Momentum for Development and Development Disequilibria

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I. Introduction

Back in the 1950's, several leading development theorists called attention to the vicious circles of underdevelopment, to low level equilibrium traps, and to the need for critical minimum efforts, and "big pushes" to break out of these traps. Their treatment of these phenomena, however, was generally rather vague and non-operational, and, as a consequence, these phenomenon were soon swept under the rug by mainstream development economists who confidently advocated that, if only proper attention were devoted to (neoclassical) economic theory, to operationalizing that theory, and to applying it carefully and quantitatively, the vicious circles and low level traps would either disappear automatically, or at least could be easily avoided or overcome. [Bauer and Yamey (1957), T.W. Schultz (1964), Fei and Ranis (1964), Bruton (1965)].

With or without foreign aid, mainstream development economists predicted that development would spread across national boundaires and populations. Latecomers, indeed, might even have some advantages over the more advanced countries in terms of their access to modern technology, a wide variety of institutional frameworks [Gerschenkron (1962), Cameron (1967)], plentiful underutilized resources, usually labor (Nurkse, 1953), although sometimes also land or minerals (Caves. 1965), and a lesser degree of environmental pollution and despoliation. Development economists have generally found themselves preaching the gospel that hard work, and rational resource allocation would be sufficient to allow any except perhaps the most resource-poor less developed countries (LDCs) to advance and perhaps even to gradually catch up with the more developed countries (MDCs). Only two dissenting groups had until recently been in evidence: Malthusians and trade backwash theorists.

Recognizing that imported medical technology had allowed the

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death rate to fall without inducing any offsetting decrease in the birth rate, the first of these groups has alerted the world to the harmful consequences of the population explosion on savings, investment, education, health, income and output, especially in per capita terms. Although the potentially harmful consequences of the rapid population growth that has become typical of most LDCs have been widely appreciated, there has also been general confidence that the birth rate would be adjusted downward in one way or another, that adjustment could come about as a natural, though lagged, response to the declining infant mortality rate [T.P. Schultz (1973)], to the increasing opportunity cost of children associated with urbanization and improved employment opportunities for women [Becker (1960)], to the increasing recreational opportunities to sex (especially television and movies), or to the effects of education and urban success symbols in reducing the importance of fertility as a source of prestige [Leibenstein (1957), Easterlin (1975)]. If none of these factors were sufficient to reduce the rate of population growth to tolerable limits, the high rate of return to investments in contraceptives calculated in the well-known study of Enke (1960) would make birth control programs essential elements of any rational allocation of resources. Therefore, sooner or later even this problem would be taken care of, and relatively automatically at that. Moreover, recently several simulation studies, e.g., Simon (1976), have appeared that suggest that the effects of population growth may not be as deleterious as had previously been supposed, thereby causing further recession of the Malthusian concern for population growth.

The second of these dissenting groups is the minority of trade and development specialists (Singer, Prebisch and Myrdal) who have consistently argued that the advantages of trade and openness may be different for LDCs than for MDCs, the potential advantages for LDCs being reduced or even reversed by the deteriorating terms of trade, and export instability that are often alleged to be characteristic of LDC trade [Levin (1960), Prebisch (1959), Singer (1950)]. Modern research, however, has tended to produce little evidence to support these conclusion [Yotopoulos and Nugent (1976)] and hence the trade backwash theorists remain vocal but not terribly persuasive except perhaps within the somewhat artificial confines of the United Nations and its specialized agencies.

These two groups notwithstanding, the neoclassical optimism that, unless impeded by an irrational allocation of resources, or an especially adverse resource base, development should spread through the world has dominated. The explanation for the dominance of this position derives from the supreme confidence in the realism of the neoclassical assumptions of perfect (costless) information, ceaseless competition, profit maximization and the large number of mechanisms, each well

founded on theoretical maxims derived from the aforementioned assumptions, wherein growth would spread. These mechanisms range from aid, capital movements, and migration through trade, to technological transfer and the never-ending internal adjustments that ensure technical and allocative efficiency.

II. The Growing Gap and the Importance of Momentum

In contrast to such theoretical predictions, the record has shown that relatively few LDCs have managed to sustain respectable rates of growth in per capita income, let alone to achieve rates sufficient for narrowing the gap between themselves and the MDCs. Given that the typical LDC is highly dependent on one or at most a few individual export commodities which are subject to market conditions varying sharply from one period to another, one would expect considerable variation in aggregate growth rates of individual countries from period to period. Table 1 below reveals some individual instances in support of such expectations as, for example, in the case of important exporters of minerals, (like Chile and Bolivia) or those of coffee and bananas in which world market conditions, plant ecology, and other factors favored some particular producers, especially those in Central America in the 1960s.[1] Surprisingly, however, the general tendency is for the aggregate growth rates of individual countries to be rather similar from one decade to the next. As the reader can see from even a quick glance at Table 1, the vast majority of LDCs had growth rates that were either consistently higher or consistently lower than the LDC average of each decade. Thus, no fewer than fifteen of the 42 LDCs included in the table had growth rates of GNP averaging less than both the overall LDC population-weighted averages of 4.4 percent per annum in the 1950s and 4.5 percent per annum in the 1960s.

