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GLOBALIZATION AND ECON0MIC CONVERGENCE: AN ASSESSMENT

Robert Rowthorn &
Richard Kozul-Wright

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DISCUSSION PAPERS

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GLOBALIZATION AND ECONOMIC CONVERGENCE: AN ASSESSMENT

Robert Rowthorn [*] ***and Richard Kozul Wright*** [**]

This paper offers a critical survey of a strong globalization thesis that predicts a direct link from more open trade and investment regimes to faster economic growth in developing countries and income convergence across the global economy. Its examination of recent experience suggests that while in a more open and integrated world economy both the quantity and the quality of investment are influenced by external factors the forces driving capital accumulation retain strong domestic roots and remain open to the influence of various types of policy initiative.

INTRODUCTION

Since the late 1970s there has been a fundamental change in economic policy, beginning in the industrial economies, then in developing countries and finally - and most dramaticall - in the former socialist economies. Emphasis has been placed on a minimal role for the state, greater reliance on market forces, and increased openness and integration into the world economy. Technological advances have on some accounts already eroded longstanding geographical, ideological and political obstacles to cross-border transactions, and transnational firms have been identified as the new engines of growth and development. These same forces are expected to generate faster economic growth, particularly for poorer countries, leading to convergence of incomes worldwide. From this perspective, policies still matter, but only to the extent that *dirigiste* economic regimes resist implementing rapid and comprehensive trade and financial liberalization along with the deregulation of domestic activity needed to take full advantage of the new growth opportunities.

Among the most ardent supporters of this strong globalization thesis have been practitioners of the dismal science. Indeed, while a good deal of the globalization debate has been characterized by loose and speculative discourse, conventional economists have been able to establish an authoritative voice by introducing a tighter analytical framework and a mass of empirical evidence. Their analysis of globalization has centred on the greater mobility of capital and has done much to revive the flagging intellectual fortunes of neo-classical growth and trade theory.

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This paper offers a critical survey of some of the analytical and empirical arguments linking globalization and convergence, and takes issue with the claim that capitalist economic development has entered a new phase in which the domestic determinants of growth have become subordinate to international economic forces. In the absence of a spontaneous link from greater openness to faster economic growth, the notion of a policy agenda centred simply on the elimination of the state from economic affairs is rejected.

I. GLOBALIZATION

Over the past two decades growing cross-border linkages have exerted powerful influences on the shape and direction of the world economy (table 1). From 1973 to 1994, the volume of world exports grew at an average annual rate of around 4.5 per cent, compared with 3.1 per cent for world GDP, but with a marked acceleration after 1985 to 6.7 per cent. As a consequence, world exports of goods and services in relation to world output rose from 12.1 per cent to 16.7 per cent over this period.

Table 1

The growth of international economic activity, 1964-1994

	Export volume	*World FDI flows*	*International bank loans*	*World real GDP*
1964-1973	9.2	--	34.0	4.6
1973-1980	4.6	14.8	26.7	3.6
l980-1985	2.4	4.9	12.0	2.6
1985-1994	6.7	14.3	12.0	3.2

Source: *IMF* (various years); *BIS* (various years).

Notwithstanding, international trade has not been the main catalyst for accelerating global economic integration. That role has been played by international capital. Cross-border financial flows have risen spectacularly over the past two decades, and the scope and depth of financial integration has far outpaced that in goods markets. The abandonment of fixed exchange rates in the early 1970s, along with a gradual loosening of capital controls opened the flood gates to short-term capital flows; average

daily trade in the global foreign exchange market rose from $15 billion in 1973 to $880 billion in 1992 and over $1,300 billion in 1995. From 1980 to 1993, cross-border sales and purchases of financial assets rose from less than 10 per cent of GDP in the United States, Germany and Japan to 135, 170 and 80 per cent, respectively. International banking has also, over this period, grown considerably faster than world trade or output.

Direct investment flows have also made a significant contribution to global economic integration in the sphere of production, and at a pace considerably faster than trade in goods and services. During the 1970s, annual flows of foreign direct investment (FDI) averaged $27.5 billion, rising to $50 billion in the first half of the 1980s and to $166 billion in the second half. Following a dip in the early 1990s, they reached $318 billion in 1995.

While there is evidence that some of these flows have accelerated since the mid-1970s, it is unlikely that by themselves they constitute a structural break in the evolution of the world economy. Indeed, as may be seen from table 1, international economic integration was just as rapid in the 1960s and early 1970s. Consequently, observers have pointed to more qualitative changes in the nature of international trade and capital flows than was previously associated with the process of economic integration. These include: the rise in manufactured exports from low-wage to high-wage economies and the growth of intra-firm trade accompanying a finer geographical separation of production activities;[1] a shift in the composition of private capital flows from bank-lending to equity and portfolio investments, particularly in respect of capital flows to developing countries, along with a tremendous pace of financial innovation designed to reduce investors' exposure to credit, liquidity and exchange risk; a steady shift towards FDI in services, which now accounts for well over half of the total stock of FDI and an increase in the flow to developing countries (accounting for over one third of total inflows in 1993-1996), much of it linked to export-oriented manufacturing.[2]

These more qualitative changes in the pattern of economic flows have been associated with institutional changes at the microeconomic and macroeconomic levels that are said to be contributing to a much wider and deeper process of economic integration. The triumph of the market over the state - exemplified by the collapse of communism in Eastern Europe - has, from this perspective, not only widened the geographical scope of the international economy but has, by expanding the entry and exit options of capital, fundamentally altered the interplay of political and economic forces, thus greatly diminishing the independence and influence of purely domestic actors. Secondly, capital has become a much more complex factor of production. A more elaborate system of intra-firm flows of goods and

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[1] Paul Rayment has reminded us, however, that intra-firm trade was probably already high in the 1960s in the context of North-North intra-industry trade, although statistical limits make it difficult to give a precise figure.

[2] On the changing nature of international trade, see Krugman (1996); on trends in financial flows see Felix (1996), Kregel (1994) and Akyüz (1995); FDI trends are fully documented in UNCTAD's *World Investment Reports*.

services, as well as inter-firm alliances of various kinds, has emerged, giving rise to a more complex pattern of specialization linked to a new system of international production. Moreover, the importance of human capital is seen to be of growing importance in this system. Finally, the triumph of market forces has been accompanied by an emerging liberal international regulatory framework, which has further restrained the influence of domestic policy actions (e.g. Mankiw, 1995; Lawrence, 1993; Cable, 1995).

Strictly speaking, these pressures should culminate in a truly *global economy*, where all firms and financial institutions operate transnationally - i.e. beyond the confines of national boundaries. In such a world goods, factors of production and financial assets would be almost perfect substitutes everywhere, and it would no longer be possible to consider nation states as distinct economic identities with autonomous decision-making power in the pursuit of national objectives. Those public goods that are needed to maintain an open-market system, such as secure property rights and a stable monetary system, would become a global responsibility. Overall economic performance would depend upon the response of firms to global market incentives and the effectiveness of global regulations.

The political, social and moral dimensions of such a global economy are beginning to provoke considerable debate and controversy.[3] Economists have reacted to descriptions of conflictual global market forces with a mix of disdain and indifference and, while such responses have not always been unwarranted, they have done little to help generate a more constructive dialogue (Rodrik, 1997). In fact, the world economy is still a very long way from this situation. A more apt description of the current situation is global economic interdependence, where cross-border linkages between markets and among production and financial activities are now so strong that economic developments in any one country are influenced to a significant degree by policies and developments outside its boundaries. However, the extent and nature of that influence continue to depend upon a country's resource endowments, institutional arrangements and domestic policy choices.

The prospects of this interdependent world economy over the medium to longer term will hinge on its ability to deliver not only a faster pace of economic growth but also a level of prosperity which is widely shared by different countries and classes. To date, conventional economic analysis has been able to monopolize the discussion on global prospects with a forceful assertion of the strong and spontaneous links between greater openness, faster growth, and economic convergence. The next chapter will consider this case in greater detail.

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[3] See Greider (1997), Rodrik (1997), Williamson (1997) and Pfaff (1997). In this context, various authors are rediscovering the seminal work of Karl Polanyi (1944).

II. ECONOMIC CONVERGENCE: THE LIMITS OF CONVENTIONAL WISDOM

In its analysis of contemporary globalization trends, conventional economics has drawn upon - and in important respects refined - two of its most distinguished tools of analysis; trade and growth theory. The classical theory of international trade was elaborated by David Ricardo some 200 years ago and embellished a century later by Eli Hecksher and Bertil Ohlin. This theory teaches that under free trade countries will specialize in those activities in which they have a comparative advantage. Other things being equal, a country which is rich in a particular resource will export products whose production utilizes this resource intensively and import other products. The resulting efficiency gains lead to a higher level of global welfare as well as to optimal resource use for each individual economy. Moreover, according to traditional trade theory, even in the absence of capital and labour mobility, convergence of factor prices should accompany greater openness; workers of comparable skill will be paid the same in the developed and developing worlds and owners of capital will likewise obtain the same rate of return on their investments.

Despite its vaulted textbook status, the Hecksher-Ohlin model has long been subject to theoretical and empirical criticisms. Its underlying assumptions, in particular those of a common technology set available to all producers, perfect competition and constant returns to scale in production activities, have been longstanding targets (Kaldor, 1981). But ever since Wassily Leontief's seminal work on the factor content of United States trade and with the rising share of intra-industry trade in total world trade, empirical studies of trade flows have been against orthodoxy.[4] These theoretical and empirical challenges have extended to the idea of factor price convergence (Bhagwati, 1994).

