 2005, Beyond Buzzwords: "Poverty Reduction", "Participation", and "Empowerment" in Development Policy, UN Research Institute for Social Development, Overarching Concerns, Programme Paper No. 10, November.
- Croce E., Khan M. S., 2000, Monetary Regimes and Inflation Targeting, *Finance & Development*, Vol. 37, No. 3, September.
- Das D. K., 2005, Globalization and The Anti-Globalization Lobby: Investigating Two Sides of One Veracity, NUS Lee Kuan Yew School of Public Policy, Singapore, 12 October.
- David P.A., 2001, Path Dependence, its Critics, and the Quest for 'Historical Economics', in *Evolution and Path Dependence in Economic Ideas*, P. Garrouste and S. Ionnides, Eds., Cheltenham: Edward Elgar, Chapter 2.
- De Soto H., *The Mystery of Capitalism: Why Capitalism Triumphs in The West and Fails Everywhere Else*, New York: Basic Books.
- Delong J. B., 2000, What Went Right in the 1990s? Sources of American and Prospects for World Economic Growth, Reserve Bank of Australia Annual Conference Volume 2000.
- Devezas T., Modelski G., 2003, Power Law Behaviour and World System Evolution: A Millennial Learning Process, *Technological Forecasting and Social Change*, Vol. 70, pp. 819-859.
- Dollar D., Kraay A., 2001, Trade, Growth and Poverty, World Bank, WPS 2615, June.
- Dornbusch R., Fischer S., 1993, Moderate inflation, World Bank Observer, Vol. 7, No. 1, January, pp. 1-44.
- Drucker P. F., 1967, *The Effective Executive*, New York: Harper Collins.
- Dunning J. H., 2005, Is Global Capitalism Morally Defensible?, *Contributions to Political Economy*, Vol. 24, No. 1, pp. 135-151.
- Dunning J. H., 2006, Towards A New Paradigm of Development: Implications for the Determinants of International Business, *Transnational Corporations*, Vol. 15, No. 1, pp. 173-227, April.
- Durlauf S. N., 1998, What Should Policy Makers Know About Economic Complexity? *The Washington Quarterly*, Vol. 21, No. 1, Winter, pp. 157-165.

Durlauf S. N., Quah D., 1998, The New Empirics of Growth, Centre for Economic Performance, Discussion Paper No. 384, January.

Easterly W., 2000, The Middle Class Consensus and Economic Development, World bank, Policy Research Working Paper, WPS No. 2346, 31/May/2000.

Easterly W., 2001, The Lost Decades: Developing Countries' stagnation in spite of policy reform 1980-1998, World Bank, February.

Easterly W., Levine R., 2001, Mimeo, It's not factor accumulation: Stylized facts and growth models, World Bank, World Bank Conference "What have we learned from a decade of empirical research on growth?", February.

Elliott L., 2003, The Lost Decade, Global Policy Forum (Guardian 9 July 2003).

Ezeala-Harrison F., 2005, On the Competing Notions of International Competitiveness, *Advances in Competitiveness Research*, Vol. 13, No. 1, pp. 80-87.

Fagerberg J., Srholec M., 2005, Catching up: What are the critical factors for success? Industrial Development Report 2005, Background Paper Series, UNIDO, Vienna.

Felipe J., 1997, Total Factor Productivity Growth in East Asia: A Critical Survey, Asian Development Bank, EDRC Report Series, No. 65, September.

Felipe J., 2001, Aggregate Production Functions and the Measurement of Infrastructure Productivity: A reassessment, *Eastern Economic Journal*, Vol. 27, No. 3, Summer, pp. 323-344.

Felipe J., Adams F. G., 2005, A Theory of Production – the estimation of the Cobb-Douglas function: A retrospective view, *Eastern Economic Journal*, Vol. 31, No. 3, Summer, pp. 427-445.

Felipe J., McCombie J. S. L., 2003, Some Methodological Problems with the Neoclassical Analysis of the East Asian miracle, *Cambridge Journal of Economics*, Vol. 27, No. 5, pp. 695-721.

Felipe J., McCombie J. S. L., 2005, How Sound are the Foundations of the Aggregate Production Function?, *Eastern Economic Journal*, Vol. 31, No. 3, Summer, pp. 467-488.