Likewise, twenty-one of the 42 LDCs listed sustained growth rates during both periods that exceeded the LDC averages, in some cases (such as Greece, Iraq, Israel, Korea, Mexico, Panama, Taiwan. Thailand and Venezuela) by quite a bit. Given the higher rates of population growth of the LDCs, comparatively few of even the faster growing LDCs managed to narrow the gap in living standards between themselves and the MDCs.

A similar pattern of intertemporally consistent intercountry differences in growth rates has been observed among MDCs. For example, Japan. France and Germany have consistently managed growth rates above the MDC average while the United Kingdom has consistently

1 The abrupt fall in the growth rate of the Dominican Republic is. of course, attributable to the political instability and civil war in that country following the long Trujillo regime.

Table 1

Classification of LDCs by Average Annual Growth Rates of GNP at Constant Prices, 1951-60 and 1961-70

Country	Growth Rate 1951-60	Growth Rate 1961-70
Below-average in both 1950s and 1960s		
Argentina	3.0	4.0
Burma	4.2	2.3
Egypt	(3.5)	3.4
Ghana	4.3	2.2
Haiti	1.9	0.7
India	4.1	3.1
Indonesia	3.0	2.1
Malawi	3.6	4.1
Morocco	1.4	3.8
Pakistan	2.6	4.4
Paraguay	3.2	4.3
Sri Lanka	3.0	4.2
Sudan	4.0	(4.1)
Tunisia	2.8	4.1
Uruguay	−0.1	0.3
Below-average in 1950s, Above-average in 1960s		
Bolivia	0.0	6.0
Chile	3.6	4.6
El Salvador	4.2	6.6
Guatemala	3.8	5.3
Honduras	3.8	5.5
Above-average in 1950s, Below-average in 1960s		
Dominican Republic	6.1	2.9
Above-average in both 1950s and 1960s		
Brazil	5.8	4.5
Colombia	4.7	4.9
Costa Rica	6.2	6.0
Cyprus	5.0	6.3
Ecuador	4.9	5.3
Greece	5.9	7.3
Iraq	10.6	6.4
Israel	11.1	7.8
Jamaica	10.1	4.7
Korea	6.0	9.1
Mexico	6.1	6.6

Continued

Table 1 Continued

Country	Growth Rate 1951-60	Growth Rate 1961-70
Above-average in both 1950s and 1960s (continued)		
Nicaragua	5.2	7.2
Panama	5.2	7.8
Peru	5.2	4.9
Philippines	4.5	4.9
Spain	5.0	7.4
Taiwan	6.6	10.3
Thailand	6.4	8.2
Turkey	5.7	6.4
Venezuela	8.2	5.9
Zambia	6.1	6.0

Notes: [a]indicates 1954-1960
[b]indicates 1952-1960
numbers in parentheses indicate crude estimates

Source: United Nations, *Yearbook of National Account Statistics*, various years.

grown at below-average rates. Although the differences in average growth rates for given decades between different countries are somewhat smaller than in the case of LDCs, the experience of MDCs (not included in Table 1) further underscores the importance of momentum in the growth process.[2] Once a certain degree of momentum for change and development has been attained, continued growth seems relative easy to achieve. Without such momentum, however, the growth process seems relatively difficult to initiate and to sustain. Thus, countries that have not been able to generate much growth in recent decades have a low probability of doing significantly better in the near future. The list of successful LDCs is sufficiently large and heterogeneous to defeat any effort to argue that the path to economic development is unique. Yet there may be a remarkable amount of generality in the

2 The tendency for countries to grow at different but intertemporally constant rates cannot be attributed to different "natural" rates of growth. The only thing "natural" about growth is for population to increase at least partially in response to higher income, but this again is part of the disequilibrating role of momentum. Countries in which GNP is growing will also be countries in which populations are growing.

proverb "nothing succeeds like success".

The situation with respect to the dynamics of individual or group incomes within countries is much less clear. Comparatively little time series data on individual or group incomes is available, especially for LDCs. The crude snapshots of the distribution of income at different points of time that are avilable, however, generally show that the distribution of income becomes more unequal as development proceeds (See, Fishlow 1972, Chenery, et. al 1974). In my opinion this finding should not be seen as something new or surprising, but only as another dimension within which the "nothing succeeds like success" addage applies. Incomes that are growing tend to keep growing while those that are stagnant tend to remain stagnant except in the highly competitive, information-complete MDCs. Moreover, the way in which this micro level process of increasing income inequality takes place lies at the heart of the growth process and is almost inevitably a process best characterized as one of dynamic disequilibrium.

In the remainder of this paper we attempt to provide explanations for the important role that momentum seems to play in the growth process. Common to the various phenomena pointed out and explanations offered are several disequilibrating processes. While several of the phenomena and processes to be discussed are already well-known, their implications for equilibration, or rather the failure to equilibriate, are insufficiently recognized. We begin with the macroeconomic processes of technological change and capital formation, and move into human capital and income distribution before concluding with a final section on political economy.