Salvaging traditional trade theory has taken it in a direction consistent with globalization trends. In particular, the increasing international mobility of capital has reduced the importance of differences in the level of capital stock in determining a country's comparative advantage, while the growth of trade in goods with high knowledge and skill content has increased the importance of relative endowments of skilled and unskilled labour. Clearly, at any given time, countries vary with respect to their endowment of educated labour, and the logic of classical theory would teach that countries which are well-endowed with human and physical capital will specialize in goods and services which utilize them intensively, while those which are badly endowed will specialize in other types of production. Recent trends in the world economy have been seen to accord well with this conclusion, particularly the rise of North-South trade. Moreover, factor price convergence has resurfaced as a key feature of globalization (Wood, 1994; Williamson, 1997).

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[4] An extensive historical literature has also pointed out that successful development experiences over the last 200 years do not conform to the advice of free traders. See Panic (1988), Bairoch (1993), and Bairoch and Kozul-Wright (1997).

This revised Hecksher-Ohlin model has also opened more direct links to the neo-classical growth theory, missing from earlier expositions. An original growth model developed by Robert Solow and Trevor Swan associated with a well-behaved neo-classical production function generated a steady state on which all countries would converge in the long run, assuming that the savings rate, population growth and technologies were the same everywhere. In the transition, growth would be faster in poorer countries than in the richer economies because capital scarcity in the former would generate a higher rate of return to capital, a faster pace of capital accumulation, and consequently a faster per capita growth rate. However, an extensive literature on growth accounting failed to uncover the predicted convergence in per capita incomes, and subsequent research on economic growth focused more on differences in growth performance across countries than on similarities.

A notable feature of this first generation of neo-classical growth models was their abstraction from international economic factors and consequently from trade theory.[5] However, a renewed emphasis on capital mobility has helped cement a marriage between these two branches of conventional economic analysis. This marriage has been reinforced by an extensive body of new comparative empirical data (Summers and Heston, 1988).

The heart of this union has been a renewed emphasis on economic convergence. The chosen methodology has been the testing of explanatory variables in cross-sectional regression analysis, where rates of economic growth are the independent variable and several variables are introduced to control for the steady state. This new convergence literature is built around the distinction between beta convergence and sigma convergence (Sala-i-Martin, 1996). Beta convergence occurs when there is an inverse relationship between the initial value of some variable (per capita income, productivity, etc.) and its future growth.[6] Thus, areas with a low initial value of this variable have a tendency to grow relatively fast and catch up with more advanced areas. Sigma convergence is not concerned with catching-up *per se* or with the advantages of backwardness, but with the dispersion of per capita income, or some related variable, and with the evolution of dispersion through time. The dispersion of a variable across areas is typically measured using the standard deviation of the log or the coefficient of variation (standard deviation divided by the mean). Sigma convergence is said to occur when the relevant measure declines through time. Note that an eventual stability in dispersion is consistent with continued mobility in the ranking of individuals, since individuals may be changing places without

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[5] A more complex description of the interlinkages between technology, trade and investment did emerge from efforts to reduce the empirical residual discovered by growth empirics. But the idea that catching up by developing countries was an uncertain and far from spontaneous process was, to a large extent, inconsistent with conventional analysis. See Gerschenkron (1962), Abramovitz (1986), Maddison (1982) and Freeman (1993).

[6] There is considerable room for choice of variables in convergence studies. Some of these studies look at real GDP per head of population, while others focus on real wages, GDP per worker or working hour, or total factor productivity; some look at the whole economy, others at a subsector of the economy, such as manufacturing or services. See Baumol *et al.* (1989) for a useful discussion of convergence measures.

affecting the overall distribution of incomes. Beta convergence although a necessary, is not sufficient reason for sigma convergence. Beta convergence may produce quite a strong regression toward the mean, but this may be offset by a flow of random shocks which maintain dispersion at a constant level.

In the light of the limitations of earlier growth models, two types of beta convergence have been distinguished: absolute and conditional. Under absolute convergence, catching-up is observed in reality, so that backward areas actually do grow faster on average than more advanced ones simply because they are poorer. However, as noted earlier, this result rested on a rather narrow set of determinants of the steady state. Broadening that set and allowing economies to have different steady states suggests that backward areas still have the potential to grow faster than advanced areas, but this potential will only be realized if they satisfy certain conditions. Where these conditions are not satisfied, then the growth rate in backward areas may be as slow, or even slower than in advanced areas. Moreover, because economies converge on their own steady state there is no assumption about a final state where all income levels are identical.

Testing these new trade and growth theories has generated two empirical findings which have been dominating recent discussions of globalization. The first is the apparent uniformity of conditional convergence rates. Although authors differ widely in the variables they include, the general result seems to be that, controlling for other factors, convergence in per capita income occurs at around 2 per cent a year. Table 2 reports the results obtained by Sala-i-Martin for a variety of countries and regions. A second finding has suggested that among all the possible conditioning variables the most fundamental is how open an economy is to the world economy. A recent and well-known paper in this tradition is by Sachs and Warner (1995a), who use a five point system to classify countries into "open" and "closed".

After controlling for other variables and initial income levels, they find that open economies grew faster than closed ones. They also find strong evidence of beta convergence (catching up) among open economies, but no sign of it among closed ones. On the basis of these findings, they advocate that countries should deregulate their economies, roll back government intervention and comprehensively liberalize their external economic relations.[7]

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[7] See Sachs and Warner (1995a) and World Bank (1996). This policy has recently been strongly promoted as a solution to economic stagnation in Africa. See, for example, Collier and Gunnin (1997).

Table 2

Estimates of the speeds of $-convergence for a variety of data sets

	Long-run single regression[a]		*Panel estimates of conditional convergence*[a]
	Absolute convergence (1)	*Conditional convergence (2)*	*(3)*
World (110 countries) - 1960-1990	-0.004 (0.002)	0.013 (0.004)	0.025 (0.0028)
OECD countries - 1960-1990	0.014 (0.003)	0.029 (0.008)	-- --
United States (48 states) - 1880-1990	0.021 (0.0003)	0.017 (0.002)	0.022 (0.002)
Japan (47 prefectures) - 955-1990	0.019 (0.003)	0.019 (0.004)	0.031 (0.004)
Europe (total 90 regions) - 1950-1990	0.015 (0.002)	0.015 (0.002)	0.018 (0.003)
- Germany (11 regions)	0.014 (0.006)	0.014 (0.005)	0.016 (0.006)
- United Kingdom (11 regions)	0.020 (0.008)	0.030 (0.007)	0.029 (0.009)
- France (21 regions)	0.016 (0.005)	0.016 (0.004)	0.015 (0.003)
- Italy (20 regions)	0.010 (0.003)	0.010 (0.003)	0.016 (0.003)
- Spain (17 regions)	0.021 (0.005)	0.023 (0.007)	0.019 (0.005)

Source: Sala-i-Martin (1996).

a The regressions use non-linear least squares to estimate equations of the form:

$$(1/T)\ \ln(y_{it}/y_{i,t-T}) = a - [\ln(y_{i,t-T}\ ](1/T)$$

+ other variables. Where $y_{i,\,t-T}$ is the *per capita* income in country or region *i* at the beginning of the interval divided by the overall CPI. *T* is the length of the interval; "other variables" are regional dummies and sectoral variables holding constant temporary shocks, that may affect the performance of a region in a manner correlated with the initial level of income.

Each column contains two numbers. The first one is the estimate of **$**. Underneath it, in parentheses, its standard error. The constant, regional dummies and/or structural variables are not reported in the table. The coefficients for Europe total include one dummy for each of the eight countries. Columns 1 and 2 report the value of **$** estimated from a single cross-section using the longest available data; column 1 reports the coefficient when the only variable held constant is the initial level of income; column 2 reports the value of **$** estimated when additional variables are held constant; column 3 reports the panel estimates when all the subperiods are assumed to have the same coefficient **$**. This estimation allows for time effects. For most countries, the restriction of **$** being constant over the subperiods cannot be rejected (see Barro and Sala-i-Martin, 1995).

Despite the impressive display of empirical techniques, the idea of conditional convergence has been challenged on various methodological grounds. The finding that poorer countries tend to grow faster than rich economies may be perfectly correct, and it may also indicate some kind of causal relationship whereby poor countries have a genuine growth advantage over rich ones. However, the existence of such beta convergence does not automatically imply that international dispersion of per capita incomes of productivity levels will fall in the course of time.[8] If the initial dispersion is very large, the existence of beta convergence may imply a future reduction in dispersion and hence a period of sigma convergence. But this will not continue indefinitely, since individual countries are subject to continuing stochastic shocks, whose effect is to increase dispersion. There will be an eventual equilibrium in which beta convergence (regression towards the mean) is offset by continuing random variation, and the distribution of per capita incomes will stabilize. Sigma convergence will then come to a halt. This point is now well understood, and it is widely recognized that beta convergence is a necessary but not sufficient condition for sigma convergence.[9]

A second criticism of the concept of conditional convergence dismisses it as vacuous, on the grounds that ascertaining how far each country is from its own steady state ignores the more fundamental question why some countries are rich and some are poor and has consequently failed to grasp the long-run determinants of economic success (e.g. Quah, 1996a, 1996b; Hall and Jones, 1997). Closely related to this is the role of technological progress, which has been identified as the Achilles heel of the new convergence literature because - and much as in earlier growth models - technology is seen as a public good freely available and useable everywhere, making it an exogenous influence on the growth process (e.g. Romer, 1995; Bernard and Jones, 1996).