Flint G. D., 2000, What is the Meaning of Competitive Advantage?, *Advances in Competitiveness Research*, Vol. 8, No. 1, pp.121-129.

Fischer S., 1993, The Role of Macroeconomic Factors in Growth, NBER WP No. 4565, December.

Földvari P., van Zanden J. L., 2006, "Global Income Distribution and Convergence 1800-2000", Mimeo, Warwick University and IISH/Utrecht University.

Forstner H., Isaksson A., 2002, Productivity, Technology, and Efficiency: An Analysis of the World Technology Frontier when Memory is Infinite, SIN Working Paper Series, No. 7, Vienna: UNIDO.

Gallup J. L., Sachs J., 1999, Geography and Economic Development, in B. Pleskovic and J. E. Stiglitz, Eds., *Annual World Bank Conference on Development Economics 1998*, Washington D. C.: World Bank.

- George S., 1988, *A Fate Worse than Debt*, London: Penguin.
- Goldstone J. A., Bates R., Gurr T. R., Lustik M., Marshall M. G., Ulfelder J., Woodward M., 2005, A Global Forecasting Model of Political Stability, Political Instability Task Force, Phase V Findings, 3/September/2005.
- Gordon R.J., 2004, Two Centuries of Economic Growth: Europe Chasing the American Frontier, NBER WP No. 10662, August.
- Granger, C. W. J., 1969, Investigating Causal Relations by Econometric Models and Cross-Spectral Methods, *Econometrica*, Vol. 37, No. 3, July pp. 424-438.
- Gros D., 2006a, Foreign Investment in the US (I): Disappearing in a Black Hole?, Centre for European Policy Studies, Working Document, No. 242, April.
- Gros D., 2006b, Foreign Investment in the US (II): Being taken to the cleaners? Centre for European Policy Studies, Working Document, No. 243, April.
- Guest R., 2005, *The shackled continent: Africa's Past, Present and Future*, London: Pan.
- Hamre J. J., Sullivan G. R., 2002, Toward Post Conflict Reconstruction, *The Washington Quarterly*, Vol. 25, No. 4, Autumn, pp. 85-96.
- Hamwey R. M., 2005, Expanding National Policy Space for Development: Why The Multilateral Trading System Must Change, Working Paper 25, The South Centre, September.
- Hansen, H., Rand J., 2005, On the Causal Links between FDI and Growth in Developing Countries, UNU-WIDER, Research Paper No. 2005/31, June.
- Harris-White B., 2005, Poverty and Capitalism, Queen Elizabeth House, Working Paper Series No. QEHWPS 134, December, Oxford.
- Henderson D. R., 2006, Why Spending Has Got To Give, *Policy Review*, No. 136, April/May.
- Hoekman B., 2004, Operationalizing the Concept of Policy Space in The WTO: Beyond Special and Differential Treatment, World Bank, Third Annual Conference on Preparing the DOHA Development Round, European University Institute, 2-3 July.
- Hofstede G., 2001, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across nations*, 2nd Ed., London: Sage Publications Ltd.
- Hulten C. R., 2000, Total Factor Productivity: A Short Biography, NBER, WP No. 7471, January.
- IMF, 1999, Conference on Second Generation Reforms, Washington D.C., 8-9 November 1999
- Jeong H., Townsend R. M., 2004, Discovering the Sources of TFP Growth,; Occupational Choice, Capital Heterogeneity, and Financial Deepening, Econometric Society 2004 North American Summer Meeting, 17-20 June , Providence, Rhode Island, U. S.
- Jolly R., Emmerij L., Ghai D., Lapeyre F., 2004, *UN Contributions to Development Thinking and Practice*, Bloomington: Indiana University Press.