III. Technological Change

Technological change, as we know it over the last several hundred years, may be characterized by (1) the increasing importance of, and wider range of scale in which there are, economies of scale, (2) the increasing degree to which capital is used relative to labor at given factor prices, and (3) decreasing flexibility in production processes, especially the increased difficulty of substituting plentiful factors of production (like labor in most LDCs) for scarce ones (like capital). The degree to which these tendencies apply to any particular industry, of course, varies from industry to industry. Indeed, these tendencies have historically been far more typical of technological change in manufacturing than in agriculture or services. Recently, however, the Green Revolution has been bringing the same kind of changes to agriculture.

While technical efficiency, output per unit of inputs (appropriately weighted), has generally increased in the process, the overall effects of these changes for LDCs have not been altogether favorable.

The limited size of the domestic market in most LDCs, which usually is not supplemented by the potentially large size of foreign markets (because the latter are generally both unprofitable and excessively uncertain), prevents LDCs from taking advantage of the scale economies. Even the largest LDCs tend to have domestic markets that are sufficiently fragmented to force them to choose between dependence on imports and domestic production either in small scale, high unit cost plants or in larger but underutilized ones. At the same time, the other two characteristics of technological change combine to guarantee that even rapid rates of industrial growth will generate minimal increases in industrial employment. The problem is compounded by the primary importance that seems generally to be attached to scale in the choice of technology.[3]

Although these deleterious effects may not be completely inevitable, the costs of avoiding them may be sufficiently high to make it rather unlikely that they can be avoided. One obvious alternative would be to develop alternative small scale technologies more appropriate to the conditions of LDCs. Except for a few relatively unimportant production processes, however, such technologies are not presently available and the costs of their development might well be prohibitive. Another alternative is to rely on multinational corporations (MNCs) which can supply the scarce factors, the know-how, and even the ability to market internationally, but often at a price in terms of foreign exchange and dependence which is sufficiently high to make such alternatives unpalatible politically and socially. Moreover, the high degree of dependence on MNCs is likely to reduce the spread effects and linkages from such activities to the rest of the economy, thereby greatly reducing their potential benefits.

If individual LDC's, each with economies typified by limited domestic markets, could suddenly be transformed into a large common market of LDCs in which rational specialization could be practiced within a scheme providing that the benefits could be shared equitably among participating countries and economic groups within countries, perhaps industrial development could become a more effective engine of growth. Failing both the technical means of identifying and designing such schemes and the political and social will and determination to implement them, not a single economic integration scheme has been successful in this respect.

With all of the possible alternative strategies of achieving the potential benefits of the right kind of technological change apparently

3 As Shen (1973) has argued, there may be a lexicographic ordering with respect to the choice of technology wherein because of the overriding importance of economies of scale, firms choose the largest scale consistent with the foreseeable size of the market before considering the other dimensions of technological choice.

nonviable, actual changes in technology have played an inherently disequilibrating role, accentuating the scarcity of capital and the abundance of unskilled labor, reducing the potential competitiveness of LDCs in industrial markets. Most industry in LDCs tends to generate political pressures for protection of domestic industry, that compound the difficulties of achieving the potential benefits of technological change. Existing productive structures are made more rigid, inflexible and less innovative as a result of the X - inefficiency increasing effects of the monopolistic structures of domestic production and non-tariff barriers to trade, and hence to international competition.

The fact that the structure of protection tends to be a almost invariably biased toward finished manufactures and against the machinery and intermediate manufacturing sectors which, if developed effectively, might in the medium to long-term have the effect of producing a machine-embodied technology that is more suitable to LDC conditions. The dependence of domestic industries on protection diverts scarce entrepreneurial activity from positive-sum activities, like management and supervision to zero-or-negative-sum activities like bribing government officials for special favors, and protection. Domestic protection, together with the underpricing of foreign exchange, reduces the profitability of exporting and thereby limits the opportunity to take advantage of economies of scale. Because (1) the structure of tariffs tends to discriminate against older equipment, (2) international transport costs are more closely connected to product weight than value and hence are higher in relation to total cost for older equipment, (3) there are shortages in supervisorial personnel, (4) the costs of night labor tend to be considerably higher than day labor, LDCs are unlikely to be able to take advantage of seccond-best alternatives like longer production runs and more labor-intensive older equipment. Even the potentially favorable effect of increased energy (and hence transport) prices (at world prices) in limiting the economic advantage of large scale production techniques and hence in increasing the dynamic viability of small scale production techniques is often dissipated away by the common failure of LDC governments to raise the domestic prices of fuel and other forms of energy in step with foreign prices.

Since most technological changes are embodied in increasingly capital-intensive machinery, technological change, even of the suboptimal variety, requires capital formation and foreign exchange earnings. Capital accumulation and technological change are hence not necessarily independent phenomena as textbook presentations would sometimes have them. Furthermore, know-how is also required to make the capital and technology work effectively, and know-how requires previous investments in research and development (R and D) and on-the-job-training (OJT), or more imports (in this case of personnel).