But perhaps of even greater significance to the immediate debate on globalization are serious doubts about the empirical evidence on fast growth and convergence with the world economy becoming more open. As table 3 suggests, there has been a persistent slowing down of the world economy as it has become more closely integrated over the past two decades. Moreover, this slowdown in growth has been accompanied by increased volatility of growth performance (Felix, 1996). Perhaps most significantly, the pattern of economic growth since the late 1970s has coincided with ever larger income gaps not only across countries but also within them.[10]

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[8] This is know as "Galton's Fallacy" (see Friedman, 1992, and Quah, 1993). Galton found that the sons of tall men were on average likely to be shorter than their fathers, from which he inferred that the proportion of tall men in the population would decline and hence there would be a shortage of men suitable for army service. This inference ignores the fact that some relatively short men will have tall sons, so that the pool of tall men will be constantly replenished by recruitment from below. Thus, regression towards the mean, which tends to reduce dispersion, will be accompanied by random variation, which tends to increase dispersion. In equilibrium, these two forces will exactly offset each other, so the distribution of heights will remain constant.

[9] For a good discussion of these issues, see Bliss (1997).

[10] For the evidence of growing inequalities within countries, see UNCTAD (1997, Part II, chapter 3).

Table 3

The slowdown of growth in the world economy[a]

	Number of countries	
	1972-1981	*1982-1991*
Decadal growth higher than in 1960-1971	18	10
Decadal growth lower than in 1960-1971	39	47
Monotonically rising	--	4
Monotonically falling	--	17
Negative growth (3 in the 1960s)	5	17

Source: Felix (1996, table 2)

a Fifty-seven countries, including all OECD, Asian and Latin American economies whose 1983 GDP was above $10 billion, all Middle Eastern/North African economies with GDPs above $7.5 billion, and all sub-Saharan African economies with GDPs above $5billion.

On a global level, the evidence on dispersion is remarkably consistent and clear. The international dispersion of per capita incomes has been increasing rapidly for more than a century. The same is presumably true for productivity, although comprehensive evidence on this does not seem to be available. In an interesting study for the World Bank, Pritchett (1995) estimates what per capita incomes in a wide range of countries were in 1870 and how they have altered. He finds that the ratio of GDP per capita of the richest to the poorest country rose from 8.7 in 1870 to 38.1 in 1960 and 51.6 in 1985. The standard deviation of log per capita income, which was between 0.513 and 0.636 in 1870, rose from 0.867 in 1960 to 1.025 in 1985. Equally telling, of the 98 developing countries for which data are available, 40 countries had income levels of over 20 per cent of the average per capita income of the G-7 countries in 1960 and 14 countries over 40 per cent. By 1990, the figures had fallen to 29 and 11, respectively. More generally, failure to catch up in this period is confirmed by the fact that the number of developing countries with per capita incomes over 80 per cent, 60 per cent and 40 per cent of the average per capita income of the G-7 countries all decreased between 1960 and 1990. There is little evidence to suggest that this trend has been reversed in the past decade or so. Indeed, if anything, the evidence points to a strengthening of the polarization forces (IMF, 1997).

Nor is more detailed examination of the historical evidence linking globalization and convergence very convincing. This is particularly true for the period before 1913, which has recently been revisited in search of lessons for the contemporary era (IMF, 1997). One recent study examining this period found mixed results: convergence in a core of dynamic economies driven by catch-up growth in a small

group of Western European late-industrializing economies was accompanied by divergence for the world economy generally as well as for Continental Europe (UNCTAD, 1997).

Growing dispersion over the past four decades has been most noticeable in the developing world, accompanied by a significant increase in the absolute income gap between the richest and poorest developing countries and a near doubling of the ratio of maximum to minimum per capita.[11] Moreover, there were considerably fewer developing countries with income levels ranging from 40 per cent to 80 per cent of the income of the richest developing country in 1995 than in 1965, and a much larger number of countries had fallen by 195 into the category of the poorest 20 per cent. These forces of polarization appear to have intensified in the early 1980s (IMF, 1997, table 17).

Even among the "convergence club" of OECD countries the picture is rather more mixed than is often assumed. Since 1870 dispersion in the OECD as a whole has been falling steadily, although relative to the United States the position of many countries has fluctuated a great deal in terms of both labour productivity and per capita income (table 4).[12] Prior to 1950, the United States surged ahead of Europe, but much of this gap was closed during the long post-war boom.

The most striking example of this has been that of Japan, whose per capita income is now similar to that of Switzerland and only a few per cent behind the United States. However, evidence since the mid-1970s appears more mixed.[13] One striking feature of the recent period has been the failure of most of the poorer countries of the European Union (EU) to sustain the impressive performance they exhibited during the 1960s. With the exception of Ireland, which has grown rapidly over the past decade, per capita income in these countries is much the same now relative to the EU average as it was 20 years ago (figure 1). Similarly, while Barro and Sala-i-Martin (1995) show that within most OECD countries there has been a massive and prolonged reduction in regional disparities, they also show that this process of convergence has come to a halt in recent times and in some cases has even gone into reverse. Finally, across a broad range of industries, disparities in labour productivity within the European Union diminished during the 1970s, but have widened again since then (table 5).[14]

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[11] See UNCTAD (1997). On the other hand, some poor countries have experienced fast growth, including such populous countries such as China and Indonesia. This should be borne in mind when evaluating the finding that global dispersion has been increasing rapidly. Such a finding may be biased by the experience of small countries and, if weighted by population increase, the conclusion might be different.

[12] Among the first authors to examine beta convergence was Baumol (1986), using data on 16 developed countries over the period 1870-1979. His method was to regress the annual growth rate of labour productivity against the logarithm of the initial value of this variable. He found a highly significant negative relationship, indicating that on average countries with initially low productivity grew faster. These findings were criticized by De Long (1988) on grounds of sample bias and measurement error. Such criticisms were accepted in principle by Baumol, but later studies by Baumol *et al.* (1989) and others, who avoid the pitfalls identified by De Long but have still found strong evidence of beta convergence in the relatively advanced economies. This has given rise to the idea that a certain threshold had to be crossed to become a member of the convergence club.

[13] See Levine and Renelt (1992); Dollar and Wolff (1993); O'Leary (1995).

[14] It is interesting to note that, despite growing dispersion within individual sectors, the dispersion in economy-wide productivity did not increase in the European Union during the 1980s. This was because structural shifts from low to high productivity sectors offset lagging performance in individual sectors (see Rowthorn, 1992).

Table 4

GDP per capita for 16 currently developed countries
(Percentage of US level)

	1870	*1910*	*1950*	*1970*	*1990*
Australia	140	102	69	76	74
Austria	64	56	33	59	71
Belgium	90	69		64	73
Canada	59	70	71	80	93
Denmark	69	63	61	75	77
Finland	42	34	40	61	77
France	70	53	49	72	78
Germany (West)	55	50	41	72	78
Italy	54	42	33	62	72
Japan	27[a]	24	19	64	88
Netherlands	..	65	55	73	72
Norway	53	41	53	65	84
Sweden	62	55	66	84	81
Switzerland	..	66	76	95	86
United Kingdom	120	86	66	70	74
United States	100	100	100	100	100

Source: Maddison (1991)
a 1890

Figure 1

GDP per capita of EU periphery (EU-15 = 100)

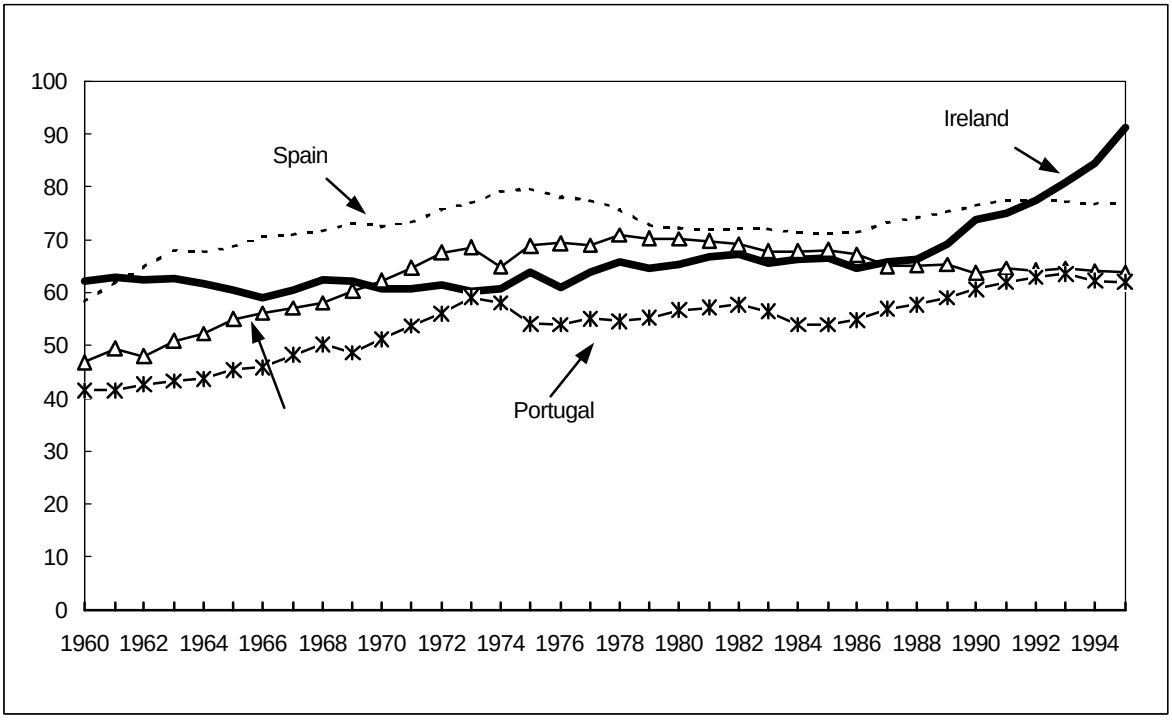

Table 5

GDP per worker hour in the EU-11: 1970-1990
(Coefficient of variation - percentage)