- Jones E., 2002, *The Record of Global Economic Development*, Cheltenham: Edward Elgar.
- Jorgensen D. W., Ho M. S., Stiroh K. J., 2003, Lessons from the US Growth Resurgence, *Journal of Policy Modelling*, Vol. 25, No. 5, pp. 453-470.
- Jorgensen D. W., Ho M. S., Stiroh K. J., 2004, Will the U.S. Productivity Resurgence Continue? *Current Issues in Economics and Finance*, Vol. 10, No. 13, pp. 1-7.
- Jorgensen D. W., Stiroh K. J., 2000, Raising the Speed Limit: U. S. Economic Growth in the Information Age, in *Brooking Papers on Economic Activity 2000: 1*, William C. Brainard and George L. Perry, Eds., Washington D.C.: Brookings Institution Press.
- Karoly L. A., Panis C. W. A., 2004, *The 21st Century at Work: Forces Shaping the Future Workforce and Workplace in the United States*, Santa Monica: Rand Corporation.
- Kaufmann D., 2005, Back to Basics - 10 Myths about Governance and Corruption, *Finance & Development*, Vol. 42, No. 3, September.
- Kiliçaslan Y., Taymaz E., 2006, The Structure of Structural Change and Growth, DRUID Conference on Knowledge, Innovation and Competitiveness: Dynamics of Firms, Networks, Regions and Institutions, 18-20 June 2006, Copenhagen, Denmark.
- Knowles S., 2006, Is Social Capital Part of the Institutions Continuum and is it a Deep Determinant of Development?, UNU-WIDER, Research Paper No. 2006/25.
- Kok W., 2004, *Facing the Challenge: The Lisbon Strategy for Growth and Employment*, Luxembourg: European Communities.
- Krempel L., Plümper T., 2003, Exploring the Dynamics of International Trade by combining the comparative advantages of Multivariate Statistics and Network Visualizations, *Journal of Social Structure*, Vol. 4, No. 1, pp. 1-22.
- Krugman P. R., 1996a, *The Self-organizing Economy*, Cambridge, Mass.: Blackwell Publishers.
- Krugman P. R., 1996b, How the Economy Organizes itself in Space: A survey of the New Economic Geography, Santa Fe Institute, WP No. 96-04-021.
- Krugman P., 1990, *The Age of Diminished Expectations*, Cambridge, Mass.: MIT Press.
- Krugman P., 1994, The Myth of Asia's Miracle, *Foreign Affairs*, Vol. 73, No. 6, Nov/Dec, pp. 62-78.
- Kwasnicki W., 1996, Innovation Regimes, Entry and Market Structure, *Journal of Evolutionary Economics*, Vol. 6, No. 4, December, pp. 375-409.
- Kwasnicki W., 2000, Centennial Waves of Socio-economic Development (Socio-Economic Development and Transformation in a Long-Term Perspective), Paper presented at *The Eighth International Joseph A. Schumpeter Society Conference - The Millennium Conference*: Manchester, U.K. 28th June – 1st July 2000.
- Lall S., 1992, Technological Capabilities and Industrialization, *World Development*, Vol. 20, No. 2, pp. 165-186, February.

- Lall S., 2002, *Social Capital and Industrial Transformation*, Queen Elizabeth House, Working Papers, QEHWPS No. 84, April.
- Lall S., 2003, *Industrial Success and Failure in a Globalizing World*, QEH Working Papers, QEHWPS, No. 102, February, Oxford.
- Lee K. Y., 1998, *The Singapore Story*, Singapore: Times Editions.
- Lee K. Y., 2000, *From Third World to First*, Singapore: Times Media.
- Levitt, K. P. 2006, *Reclaiming Policy Space for Equitable Economic Development*, The North South Institute, Ottawa, Canada, January.
- Lewis E., 2006, *Is technology raising demand for skills, or are skills raising demand for technology?* Business Review, Q2, Federal Reserve Bank of Philadelphia, pp. 17-25.
- Lewis W. W., 2004a, *The Power of Productivity: Wealth, Poverty, and the Threat to Global Stability*, Chicago: University of Chicago Press.
- Lewis W. W., 2004b *The Power of Productivity: Poor countries should put their consumers first*, *The McKinsey Quarterly*, No. 2.
- Lévy B., 2005, *Global Competition and Economic Development: Key Governance Issues*, *Competitiveness Review*, Vol. 15, No. 2, pp. 130-139.
- Lippman H., Emmert J., 1997, *Assisting Legislatures in Developing Countries: A Framework for Program Planning and Implementation*, USAID Program and operations Assessment Report No. 20, CIDE, PN-ACA-902, October.
- Lucas R. E., 1988, *On the Mechanics of Economic Development*, *Journal of Monetary Economics*, Vol. 22, pp. 3-42.
- Lynch Z., 2003, *Neurotechnology and Society (2010-2060)*, Nanotechnology, Biotechnology, Information technology and Cognitive Science (NBIC) Conference Proceedings, 5-7 February 2003, UCLA, California, U. S.
- Maddison A., 1993, *Explaining the Economic Performance of Nations 1820-1989*, Australian National University, *Working Paper in Economic History*, No. 174, ANU.
- Maslow A. H., 1943, *A Theory of Human Motivation*, *Psychological Review*, Vol. 50, pp. 370-396.
- Mauro P., 1995, *Corruption and Growth*, *Quarterly Journal of Economics*, Vol. 110, 3rd August, pp. 681-712
- McKinsey Global Institute, 2001, *US Productivity Growth 1995-2000*, Washington, D.C.: MGI
- Meredith M., 2005, *The State of Africa: A History of Fifty Years of Independence*, London: Free Press.
- North D., 1990, *Institutions, Institutional Change, and Economic Performance*, New York: Cambridge University Press.
- Olson M., 1971, *The Logic of Collective Action: Public Goods and the Theory of Groups*, Cambridge, Mass.: Harvard University Press.