In the neoclassical paradigm the size distribution of firms in any industry is characterized as either anonymously homogeneous or subject to the random shocks of good and bad fortune. Even when in the Schumpeterian tradition profits are allowed to vary with entrepreneurial talent or risk taking ability, the effect of the varying degrees of risk associated with different rates and forms of innovation, would in the long run be for the higher rate of return associated with the early innovator to be offset by the greater risk of failure. One would expect, therefore, firm size to be either distributed narrowly around the mean or modal size or less narrowly (because of the unequal distribution of fixed factors like location) and perhaps subject to random shocks but constant in the long-run.

On the other hand, in an environment characterized by the scarcity and costliness of information and market imperfections, firms that are large (and growing) will have the benefit of learning-by-doing economies, more and better ways of cushioning risk (as for example, by moving into multiproduct lines), and the ability to finance and take advantage of the scale economies derived from the capital-embodied and increasingly capital-intensive and larger scale technology, and thereby the ability to survive and grow further. Firms whose scales are growing rapidly and which have accumulated sizeable capital and know-how, are thereby a position to move ahead further. As the literature on innovations has emphasized, firms which are not growing and do not anticipate growing markets are unlikely to be willing to adapt these initially very costly innovations. All of these tendencies are, therefore, part of the explanation for the importance of momentum in economic development.

Before going on to a discussion of the next mechanism, I wish to underscore the point that what negates the validity of the neoclassical adjustment mechanisms is not the existence of economies of scale, and technological change biases, but rather their importance. Even in agriculture where these factors are relatively less powerful than in manufacturing and services, detailed studies of specific technological changes [e.g. Day (1963)] and Singh and Day (1967), indicate that only extremely and unrealistically large changes in relative factors would make it economic for more labor intensive techniques and smaller scale to be retained in the face of such technological changes. I do not mean to imply that changes in relative prices would not help. Indeed, I would insist that such changes could help a great deal. What I do mean to say, however, is that such changes are unlikely to be sufficient in themselves to reverse the seemingly inexorable process of technological change.

IV. Capital Formation

The neoclassical assumptions of full information and vigorously competitive markets are especially critical to the process of capital formation. Since capital formation involves current sacrifice and almost inevitably risk, it can never be a passive process. Decisions to save, and especially to invest, must be induced, or more appropriately, forced, especially when entrepreneurial capacity or at least decision-making capibility may be somewhat limited as in many LDCs [Hirschman (1958)].

Yet it is precisely these assumptions of full information and perfect competition that are so unrealistic in the LDC context. As a result, the pressures on individual firms to undertake investments in the continuous struggle to keep ahead of the competition, are just not there, or at least are substantially weaker than in MDCs. In the monopolistic environment of the highly protected industrial sectors in LDCs, investments in new technology can almost never be regarded as necessary for survival. To the extent they invest at all established firms do so in new industries or product lines, often under licensing arrangements with foreign companies. In the LDC context in which information is far from perfect and costless, trademarks are especially valuable, making it economic for local firms to enter into licensing arrangements with foreign firms. Nevertheless, the effect of these arrangements is certainly to further restirct competition and hence to further limit the pressures to invest. As Hirschman (1958) pointed out, the complementarities from investments in social overhead capital are unlikely to be sufficient for compelling investments in directly productive activities.

Failing these, what might be regarded as normal, inducements for savings and investment, there are but four other possible kinds of investment opportunities: (1) import substitution, (2) exploitation of previously unutilized mineral resources, (3) new products and (4) exports. Each of these, moreover, has its limitations as a consistent, dependable source of positive investment decisions.

Of these possibilities import substitution is probably the most important; indeed, import substitution can provide a considerable number of investment opportunities, but, once the best opportunities have been seized, those remaining are bound to be more and more marginal in value and the process eventually becomes self-defeating. Import substitution is more likely to reach its dead end earlier the more the structure of protection is biased, as it so commonly is in LDCs (Little, Scitovsky and Scott 1970), in favor of finished manufactures and against the intermediate manufactures and capital goods which generate the greatest interindustry linkages to other sectors. The second of the opportunities listed above is, of course, available

only to those fortunate countries with substantial endowments of natural resources. Moreover, the potential importance of such opportunities, even for the lucky few, is limited by the fact that, because they are lacking in know-how in the exploration for, and later in the exploitation and marketing of, such resources, LDCs are necessarily dependent on foreign corporations which typically exude little in the way of linkages (except perhaps financial ones) to other investment opportunities [Hirschman (1977)]. In such circumstances, high actual or potential rates of return may well be insufficient for inducing positive investment decisions.

In a world of full information and competitive capital markets the possibility that LDCs will be able to invest in the development of new products and exports would seem very promising indeed. However, with virtually no access to information about new products, and very limited and shaky information pertaining to export markets, to the trade and exchange policies of other countries and to the investment plans of competing firms in those countries, sizeable investments in manufacturing of new products and/or for export are highly unlikely. The possibility that potential export markets would signal investsments in production for export is further limited by the anti-export bias of the exchange and tariff policies typical of most LDCs.