				Change	
	1970	*1980*	*1990*	*1970-80*	*1980-90*
Whole economy	33.13	27.22	27.54	-5.91	0.32
Agriculture	38.59	37.20	44.80	-1.39	7.60
Services	27.79	21.56	24.72	-6.23	3.16
Manufacturing	24.84	22.24	27.68	-2.60	5.44
of which:					
food	31.31[a]	22.66	21.10	-8.65	-1.56
textiles	23.85[a]	25.87	33.11	2.02	7.24
paper	23.12[a]	17.64	24.47	-5.48	6.83
chemicals	31.58[a]	32.08	35.02	0.50	2.94
non-metallic mineral products	26.60[a]	22.59	22.76	-4.01	0.17
basic metals	34.67[a]	36.43	27.89	1.76	-8.54
machinery & equipment	16.49[a]	19.76	27.09	3.27	7.33

Source: O'Leary (1995)
a 1972

III. TRANSITION MATRICES

These theoretical and empirical challenges to the conventional analysis of economic convergence are considerable. However, that analaysis has helped to reassert the idea that being backward has advantages, and that if certain conditions are satisfied then backward countries will develop rapidly. This is an important insight, and the challenge which it presents is to identify precisely what conditions must be satisfied in order to exploit catch-up opportunities and achieve rapid growth. This is not fundamentally
different from the traditional activity of development economists, and the theory of conditional convergence is really just the traditional approach in a new guise.[15]

[15] Gerschenkron's *Economic Backwardness in Historical Perspective* was, after all, a classic application of conditional convergence theory. There is a noticeable failure among contemporary convergence theorists to acknowledge this earlier literature.

However, the use of complex econometric techniques has, at most, given rise to a vast empirical literature and a large number of potentially significant variables, without shedding much light on endogenous growth dynamics.[16] Indeed, according to one sympathetic reviewer of this literature: "Policy makers who want to promote growth would not go far wrong ignoring most of the vast literature reporting growth regressions. Basic theory, shrewd observation and common sense are surely more reliable guides for policy" (Mankiw, 1995, pp. 307-308).

In response, several authors have examined the dynamics of global growth and income distribution using transition matrices. Countries are classified into N groups according to some measure, such as per capita income, qualitative stage of development or growth rate. A matrix P is then constructed which specifies, for each j and k, the probability p_{jk} that an arbitrary country in group j will move into group k within a certain length of time, normally a year. These probabilities may be estimated on the basis of historical evidence or they may be chosen for theoretical reasons.

The first interesting feature of simulation work in this area is the sensitivity of outcomes to the underlying assumptions. This is brought out clearly by Pritchett (1995), who considers a sample consisting of 14 "rich" countries" and 103 "developing" countries. In the former group per capita income is assumed to grow at a constant g = 1.8 per cent per year. For developing countries, the growth rate is a stochastic variable which belongs to one of four categories: stagnation g = 0.5 per cent; plateau g = 1.8 per cent; boom g = 1.8*(rich country income/y), which implies that a boom is faster the poorer a country is when it starts, but that growth eventually settles down to the "rich" country rate; and an"implosion" period in which g = - 1.8*(y - 250)/y, which creates the possibility of large recessions (especially for poorer countries), but with no country going below the minimum. All developing countries begin the simulation in stagnation. Starting with the existing distribution of world income, Pritchett shows how different, plausible, assumptions about the probability of transition out of stagnation can generate radically different outcomes, ranging from extreme polarization of incomes to fairly rapid convergence. His results are summarized in table 6.

A second interesting feature is the importance attributed to the time frame of the analysis. Quah (1993) divides countries into a number of groups, depending on their per capita income relative to the global average. From historical evidence for the period 1962-1984, he then calculates the probability that a country in one group will move into another group in the following year. The resulting transition matrix is shown in table 7. If the probabilities shown in this table are held constant and the evolution of income distribution through time is examined, it turns out that incomes will eventually stabilize in a "twin-peaked" distribution with both many poor and many rich countries.

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[16] Most economists have suggested that exogenous technological changes can explain the coincidence of globalization and rising inequality. However, this argument has surprisingly little empirical support. Moreover, it is difficult to reconcile with the growth slowdown.

Table 6

Simulations of alternative paths of divergence or convergence, depending on assumptions about transition out of stagnation of developing countries

Column	*I*			*II*			*III*			*IV*		
Transition from stagnation	*Exogenous (at 1.5 per cent per year)*			*Exogenous increase in 1995 due to better policies*			*IIncreasing with higher absolute income*			*Decreasing with the relative distance from the leader*		
	1870	*1995*	*2120*	*1870*	*1995*	*2120*	*1870*	*1995*	*2120*	*1870*	*1995*	*2120*
Ratio, minimum to maximum	6.6	40.7	340	7.7	44.8	13.4	7.7	46.8	2.8	7.3	45.2	276
Std. dev. in (GDPPC)	0.49	1.1	1.6	0.54	1.14	0472	0.53	0.99	0.15	0.53	1.15	1.46

Source: Pritchett (1995)

Table 7

Transition probabilities

	Year t+1				
	Group 5	*Group 4*	*Group 3*	*Group 2*	*Group 1*
Group 5	0.97	0.03			
Group 4	0.05	0.92	0.04		
Group 3		0.04	0.92	0.04	
Group 2			0.04	0.94	0.02
Group 1				0.01	0.99

Source: Quah (1993). In Quah's paper, grouping is based on real GDP per capita (relative to the world average). Group 5 consists of countries with less than or equal to ¼ of world average income; groups 4, 3, 2 and 1 have upper ∞ equal to ½, 1, 2 and times average income. Note that row totals may not sum to unity because of rounding errors.

Quah defines his country groupings with respect to average world income, so that convergence towards the top of the range is impossible, since not all countries can simultaneously enjoy per capita incomes several times the world average. With Quah's criterion of classification, the direction of convergence can only be towards the middle of the range. This property makes it inconvenient for exploring variations on his approach, so we shall assume that the country groupings are defined according to some criterion which allows for convergence towards extreme points. One possibility is to group countries according to their stage of development, for example underdeveloped, lower intermediate, intermediate, higher intermediate, developed. With such a classification, it is theoretically possible for countries to cluster anywhere in the range, and convergence can occur towards the top or bottom. With this re-interpretation, Quah's estimated transition matrix tells us that in the long run there will be many underdeveloped countries and many highly developed ones, with relatively few countries in between. It also implies, with probability one, that any underdeveloped country will eventually move up through all of the stages to become fully developed, and conversely that any developed country will eventually move down through all the stages to become underdeveloped. Thus, Bangladesh will eventually reach the most advanced stage of development, while the United States will fall back to the least developed stage. It is this two-way movement which produces Quah's stable long-run distribution.

The experience of the past 150 years suggests that countries do move downwards, but only to a limited extent. Even ruinous wars, economic cataclysms or prolonged stagnation rarely reduce the per capita income of countries by more than 50 per cent, and there is no recorded case of a country moving from being highly or even moderately developed into the lowest category. There seems to be some kind

of ratchet effect at work, and the question is how do we allow for it within the framework of transition matrices? As an illustration, let us assume that the economic status of a country can deteriorate by only a limited amount, so that a country in group N can fall back into group N+1, but having done so cannot fall back still further into group N+2. Since there are only five groups altogether, this is a fairly weak assumption. Yet its impact is dramatic. Assuming that all other probabilities are as in Quah, we find that all countries will eventually end up in the top two groups.

Starting with all countries initially in the bottom group, figures 2 and 3 compare how the distribution of countries evolves, using Quah's original transition probabilities and when these are modified by means of the partial ratchet effect described above. With a ratchet present, the initial polarization of incomes is even more rapid than in Quah's case, but eventually the gap begins to narrow as more countries leave the bottom and migrate into the upper groups.

However, this eventual convergence is very slow, and from the initial starting point it takes 330 years to reach the stage where 95 per cent of countries are in the top two groups. Convergence can, of course, be speeded up by policy measures which increase the probability of upward mobility. Figure 4 shows what happens when the probability of upward movement by each country into the group above is increased by 1 percentage point per year. Within 150 years from the initial starting point, 80 per cent of all countries are in the top two developmental groups, and within a further 80 years the proportion rises to 95 per cent. Thus, quite plausible modifications to Quah's transition probabilities generate rapid global development. Figure 5 shows what happens to income dispersion under the various scenarios.

Such accelerated development is consistent with the experience of the East Asian economies and with the earlier generation of late industrializers in North America, Western Europe and Japan. In all these cases the threshold to convergence was crossed during a very fast pace of growth over just a few decades. Moreover, this analysis is equally consistent with the possibility of economies getting stuck, especially when it is recognized that capitalist dynamics can involve technological and institutional upheavals which mark a structural break.