- Olson M., 1984, *The Rise and Decline of Nations: Economic Growth, Stagflation and Social Rigidities*, Newhaven: Yale University Press.
- O'Rourke K., 2001, Globalization and Inequality: Historical trends, NBER, WP No. 8339, June.
- Ostrom E., Ahn T. K., Eds., 2003, *Foundations of Social Capital*, Cheltenham: Edward Elgar.
- Oxley L., Greasley D., 1998, Vector Autoregression, Cointegration and Causality: Testing for the Causes of the British Industrial Revolution, *Applied Economics*, Vol. 30, pp. 1387-1397.
- Pack H., 2000, Industrial Policy: Growth Elixir or Poison?; *The World Bank Research Observer*, Vol. 15, No. 1, February, pp. 47-67.
- Pack H., Saggi I., 2004, *The Case for Industrial Policy: A Critical Survey*, Dept. for International Development (DFID), U. K.
- Page S. E., 2006, Path Dependence, *Quarterly Journal of Political Science*, Vol. 1 No. 1, pp. 87-115.
- Parker D., Kirkpatrick C., 2005, Privatisation in Developing Countries: A Review of the Evidence and the Policy Lessons, *The Journal of Development Studies*, Vol. 41, No. 4, May, pp. 513-541.
- Persson T., Tabellini G., 2006a, Democratic Capital: The Nexus of Political and Economic Change, NBER, WP No. 12175, April.
- Persson T., Tabellini G., 2006b, Democracy and Development: The Devil in the Details, NBER, WP No. 11993, February.
- Pierson P., 2000, Increasing Returns, Path Dependence, and the Study of Politics, *The American Political Science Review*, Vol. 94, No. 2, June, pp. 251-267.
- Pissarides C.A., 2005, Structural Change: Implications of Policy and other Barriers, Oxford Institute for Economic Policy (OXONIA), Seminar Series, Oxford, 10 May 2005
- Porter M. E., 1990, *The Competitive Advantage of Nations*, London: MacMillan.
- Razin A., 2002, FDI Contribution to Capital Flows and Investment in Capacity, NBER WP No. 9204, September.
- Redding G., 2005, The Thick Description and Comparison of Societal Systems of Capitalism, *Journal of International Business Studies*, Vol. 36, No. 2, pp. 123-155, March.
- Redding S., Venables A. J., 2004, Economic Geography and International Inequality, *Journal of International Economics*, Vol. 62, No. 1, pp. 53-82.
- Rodrik D., 1996, Understanding Economic Policy Reform, *Journal of Economic Literature*, Vol. 34, March, pp. 9-41.
- Rodrik D., 2004, Rethinking Growth Strategies, UNU-WIDER Annual Lecture 8, Stockholm, Sweden.
- Rodrik D., Subramanian A., Trebbi F., 2002, Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development, NBER, WP No. 9305, November.