Because capital markets are much more imperfect in LDCs than in MDCs, internal sources of finance tend to be relatively more important. It is, of course, precisely in such circumstances that the motivations for savings is likely to be limited by the dearth of competitive pressure to undertake investment. Other sources of savings are, of course, government savings and household savings. Although the determinants of these sources of savings are much better understood, the problems of generating savings in these sectors in LDCs are no less difficult to overcome.

Empirical research around the world has tended to give increasingly strong support for hypotheses pertaining to savings behavior, such as the permanent income and life cycle hypotheses, that view savings as resulting from disequilibrium. Since firms, governments and households find it expensive to make major adjustments in their consumption patterns in the face of year-to-year changes in their incomes, such expenditures tend to be rather sticky, and closely tied to expected or long-run levels of income. Each such sector, therefore, tends to save a substantial portion of its income only when its income is growing, and growing sufficiently rapidly to outstrip expectations. In other words, the only sure way to generate a sizeable domestic savings rate is to get the economy to grow rapidly. Once again we are led back to the theme emphasizing the role of momentum in economic development. Once the economy is growing, it tends to be relatively easy to keep it going, but how to get it going?

There is, of course, the possibility of utilizing foreign savings, and indeed the cross section and time series studies of Chenery and his colleagues have shown that at low levels of income per capita a certain amount of dependence on foreign savings is common and even "normal". As mentioned above, however, the costs of dependence on foreign savings in terms of future capital outflows, decreased linkages from investment to complementary domestic investments, etc. are likely to be high. Moreover, the costs of such investments, are likely to increase with the need for them. Countries in which foreign exchange and capital constraints are the tightest often have to offer very high inducements to lure even small amounts of foreign investments to the country. This is likely to be particularly true when governments are politically shaky. Not surprisingly, one hears reports of particularly attractive inducements being offered to foreign investors in Chile and Greece immediately after the military overthrows of long-standing civilian governments in these countries.

In contrast to the neoclassical world of perfect and costless information, actual savings and investment decisions seem to be subject to the changing whims of subjective expectations. In this context, the expectations of any individual investor can be very much influenced by what other investors are doing. Since the activities of foreign enterprises and governments are likely to be particularly conspicuous in this context, the actions of such organizations can play the crucial role of providing signals of confidence in the economy (or lack thereof) to other potential investors, foreign or domestic, private or public.

Once again, there are strong features of disequilibrum working. Countries that have been successful in attracting foreign investment, are likely to find it relatively easy to attract additional investors at relatively low cost. The investment climate operates like a selffulfilling prophecy. As long as the climate is generally thought to be favorable, foreign enterprises are relatively confident about future prospects and are willing to sink substantial investments into the economy. Restrictions on capital repatriation, overinvoicing of imports, transfer pricing, etc. in such circumstance are, therefore, likely to be redundant. If, on the other hand, local conditions are shaky and the investment climate is considered unfavorable, the very same foreign enterprises will most rationally want to "take out the maximum" and "put in the minimum". This induces concern by host populations and their governments about the deleterious influences of foreign investments in such circumstances and usually results in the imposition of exchange controls and other restrictions on foreign enterprises. Such restrictions are almost inevitably accompanied by arbitrary rules for administering them, and for distinguishing admissable forms of conduct in such enterprises from inadmissable ones. Such arbitrary rules and restrictions are, in turn, likely to induce further efforts on the part

of the regulated enterprises to get around these restrictions legally or illegally, usually to the detriment of the local economy. For example, efforts to control profit outflows are likely to induce more flagrant cases of overinvoicing of imports and especially the overpricing of capital and intermediate goods transferred within the firm, for example, from the parent foreign firm to its domestic subsidiary in a LDC.

Strangely, even the more modern and less neoclassical analyses of foreign aid, such as the programming and "two-gap" approaches of Chenery and Strout (1966), Weisskopf (1972), have emphasized the neoclassical substitution possibilities between foreign and domestic sources of savings. Although such models have utilized inequalities as well as eqalities, making them disequilibrium models in a certain sense, they are basically static models. They fail to admit market imperfections, informational constraints and expectations formation. In my opinion, some of the most important influences of foreign assistance are dynamic, such as the signalling effects to private investors referred to above, the postponement or acceleration of policy changes and other domestic reforms, and the influence on future rates of inflation. In almost all these respects, foreign aid or capital movements would seem easier to get and more likely to generate positive feedback effects if a certain amount of momentum for development has already been achieved.

By and large, then, capital formation, which lies at the heart of the classical processes of accumulation and growth, of technological change and of allocation, can be characterized as strongly influenced by mechanisms which allow households, businesses, governments and countries whose incomes are growing most rapidly and are subject to the strongest competitive pressures to accumulate and grow while those whose incomes are slow-growing and unfettered by competition tend to stagnate.

V. Human Capital, Labor and Income Distribution

Investments in human capital, such as education, health and migration, may display some of the same characteristics of disequilibrium dynamics we have observed with respect to technological change and physical capital formation. Moreover, these processes are intimately related to the explanation of why and how incomes tend to become more, rather than less, unequally distributed as development proceeds.