The transition matrix provides a useful technique for summarizing the diversity of historical experience and, as such, might be a better guide to future possibilities. However, since the matrix is concerned with the experience of a diversity of countries affected by a wide variety of economic and political factors, the probabilities in this matrix may be a poor guide to the prospects facing any particular country. For example, the matrix may show that over a certain period of time, the average poor country had a probability x of moving into a higher developmental stage. This probability may be derived from the experience of a small number of successful countries belonging to a certain region, say East Asia, and following some particular policy, say strategic trade intervention. For a country belonging to some other region and following a quite different trade policy, the probability of developing may be virtually nil without some major shift in policy or some radical change in the world

Figure 2

Evolution of income distribution: Quah probabilities

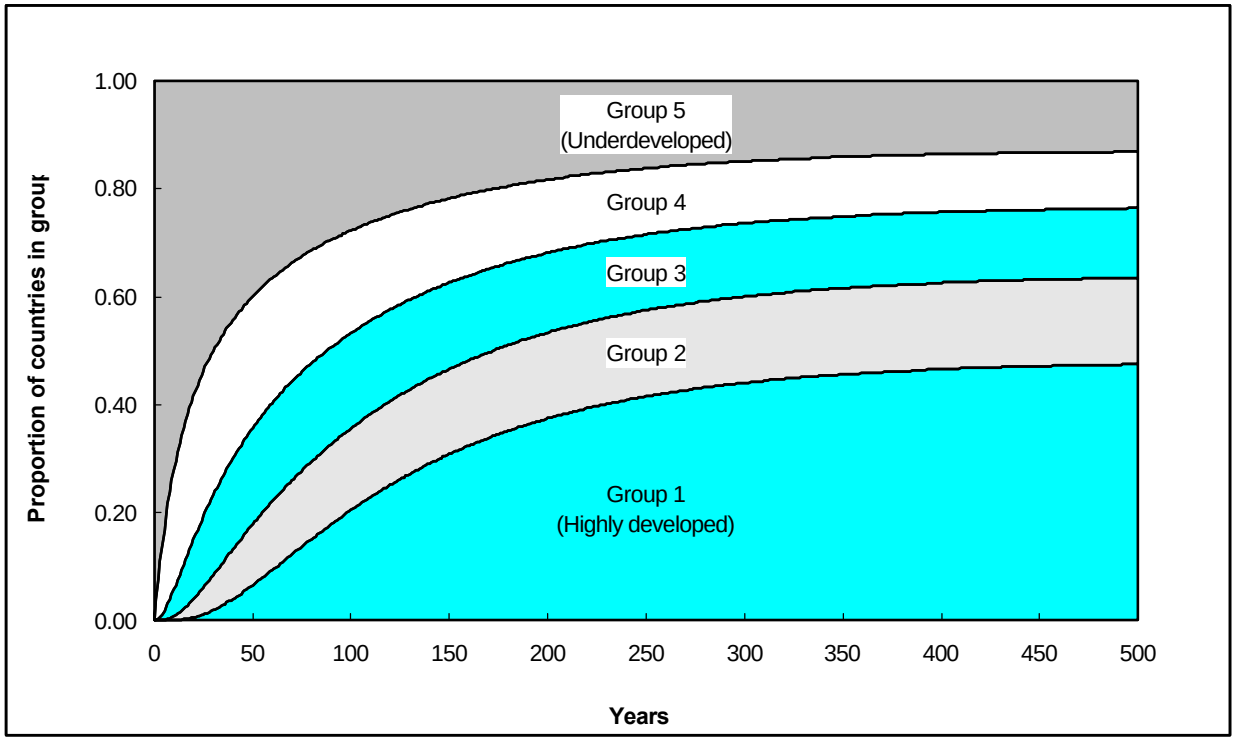


Figure 3

Evolution of income distribution:
Quah probabilities plus ratchet

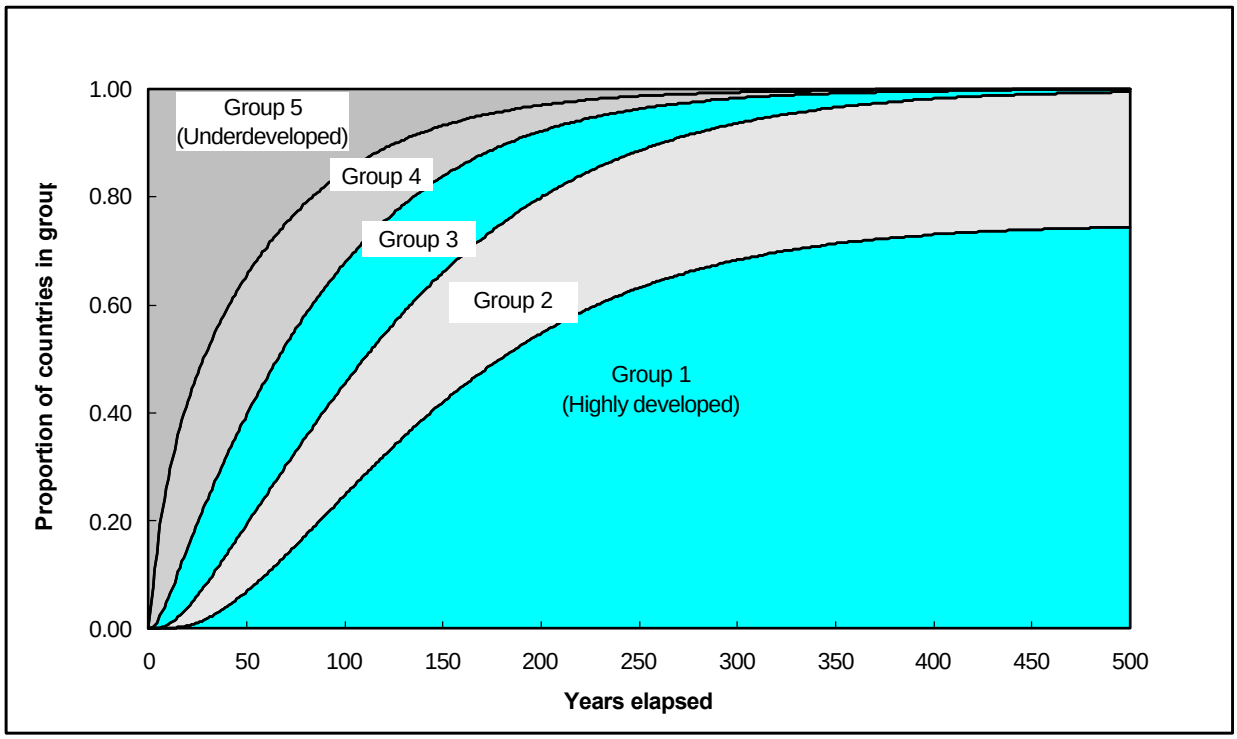


Figure 4

Evolution of income distribution:
ratchet plus increased upward mobility

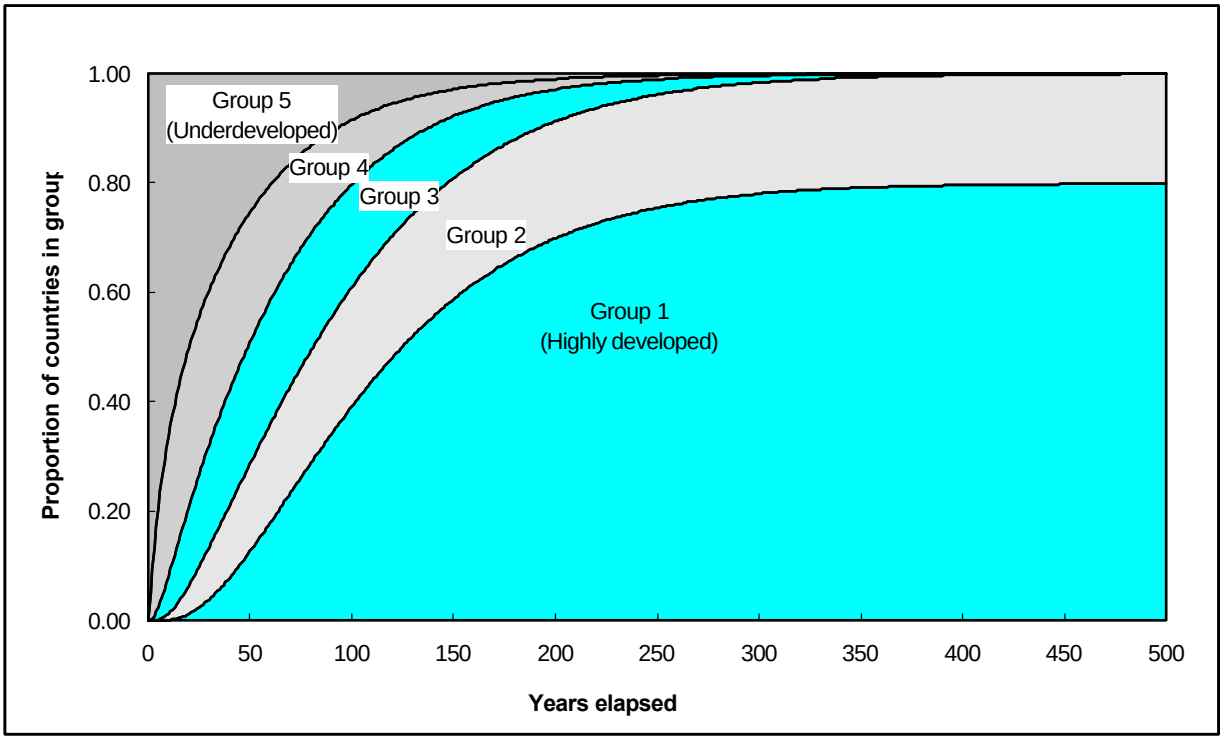
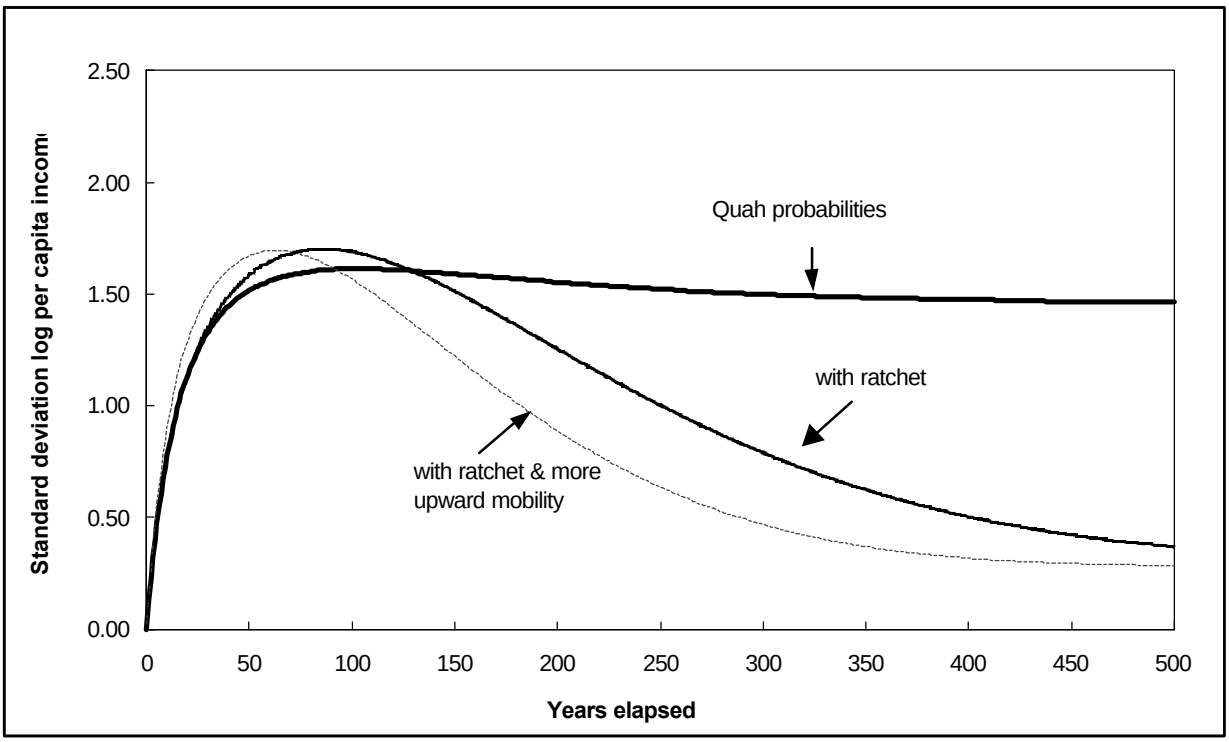