- Rogers M., 2003, A Survey of Economic Growth, *Economic Record*, Vol. 79, No. 244, pp. 112-135.
- Romer P., 1990, Endogenous Technological Change, *Journal of Political Economy*, Vol. 98, S71-S105.
- Rosenthal S. S., Strange W. C., 2004, Evidence on the Nature and Sources of Agglomeration Economies, in V. Henderson and J. Thisse, Eds., *Handbook of Urban and Regional Economics*, Vol. 4, Amsterdam: North Holland.
- Sachs J. D., 2001, Tropical Underdevelopment, NBER, WP No. 8119, February
- Sarel M., 1996, Growth in East Asia: What we can and what we cannot infer, *Economic Issues* 1, Washington, D.C.: IMF.
- Schaefer B. D., 2006, How economic freedom is central to development in Sub-Saharan Africa, Heritage Lecture #922, Heritage Foundation.
- Shafaeddin M. 1998, How did Developed Countries Industrialize? The History of Trade and Industrial Policy – the Cases of Great Britain and the USA, UNCTAD Discussion Papers, No. 139, December, Geneva: UNCTAD.
- Sheffrin S. M., Triest R. I., 1995, A new approach to causality and economic growth, Federal Reserve Bank of Boston, WPS, No. 95-12, December.
- Sianesi B., van Reenen J., 2002, The Returns to Education: A Review of the Empirical Macroeconomic Literature, The Institute for Fiscal Studies, WP 02/05, March.
- Spero J. E., 1977, *The Politics of International Economic Relations*, London: George Allen & Unwin.
- Stewart F., 2006, Do we need a new 'Great Transformation'? Is one likely?, Queen Elizabeth House, Working Papers, QEHWPS No. 136, February.
- Stiglitz J. E., 1996, Some Lessons from the East Asian Miracle, *The World Bank Research Observer*, Vol. 11, No. 2, August, pp. 151-178.
- Stiglitz J. E., 1998, Toward a New Paradigm for Development: Strategies, Policies and Processes, Geneva: UNCTAD, Prebisch Lecture, reprinted in Ha-Joon Chang, Ed., *The Rebel Within: Joseph Stiglitz and The World Bank*, London: Anthem World Economics, 2001, pp. 57-93.
- Stiglitz, J. E., 2002, *Globalization and its Discontents*, London: Penguin.
- Tahari A., Ghura D., Akitoby B., Aka E. B., 2004, Sources of Growth in Sub-Saharan Africa, IMF Working Paper, No. WP/04/76, September.
- Te Velde D. W., 2001, Policies towards Foreign Direct Investment in Developing Countries: Emerging Best Practices and Outstanding Issues, ODJ, March.
- Thangavelu S., Wei Y. Y., 2006, Aging (sic) and Economic Growth: Issues Relevant to Singapore, Singapore Centre for Applied and Policy Economics (SCAPE), Working Paper Series, No. 2006/13, July.

Thorbecke E., 1999, Evaluation of Poverty-alleviation of Alternative Development Strategies and Adjustment Responses in Africa and Asia, Paper for the 1999 World Bank Conference on Evaluation and Poverty Reduction, 14-15/June/1999, Washington, D. C.

Tsangarides C.G., 2005, Growth Empirics under Model Uncertainty: Is Africa Different? IMF Working Paper WP/05/18, January.

UNCTAD, 2006, The Least Developed Countries Report 2006, Geneva: UNCTAD.

UNDP, 2005, Human Development Report 2005, New York: United Nations.

Van Reenen J., 2005, Policies to Boost UK Productivity, Oxford Institute for Economic Policy (OXONIA), Seminar Series, Oxford, 2 February 2005.

Venables A. J., 2006, Shifts in Economic Geography and Their Causes, Paper for the 2006 Federal Reserve Bank of Kansas City Annual Economic Symposium, "The New Economic Geography: Effects and Policy Implications", Jackson Hole, Wyoming, 25-26/August/2006.

Westphal L.E., 2005, Reflections on Obstacles to meaningful Industrial Policy in Developing Countries, QEH 50th Anniversary Conference on New Development Threats and Promises, Session C.6, Globalization, Technology, Trade and Industrialization, 4-5 July 2005, Oxford, U. K.

World Bank, 2005, Doing Business in 2005: Removing Obstacles to Growth, Washington, D.C.: World Bank.

World Bank, 2006, Doing Business in 2006: Creating Jobs, Washington, D.C.: World Bank.

Yang Y., Gupta S., 2005, Regional Trade Arrangements in Africa: Past performance and the way forward, IMF Working Paper, No. WP/05/36, February.

Young A., 1994, The Tyranny of Numbers: Confronting the Statistical Realities of the East Asia Growth Experience, NBER WP, No. 4680, March.



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