In the first place, the returns to investment in any one form of human capital are likely to be highest for those individuals or groups already well-endowed with respect to other forms of human capital. For example, investments in education are likely to be most profitable for those individuals with the best health, who are likely to be able

to have longer working lifetimes, and fewer days off on account of sickness than others. Similarly, enterprises are likely to want to invest more in OJT for individuals with higher levels of formal education. Likewsie, the rate of return to migration is almost always considerably larger for people with relatively high levels of education.

Second, since capital markets for investments in human capital are especially underdeveloped in LDCs, the costs of such investments (often direct costs, but certainly the opportunity costs) have to be internally financed, normally within the individual household. Considering what has been said about household savings behavior, this means that it will be primarily families whose incomes are high and growing that will be able to keep their children in the educational system beyond the minimal periods required by law. As Bowles (1972) and others have pointed out, there are numerous other factors, such as the educational status of one's parents, and the importance of informal, in-the-home training in raising the productivity of formal education, and variations in family size by income and educational level that make educational investments self-selective and conducive to intergenerational inequality.

Third, educational and health care opportunities tend to be greater in number and of higher quality in urban areas than in rural areas, thereby benefitting the already relatively advantaged urban resident relative to the rural resident and inducing the younger, better quality and more educable individuals in rural areas to migrate to urban areas.

Fourth, education and migration (the latter because it changes one's neighbors and the peer group with which one identifies) can affect attitudes and tastes and thereby indirectly can induce changes in occupation, labor force participation (especially on the part of females), fertility and numerous other factors that influence income. These processes, therefore, may be expected to generate positive and negative feedbacks to the economy that are completely ignored in traditional analysis that assumes interpersonal independence of utility functions.

Fifth, since the direct costs of education and migration can be substantially reduced if one "knows the ropes" or is able to take advantage of hand-me-down uniforms or books, or to share lodging and the preparation of meals, etc., individuals are more likely to attend higher levels of schooling, and/or migrate to urban areas if they have other family members who have done so before them. Education and migration, therefore, tend to be self-perpetuating processes.

Another point worth considering is the nature and usefulness of education. It may be more appropriate to conceive of it as a filtering

procedure and screening device providing at most, a way of asking questions and a guide for where to look for or how to find answers, more than as a body of knowledge that is mastered, processed and applied, as conventionally conceived. As a screening device, education plays an important role in determining where individual recipients of education will stand in the queues for jobs and the rate at which they move up in the hierarchy of jobs. After all, what more important task do professors and teachers perform than the writing of letters of recommendations for their students and colleagues? The educational system is perhaps like a giant examination in which detailed measurements are taken of each student's abilities to learn new techniques and to perform various kinds of tasks. These measurements are used in drawing inferences about future learning rates and abilities to move through the relevant hierarchies and therefore are important in the screening procedure. By stressing the role of educatoin in screening I do not mean to imply that education is not useful. Indeed, in a world of imperfect information and high information costs, the vital role that education plays in this respect makes it a particularly valuable method for achieving an efficient allocation of people to jobs.

What is often overlooked in the attempt to stimulate human capital formation at virtually any cost is that, unlike physical capital, human capital can depreciate if it is idle. While the act of having made educational investments at one point in time may well be sufficient for gaining a favored position in the job hierarchy and hence in the distribution of income at all subsequent points of time (because of the use of education as a screening device and the tenure characteristics of most jobs in the modern sector), that same act will not necessarily guarantee that the productivity of the individual's capital stock will be maintained. Indeed, the same lack of competitive pressures referred to above will often lead to the underutilization of human capital and hence to its rapid depreciation. How often one confronts in LDCs once-literate people who can no longer read or write, and professions with advanced foreign degrees who are not only not up to date, but also not even in command of many of their former capabilities!

Almost all of these are, in my opinion, fundamental characteristics and effects of human capital formation in general but of education and migration in particular which are ignored in the heretofore dominant neoclassical approach to development wherein information is assumed to be complete and costless, factors are homogeneous and impersonal, utility functions are independent, markets are competitive and analysis is static.

It is not surprising, therefore, that the implications of education and migration for development and distribution, when considered

in this new light, are very different than when they were considered within the neoclassical framework. Whereas additional investments in human capital in the neoclassical framework are generally conceived of as being marginal and once-and-for-all and as having the effect of equating rates of return to different levels and forms of such investment, the new perspective suggests positive feedbacks through time and disequilibration.

Consider for example, the role of rural-urban migration. In the classical-neoclassical synthesis of the labor surplus model, rural-urban migration was seen not only as a convenient method for solving the underemployment problem of traditional agriculture, and thereby eliminating the thorny problem of explaining how people can be employed beyond the point justified by the equality between marginal productivity and the subsistence wage that profit maximization requires, but also as a viable and indeed, minimum cost strategy for achieving economic development. With all labor treated as homogeneous and complete information, employment up to or beyond the point of zero marginal productivity is irrational. In the absence of transactions and transfer costs it was thought that labor could be transferred costlessly to the urban sector and could begin immediately earning wage rates higher than those in rural areas. Since with homogeneous labor it is the marginal or unemployed worker who migrates, the process of migration is equilibrating in the sense that it raises the marginal productivity of labor for those remaining in agriculture while lowering that in the urban sector. Under competitive product and capital markets, the capitalist's rent is entirely saved and invested, and the resulting capital formed embodies neither labor-displacing technology nor scale economies, but rather absorbs more labor and plants the seed for future investment and further labor absorption. Eventually, surplus labor, the wage differential and hence dualism will disappear, and the inequality in the distribution of labor income (though perhaps not overall income) will be reduced and indeed eliminated. It is a perfect strategy for success which insures that economic development will be a smooth, equilibating process typified by continuous marginal adjustments.