Figure 5

Global income dispersion
Quah probabilities plus ratchet



environment. Thus, transition matrices may be useful as a historical summary and for conducting thought experiments, but they cannot be a substitute for a careful assessment of the policies required to achieve faster growth and distributional objectives.

IV. GLOBALIZATION IN PERSPECTIVE

The discussion so far suggests that, contrary to the strong assertions of many conventional economists, the links from increased global economic integration to economic convergence are neither linear nor spontaneous, and that any assessment of future prospects will be sensitive to initial conditions, policy choices and the time frame of the analysis. It is also clear that choosing the appropriate starting point for analysing an interdependent global economy is very important. The concern with static efficiency gains from getting market prices right is limiting in this respect. Moreover, much of the empirical literature does suggest an alternative and more appropriate place to begin - and on which there is a consensus - namely capital accumulation, including investment in human capital.

The central role of investment is confirmed in a paper by Levine and Renelt (1992), which examines whether the conclusions of existing studies are robust or fragile to small changes in the conditioning information sets. They find that almost all results are fragile, and that the only robust correlations are between growth and the share of investment in GDP, and between the investment share and ratio of international trade to GDP. More recently, Sachs and Warner (1995b) have found investment to be statistically significant. Sachs and Warner (1995a) and Barro and Sala-i-Martin (1995) also find that investment has a positive and statistically significant coefficient in some their equations.[17] This starting point, moreover, is in line with the earlier work on economic catch-up as well as on recent work on the East Asian miracle, which informs much of the convergence and globalization literatures. For the vast majority of developing countries, sustained economic growth requires shifts in the structure of production, productivity growth and technological upgrading, all of which have very strong and complementary links to a fast pace of capital formation. Putting capital accumulation back into the globalization debate requires looking at international economic flows in a rather different light.

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[17] However, this coefficient declines in magnitude and loses significance when certain other variables are included in the regressions. In the former paper, this occurs when a variable for openness is included, and in the latter when a variable for life expectancy is present. It is a mystery why investment should lose its significance when a variable for life expectancy is present, and this result must be a statistical fluke. Barro and Sala-i-Martin (1995) also found that economic growth is negatively associated with secondary and higher education for women. This implausible result puts a question mark over all of their findings and those of similar studies.

A. Trade, openness and convergence

The contribution of trade to accelerated growth in developing countries comes through the familiar efficiency gains associated with greater uniformity in prices for internationally traded goods, as well as more dynamic gains linked to heightened international competitiveness and the advantages of specialization. However, analysis of the links between trade and economic growth has long been hampered by ambiguities surrounding the categorization of national trade policies. Two concepts, openness and outward orientation, have often been used interchangeably for this purpose. The tendency to equate these two concepts in describing and assessing trade policy has its roots in the conventional trade theory that policies combining protection with export promotion produce the same result as those relying on full-scale import liberalization, because they are equivalent in terms of incentive structure - a proposition that is valid only under very special conditions. Openness describes a situation characterized by the absence of restrictions on flows of goods across national borders, notably on imports, while outward orientation usually depicts a strategy of emphasizing world markets as an outlet for domestic producers, and is often synonymous with export promotion. Countries which can be described as outward- or export-oriented in the above sense can have important, but selective, restrictions on imports, even though such barriers might be lower than in countries emphasizing domestic rather than world markets.

The tendency to equate these two concepts has also given rise to a confusing proliferation of empirical indicators, which are used interchangeably in connection with trade policy. However, findings of a recent survey examining six common measures of trade policy indicate that countries can be very differently ranked according to the measure used, and there are few significant cross-country correlations between these measures (Pritchett, 1996). These findings raise obvious questions about the reliability of the various indicators in capturing some common aspects of trade policy, and about the interpretation of the empirical evidence on the relation between trade and economic performance.

Despite these familiar concerns, a number of studies have reported that economic openness facilitates catching-up by backward countries and leads to a reduction in the dispersion of per capita incomes. The work of Sachs and Warner (1995a) has become an established reference point in these discussions. However, their analysis is subject to several criticisms. They are probably correct to argue that economic openness, in their sense of the term, is normally conducive to catching-up. However, this is not very helpful because their definition is too broad to be really useful. In the case of trade barriers, an economy is classified as open if its *average* tariff rate is less than 40 per cent and non-tariff barriers cover less that 40 per cent of trade. According to this criterion, most Asian NIEs are classified as consistently open over the past 25 years, despite their well-documented interventions in the sphere of trade, finance and direct investment. The Republic of Korea and Taiwan Province of China, for example, pursued vigorous strategic trade policies designed to stimulate local industry and promote

exports through the use of controls on inward FDI and selective import restrictions. Such policies were highly selective and biased towards machinery and intermediate goods imports. Tight restrictions on some imports were accompanied by low or zero tariffs on others, so the average tariff rate and overall quota coverage were quite low. By using a measure of openness which conceals these facts, Sachs and Warner are ignoring the central issue of policy debate at the present time. To say that countries will suffer if they have an average tariff rate or quota coverage of more than 40 per cent tells us nothing about the impact of strategic trade policies involving more selective forms of intervention. It is unjustified to use the findings of the Sachs-Warner study to support claims that comprehensive deregulation is good for economic growth and that countries should refrain from East Asian-style intervention. Indeed, there is ample evidence that price distortions in these economies were pervasive, even more so than in many other developing countries with a much less impressive economic performance. Rather, trade policies were designed to attain dynamic gains from linking trade to capital accumulation and technological change.[18]

Other authors have refined the openness and convergence argument in a number of ways. One approach has been to link the importance of trade to country size. Small developing countries have the most to gain from globalization by allowing them to reap economies of scale by specialization, and then to switch into increasingly capital-intensive production sectors before diminishing returns appear in the original labour-intensive lines of specialization. This argument is usually illustrated with reference to the successful East Asian experience (Findlay, 1996).

While this is in many respects a more reasonable argument than that of Sachs and Warner, the idea that the East Asian success was the spontaneous outcome of market forces is not a tenable one and their avoiding getting stuck required determined policy interventions as economies began to upgrade from simple labour manufactures to those with a higher capital and technology content.[19] At all levels of development sustained export expansion depends on the creation of additional production capacity in industry as well as productivity growth, which is dependent upon new investment. Thus a sustainable growth process requires mutually reinforcing dynamic interactions among savings, exports and investment.[20] Such a process needs to be characterized by continuously rising exports, domestic savings and investment, both in absolute terms and, for most of the industrialization process, as a proportion of GDP. Initially, investment is likely to exceed domestic savings by a large margin, with the difference being financed by net inflows of capital, but over time the external gap should narrow as exports and savings grow faster than investment.

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[18] The theoretical foundations of *dynamic* gains from free trade are indeed controversial. See, for example, Rodrik (1997, p. 30), and the articles on international competitiveness in *Oxford Review of Economic Policy* (Vol. 12, autumn 1996).

[19] There is also plenty of evidence to suggest that a switch from primary to manufactured exports if not properly managed can very easily get stuck. See Hirschman (1995, ch. 2) and UNCTAD (1992).

[20] See UNCTAD (1996, ch. II) for an extended discussion of these interactions; also Akyüz *et al.* (1998).

In East Asia, the export-investment nexus was built around traditional low-skill industries. However, the emergence of successful export-oriented industries does not follow spontaneously from rapid capital accumulation.[21] Although these countries enjoyed a comparative advantage in labour-intensive manufacturing industries, this did not mean that investments in these industries were automatically forthcoming. In most cases, they still needed government support in financing, international marketing, and sometimes even export subsidies in order to become viable in the world market. Nevertheless, it is true that the development of these industries was largely based on encouraging productive investments, and that at this stage the East Asian countries were not as extensively engaged in a selective industrial policy as they were at a later stage. However, even if investments are made in industries with static comparative advantages arising from existing resource endowments, including labour, constraints on the room for productivity growth means that rising domestic wages and loss of competitiveness can quickly bring a halt to an export drive. In anticipation of such potential difficulties, East Asian economies, from the early stages of their development, gradually and purposefully nurtured new generations of industries with a greater potential for innovation, exporting and productivity growth in the long run.

Thus, in these countries measures to promote investment were linked to the establishment of domestic capital and intermediate goods industries and technological upgrading (UNCTAD, 1994). These included reinstituting import restrictions, rolling back tax exemptions on the import of certain intermediate and capital goods and granting higher investment tax credits to businesses purchasing domestically produced machinery. In addition, a policy was pursued of building up a technological capacity at the national, industry and even firm level. In these economies, tax and other incentives for enterprise training were complemented by a more detailed national training programme which placed greater emphasis on technical subjects at higher levels of education and on greater industry involvement in vocational training schemes. Measures to facilitate local R&D, including direct financial subsidies, have also been extensively used.

Given that technological and organizational leadership was located abroad, the transfer and adaptation of foreign technology was, from an early stage, recognized by policy makers in East Asia as a critical link in the process of industrial upgrading. Acquiring new technologies required generating foreign exchange, and it was for this purpose, as well as to provide an outlet for industrial production without promoting domestic consumption, and to expose the recipients of rents to a measured degree of competition on world markets, that East Asian governments encouraged exports. As a result of these

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[21] Like most developing countries, primary exports were the initial source of foreign exchange earnings in the Republic of Korea and Taiwan Province of China in the early 1950s. Also, as in many other developing countries at that time, efforts were made from an early date to move into manufactured goods, initially in wood and paper products more significantly, and as was earlier the case in Hong Kong in textiles and clothing. In both the Republic of Korea and Taiwan Province of China, labour-intensive exports as a share of their domestic production rose continuously and rapidly from the mid-1960s, reaching 60 per cent in the early 1980s, although in the case of Taiwan Province of China resource-intensive manufactured exports remained relatively important as a source of foreign exchange for a longer period of time. See Hentschel (1992).

various policy initiatives, the first-tier NIEs have been particularly successful in upgrading their structure of manufacturing output towards scale- and skill-intensive activities. By the second half of the 1980s, the share of these activities in total manufacturing output had passed that of resource and labour-intensive activities. The rising share of these scale and skill-intensive goods in total manufacturing exports (although initially lagging their share of total output) also began to accelerate rapidly from the mid-1970s. These goods not only comprise the majority of manufactured exports from the first-tier NIEs but have also gained substantial shares in world markets (UNCTAD, 1996).

The importation of sophisticated products may enlarge the domestic demand for these products to the point where it becomes eventually profitable for domestic firms to start producing them;[22] imports may also play a vital role in forcing domestic producers to upgrade. On the export side, trade can stimulate economic growth by forcing domestic firms to develop the technical skills and organizational capacities required to conquer and retain foreign markets. Such dynamic aspects of trade are mentioned in passing by most trade theorists, but are rarely given the serious attention they deserve in a literature which is dominated by the traditional concerns of static trade theory.

A second approach to examining the links between openness and convergence looks more closely at the timing of liberalization episodes. Ben-David (1993) has examined the convergence experience of three regional groupings from this perspective: the original EEC countries, the EFTA countries, and North America. Ben-David concedes that in the case of EFTA income convergence preceded trade integration, but for the other groupings he argues that trade integration was a major causal factor promoting income convergence. In the case of Canada and the United States, there is some evidence for this claim: between 1964 and 1973 there was an explosion of trade between Canada and the United States, while at the same time growth in Canada accelerated and the per capita income gap between the two countries narrowed significantly. In the case of the EEC, however, Ben-David's claim is contradicted by his own data. These data show that the dispersion of per capita incomes among the original EEC members fell dramatically over the period 1951-1963, and more gradually thereafter. Yet the process of reducing tariffs and eliminating quotas only began in 1958 and took some years to complete, so that tariffs were still quite high in 1963.[23] Moreover, most of the spectacular expansion in intra-EEC trade took place after 1963, when post-war income convergence was almost complete. Imports from within the EEC rose from 4 per cent of the GDP of EEC countries in 1951 to only 6 per cent in 1963. It is difficult to believe that such a modest increase in trade, mostly concentrated towards the end of the period, could have been a major factor behind the impressive convergence of incomes which occurred between 1951 and 1963. A more convincing argument is that rapid growth and income convergence throughout the EEC region led to a mood of optimism and created the political conditions

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[22] This is integral to the flying geese model of development (see Korhonen, 1994).

[23] However, the dismantling of wartime controls on trade did begin earlier and was a gradual process aided by the European Payments Union (1950-1958).

required to dismantle trade barriers, which in turn led to a rapid expansion of trade. This rapid growth in trade may have consolidated and accelerated economic growth in the EEC. It may have also stimulated further income convergence. However, it was not the main driving force behind post-war income convergence, most of which occurred when trade between the EEC countries was still fairly modest. In all these countries, a very rapid pace of capital accumulation, particularly in manufacturing, beginning in the early 1950s provided the well-spring of the convergence process - a process which was reinforced by closer integration linked to the growth of intra-industry trade.

Ben-David (1995) extends his earlier argument to cover a much wider range of countries. For each of 25 middle- and high-income countries, he estimates how rapidly its per capita income has converged with the average per capita income of its trading partners. He then compares this estimate with the rate of convergence with an equal-sized group of randomly chosen countries. In a number of cases, it turns out that convergence is significantly faster with trading partners than with a randomly chosen group of countries. This result seems to be fairly robust. However, there is one qualification: the countries for which this finding holds were all economically quite advanced in 1960, when the period covered by the study began, and they were mainly European. The only non-Europeans were Australia, Canada and Japan. In the case of Canada, Ben-David's analysis suggests that his convergence results refer mainly to its catch-up with the United States, for which independent evidence suggests that trade did play a significant role. Only five non-OECD countries are covered by his study - Argentina, Chile, Mexico, South Africa and Uruguay. It is striking that for none of these countries is there evidence of significant convergence towards the income level of its main trading partners. This suggests that the relationship between convergence and trade is valid only for relatively advanced countries. Moreover, as Ben-David concedes, his evidence does not establish the direction of causality, and is consistent with the view that income convergence stimulates trade rather than *vice versa*.

A final approach is to look directly at factor price movements to assess whether these have moved in a manner consistent with the predictions of orthodox trade theory. The body of accumulated evidence across developed and developing countries does not show any long-run wage convergence trend across the world economy (Leamer and Levinsohn, 1995). Considering samples of countries at similar levels of development, a number of studies focusing on the European Union have found some support for cross-country wage convergence (Gremmen, 1985; Van Nourik, 1987). However, the evidence is more mixed for the OECD countries. From 1961 to 1984, rising international trade flows among OECD countries was associated with wage convergence. After 1984, no clear convergence pattern is observed, and the average real wages of production workers in a number of industrialized countries, including the United States and United Kingdom, diverged from the highest wage countries such as Germany. A comparison of wage trends in eight advanced and five middle-income developing countries across similar industries shows a statistically significant convergence in this sample of industry-relative wages

towards the worldwide mean owing to greater international trade. However, convergence is modest and limited to high-income economies (Davies, 1992).

Over the past two decades most developing countries have seen wage gaps with the North rise, including in some cases from already very low wages either because real wages have declined in absolute terms (as in Latin America and much of Africa in the 1980s) or because they have lagged the wage growth in the advanced countries (as has been the case in much of South Asia). The exception is the first-tier of East Asian NIEs, where manufacturing wages have converged on those of the North at a quite rapid pace. These widening wage gaps in manufacturing both between developed and developing countries and also among developing ones have coincided with a period of greater openness in the developing world.

Table 8 shows changes in the wage gap between various developing countries and the United States for a number of low, medium and high skill industries between 1980 and the early 1990s. In all these countries (except Kenya) the share of exports and imports in GDP has risen quite strongly over this period. However, in most countries, and across all skill levels, there has been a strong decline in wages in developing countries relative to those in the United States. The exception to this trend has been in the Asian NIEs, particularly those in the first-tier such as the Republic of Korea, where wages across all skill levels have converged on the United States.

It is difficult to explain these wage trends simply in terms of differences in factor endowments, including differences in educational attainment. Rather, for most developing countries, strong growth in wages depends upon industrial expansion and upgrading bringing higher levels of employment and rapid productivity growth both to the economy as a whole as well as to specific industrial sectors.[24] As table 8 shows, those countries in East Asia which exhibited strong wage convergence also exhibited strong productivity convergence. But this has been attained in the context of a managed investment-export nexus, rather than as a result of spontaneous global market forces.