The facts of high and generally growing urban unemployment rates and the persistence of urban-rural wage and income differentials have, of course, at long last been widely recognized, but unfortunately the result has to a large extent been to stimulate still further permutations on the old theme. For example, Harris and Todaro (1970) attempted to incorporate even these unfortunate consequences as part of an overall equilibrating process by making the unemployment rate serve as the adjusting variable that maintains equality between the rural wage rate and the probability of-being-employed-weighted urban wage rate. In view of the fact that per capita incomes in urban areas

are typically several times as large as those in rural areas, and yet urban unemployment rates are rarely more than 15 or 20 percent, the Harris-Todaro model cannot possibly be correct. The only way of saving even that model would seem to be to disaggregate the urban labor force into several sectors, each with different wage rates, and degrees of usefulness in the search for better jobs. See, for example, Fields (1975). This, of course, leads one quite far from a neoclassical model and all that is in equilibrium are the wage differentials themselves.

In contrast, in the light of the modern, nontraditional insights referred to above, rural-urban migration can constitute the epitome of the disequilibrating process. In the absence of perfect or costless information, the decision to migrate is prompted by subjective expectations about the wage differential, the costs of relocating and of living in urban areas, the probability of finding high-paying jobs, etc. These subjective expectations are likely to be influenced by who one knows, who one's relatives are, where they live, how much education and self-confidence one has, and numerous other factors. Migration is therefore a selective process and the labor force, even the rural labor force, is not of uniform quality. If it is the younger, better educated, more ambitious, healthier, more self-confident, adjustable and risk-bearing individuals who migrate Yotopoulos and Nugent (1976), then the process of migration may well increase the gap in average labor productivity.

Another important fact to bear in mind is that the inequality in the distribution of labor incomes in urban areas of LDCs tends to be considerably greater than that of rural incomes [Berry (1976), Weisskoff and Figueroa (1976), Chenery, et. al. (1974)]. This reflects, of course, the aforementioned fact that urban labor markets are highly compartmentalized and differentiated. The model displaying the closest fit to this reality is probably some variant on the job competition model of Thurow and Lucas (1972). Since different jobs have different degrees of responsibility and hence, in principle, different productivities, the holders of these different jobs command different wage rates. Naturally, there tend to be longer queues for the jobs higher up in the hierarchy of jobs than for those lower in the hierarchy. Given the general importance of learning-by-doing in educational and employment opportunities and the dependence of one's state in the job hierarchy at any one point in time on previous states[4] and the rate of advancement through the hierarchy of jobs, which in turn depends on the evaluations of one's educational performance and other screening devices, the greater variation in wage rates from job to job in the urban sector is an important if not absolutely es-

4 One should also bear in mind that the states in which one might be are also changing over time as a result of technological change and capital formation.

sential ingredient in the explanation of urban-rural migration.

The way in which individuals earn and sustain higher incomes is almost invariably to move to higher paying jobs. Using the jargon of the Thurow and Lucas (1972) job competition model, individuals who choose to move from jobs lower in the hierarchy of jobs to higher ones have to join the queus of people looking for these higher-paying jobs. Since such choices are largely voluntary, comparatively few people actually being expelled from their jobs, the process is self-selective. Those who are most confident of their abilities to move to the head of the queue for any particular job in the hierarchy of jobs, are the ones most likely to do so.

The process of migration is, therefore, no longer the happy one it was depicted to be in the classical-neoclassical synthesis of the surplus labor model. It deprives agriculture of the human capital stock it has invested in. It leads to urban problems in the form of open unemployment and urban slums. It exacerbates the urban bias of national economic policies that serve to strangle exports, accelerate the approach to the dead-end in import substitution, and further increase the price of the plentiful factor (labor) relative to the scarce one (capital). It almost inevitably increases income inequality in the urban areas themselves, and in the country as a whole.

VI. Some Concluding Insights into Political Economy

Another shortcoming of the neoclassical approach to development economics is that it assumes that policy is entirely exogenous. In a short-run setting this may be legitimate and realistic. In the long-run however, the success or failure of development efforts will be strongly influenced by policy and institutions, and in the long-run these, too, become variables dependent on feedbacks from changing circumstances in the economic sphere.