[24] A recent study of manufacturing real wage growth in 32 developing countries for 1973-1990 confirms that the impact of trade on wages cannot be delinked from investment and productivity performance, and that greater openness to trade in this group of countries in the 1980s did not coincide with stronger wage growth (Paus and Robinson, 1997). This is also the conclusion reached for the OECD countries by Dollar and Wolff (1993).

Table 8

Relative wage and productivity trends in selected countries
(Relative to US level)

		1980	*Early 1990s*	*1980*	*Early 1990s*
		Textiles		**Clothing**	
A.	**Wages** (annual wage per employee)				
	Germany	1.24	1.32	1.31	1.45
	Mexico	0.43	0.21	0.49	0.24
	Chile	0.37	0.23	0.45	0.26
	Colombia	0.23	0.11	0.19	0.1
	Hong Kong	0.38	0.57	0.52	0.64
	Korea, Rep. of	0.21	0.51	0.23	0.61
	Malaysia	0.1	0.17	0.07	0.19
	Indonesia	0.04	0.04	0.06	0.05
	Turkey	0.21	0.33	0.24	0.24
	India	0.08	0.05	0.08	0.05
	Kenya	0.13	0.03	0.14	0.03
	Morocco	0.24	0.13	0.14	0.14
B.	**Productivity** (value added per employee)				
	Germany	0.94	1.19	1.26	1.33
	Mexico	0.43	0.25	0.84	0.22
	Chile	0.57	0.32	0.72	0.34
	Colombia	0.48	0.27	0.29	0.13
	Hong Kong	0.35	0.43	0.42	0.41
	Korea, Rep. of	0.29	0.63	0.28	0.65
	Malaysia	0.16	0.2	0.12	0.14
	Indonesia	0.08	0.07	0.05	0.07
	Turkey	0.4	0.4	0.34	0.41
	India	0.07	0.03	0.07	0.077
	Kenya	0.14	0.02	0.13	0.03
	Morocco	0.2	0.11	0.1	0.09
		Transport equipment		**Printing & publishing**	
A.	**Wages** (annual wage per employee)				
	Germany	0.97	1.08	1.3	1.32
	Mexico	0.37	0.17	0.38	0.21
	Chile	0.25	0.15	0.5	0.35
	Colombia	0.13	0.07	0.16	0.09
	Hong Kong	0.29	0.45	0.3	0.44
	Korea, Rep. of	0.18	0.45	0.28	0.52
	Malaysia	0.1	0.13	0.12	0.19
	Indonesia	0.07	0.03	0.07	0.04
	Turkey	0.26	0.27	0.28	0.33
	India	0.06	0.04	0.07	0.05
	Kenya	0.07	0.03	0.24	0.04
	Morocco	0.3	0.14	0.32	..

Table 8 (continued)

	1980	*Early 1990s*	*1980*	*Early 1990s*
	Transport equipment		**Printing & publishing**	
B. Productivity (value added per employee)				
Germany	0.86	0.83	0.95	0.82
Mexico	0.5	0.35	0.4	0.22
Chile	0.55	0.2	0.84	0.44
Colombia	0.25	0.17	0.26	0.2
Hong Kong	0.23	0.29	0.28	0.33
Korea, Rep. of	0.24	0.54	0.29	0.57
Malaysia	0.13	0.19	0.16	0.2
Indonesia	0.17	0.16	0.07	0.08
Turkey	0.27	0.33	0.27	0.46
India	0.05	0.03	0.05	0.03
Kenya	0.05	0.01	0.15	0.03
Morocco	0.23	0.13	0.19	..

Source: UNIDO (1996)
Note: Figures for 1980 are from 1975.

B. Capital mobility and convergence

While much of the analysis of greater capital mobility has been handled within international trade theory, its impact on growth and convergence is clearly much broader and more direct. Indeed, capital mobility is now seen as playing the leading role in many accounts of the contemporary globalization process. A rapid pace of financial liberalization has been advocated on the grounds that financial repression, typified by nominal interest rates below the rate of inflation, not only leads to inefficiency in the allocation of resources and discourages savings, but also redistributes wealth at the expense of savers. Free capital movements should allow savings to be pooled and allocated globally, improving the international allocation of resources and equalizing rates of return on capital (adjusting, of course, for differences in risk), as capital moves from low-return locations in the North to high-returnlocations in capital-scarce developing countries. Simultaneously with these gains, capital mobility, particularly in respect of direct investments, should further accelerate growth through higher rates of accumulation and the transfer of technology and organizational skills.

However, like trade, the impact of capital mobility is more complex than suggested by conventional analysis. Global financial deepening has occurred, while the link between financial flows and foreign investment has considerably weakened. These financial flows are rarely associated with the flows of real resources - i.e. capital equipment embodying best-practice production techniques and other resource inputs seeking the highest available rates of return in the production of goods and services. Rather, they are primarily related to the purchase and sale in secondary markets of liabilities created for the financing of already existing real assets. A large proportion of these flows consists of liquid capital attracted by short-term arbitrage margins and prospects of speculative capital gain, rather than by long-term yields on productive investment. They are extremely volatile and subject to bandwagon effects, capable of generating gyrations in security prices, exchange rates and trade balances. They make little contribution to the international allocation of savings or diffusion of technology and hence to a reduction in international disparities in per capita income.[25] Indeed, the combination of financial and trade liberalization can very easily upset the domestic accumulation dynamic by shifting incentives towards the non-tradable goods sector and placing a premium on more liquid but less productive assets (UNCTAD 1997, ch. 4).

In the light of the uncertain impact of short-term capital flows, many globalization enthusiasts have singled out FDI as the driving force behind economic convergence (IMF, 1997; World Bank, 1996). Unlike other capital flows, FDI can be a less volatile source of financing for the accumulation process and can have more direct links to economic growth than other cross-border flows, because it facilitates the transfer of technology and generates spillovers into other sectors. However, there are a number of aspects of the current globalization experience that suggests that the impact of FDI on growth and convergence requires careful assessment before designing policies that aim at maximizing the benefits from hosting transnational corporations.

The economic impact of recorded increases in FDI flows is likely to differ in significant ways as between greenfield FDI, which involves a firm constructing a new production facility abroad financed by capital raised in the home country, the acquisition of a controlling interest in an already existing firm, which seems to correspond more to shorter-term capital flows and FDI in the form of retained earnings (Kregel, 1996). Moreover, many of the changes in global financial markets that have facilitated capital mobility and the increase in FDI flows have also made it more difficult to evaluate their stability. Evidence suggests that even when FDI is governed by long-term considerations, such as real rates of return and securing market shares, aggregate FDI flows can respond rapidly to changes in short-term economic conditions. This is particularly true for non-repatriated earnings on existing stocks of FDI, which have constituted in recent years a more important source of asset acquisition abroad by United

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[25] See Felix (1996), Kregel (1996), Akyüz (1995), and UNCTAD (1991) for more detailed analysis of these links.

States and United Kingdom firms than capital outflows from those countries (Claessens *et al.*, 1993, p. 22).[26]

Any examination of the impact of FDI on economic growth and convergence must also bear in mind a number of other considerations. Although evidence suggests a positive association between FDI and growth, it is difficult to determine causation.[27] A realistic interpretation of the evidence suggests that there is a threshold level of income which needs to be crossed before FDI can make a significant contribution to overall growth performance.[28] Such a conclusion is also broadly consistent with the finding that technology and other spillovers from TNCs become significant only when there is already in place an appropriate level of local capabilities (Lall, 1995; Aitken *et al*., 1996). Thus, to a very large extent FDI is attracted to economies with a proven growth record, be it to seek markets or cost advantages, in which case it is part of a virtuous growth circle (Kozul-Wright and Rayment, 1997).

Much of the developing world remains outside the expanding universe of international production because even when cost advantages are present, they alone do not offset low productivity levels or the absence of productive assets needed to complement firm-specific plant and equipment. Furthermore, risks associated with investment tend to be inversely related to the stage of development reached. While incurring these risks may be justified by the expectation of monopolistic profits associated with the exploitation of a particular natural resource in a poor developing country, there will be no such exceptional or monopolistic elements in manufacturing or services. Any attempt in these countries to improve cost advantages by easing their entry conditions for FDI, or by reducing wages further, will almost certainly fail to offset other disadvantages which cause the risk premiums to be high (Kregel, 1996).

V. CONCLUDING REMARKS

This paper has surveyed some of the issues which have arisen during the recent debate on globalization and in particular those associated with the revival of neo-classical growth and trade theory. The central claim of a strong globalization thesis has been that faster growth under open trade regimes offers favourable prospects for developing countries leading to income convergence across the global economy. The key to this analysis has been the beneficial role of increased capital mobility.

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[26] The recent financial crisis in South-East Asia did not discriminate between countries with a greater or smaller reliance on FDI flows.

[27] Blomstrom *et al.* (1994) do find such a causal link. On the other hand, a study by Dutt (1997) finds no evidence of causation.

[28] See Borensztein *et al.* (1995), where the threshold is linked to the level of human capital.

The issues are important and the debate has been interesting, if only because so much quantitative evidence is now available, given the great improvement in international statistics over the past decade. However, many of the conceptual issues have been long familiar to development economists and surprisingly little that is really new has emerged. More importantly, the empirical evidence in support of this strong globalization thesis is very weak and the domestic determinants of economic growth remain significant.

The broad policy conclusion from the above analysis is thus a simple one. In a more open and integrated world economy, both the quantity and the quality of investment are increasingly influenced by external factors. However, the forces driving capital accumulation retain strong domestic roots and remain open to the influence of various types of policy initiative. The successful economies of East Asia, far from illustrating the virtues of rapid liberalization and unfettered global market forces, confirm the complexities of policy-making in an interdependent world.

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