The econometric work of Birnberg and Resnick (1975) represents a pioneering attempt to construct and test a political economy model in which in a colonial environment there is feedback from commercial exports to colonial government policies, including free trade and expenditures on social overhead capital that are tilted toward the trade sector, which in turn stimulate the expansion of exports and imports, inducing further private investments in the primary sector and commerce, immigration, and in the process raising incomes. Indeed, with such positive feedbacks going for them it is no wonder that colonial environments were so condusive to rapid economic growth (though not without large social costs) over very considerable periods of time. Again, the colonial development strategy represents another example of how momentum plays an important role

in the developmental process. If commercial exports and hence commerical interests had not been able to get a toe hold in these environments, e.g., if such countries had been governed by foreign priests, the process would certainly not have occured, and stagnation might well have been the result.

Kelly, Williamson and Cheetham (1972) have sketched out alternative strategies in a dual economy setting wherein migration to urban areas can increase labor force participation rates, savings rates, change the composition of demand toward industrial activities, inducing increased investments in these activities, increasing urban employment, etc. One could easily extend their conceptual framework to include political factors as well. As countries become increasingly urbanized, their urban populations come to carry larger and larger weights in the decision-making process. New urban-oriented institutions are created (banks, credit and financial institutions, and government agencies) and old institutions are transformed from the rural orientations with which they were created into urban ones. Examples of transformed institutions abound. A common example is the marketing board set up to help small unorganized peasant farmers improve their bargaining position and thereby get a better share of the benefits of their export crops vis a vis foreign monopsonists. Later on such boards, Ghana's Cocoa Marketing Board for example, come to serve as agents of urban development by taxing the farmers to pay for industrial and social overhead capital investments in urban areas. Another kind of example is the organization, like CONASUPO in Mexico, that is set up to support and stabilize agricultural prices, to provide storage facilities, and alternative sources of credit and market outlets to small farmers, but which over time evolve into marketing enterprises in the urban centers that attempt to keep food costs as low as possible to the urban consumer, in some cases becoming heavily dependent on imports as the source of supply. Monetary, fiscal, trade and exchange policies and social overhead expenditures all become urban and industrial-biased. Buttressed with positive feedbacks of this sort, an import substituting industrialization and urbanization strategy can become a viable and dynamic engine of growth for some time.

Where momentum is lacking, however, such a strategy can become self-defeating and sterile. For example, if domestic savings cannot be generated to finance the social overhead capital, it will be necessary to resort to deficit financing which will be inflationary. Likewise, if exports or foreign capital falter, trade and exchange controls will be resorted to for balance of payments reasons. Either or both circumstances lead to political pressures for more controls which lead to further distortions in resource allocation, emphasis on zero-sum activities like competing for scarce import licenses, avoiding controls,

etc., more inflation and financial repression. Without momentum, countries are likely to get mired down in a viscious circle of financial repression, distortions, social conflict and political instability, from which it may be difficult to break out [McKinnon (1973) and Shaw (1973)].

Thus we have seen that many of the mechanisms that from a neoclassical vantage point are almost necessarily eqilibrating from a different, more modern and in my opinion more realistic vantage point can very well be disequilibrating in such a way that individuals, groups or countries with momentum are likely to continue to grow whereas those without it are likely to stagnate. These disequilibrating factors are, of course, only tendencies which can in certain circumstances be more than offset by countervailing equilibrating ones.

References

Bauer, Peter T. and Basil S. Yamey, *The Economics of Underdeveloped Countries,* Chicago: University of Chicago Press, 1957.

Becker, Gary S., "An Economic Analysis of Fertility," in *Demographic and Economic Change in Developed Countries,* New York: National Bureau of Economic Research, 1960.

Berry, Albert and Miguel Urrutia, *Income Distribution in Colombia,* New Haven: Yale University Press, 1976.

Birnberg, Thomas B. and Stephen A. Resnick, *Colonial Development: An Econometrci Study,* New Haven:: Yale University Press, 1975.

Bowles, Samuel, "Schooling and Inequalities from Generation to Generation," *Journal of Political Economy,* 80, No. 3, pt. 2 (May/June), 5219-5251, 1972.

Bruton. Henry, *Principles of Development Economies,* Englewood Cliffs, New Jersey, Prentice-Hall, 1965.

Cameron, Rondo, *Banking in the Early Stages of Industrialization,* London, New York: Oxford University Press, 1967.

Caves, Richard E., "Vent-for-Surplus Models of Trade and Growth," in R.E. Baldwin et. al, eds., *Trade, Growth, and the Balance of Payments, Chicago: Rand,* McNally, 1965.

Chenery Hollis B. and Alan M. Strout, "Foreign Assistance and Economic Development," *American Economic Review,* 56 (Spetember), 679-733, 1966.

Chenery, Hollis B., et. al., *Redistribution with Growth,* London: Oxford University Press, 1974.

Day, Richard A., "The Economics of Technological Change and the Demise of the Sharecropper," *American Economic Review*, 57, 427-449, 1967.

Easterlin, Richard A., "An Economic Framework for Fertility Analysis," *Studies in Family Planning*, 6 No. 3 (March), 54-63, 1975.

Enke, Stephen, "The Gains to India from Population Control: Some Money Measures and Incentive Schemes," *Review of Economics and Statistics*, 42, No. 2 (May) 175-181, 1960.

Fei, J.C.H. and Gustav Ranis, *Development of the Labor Surplus Economy*, Homewood, Illinois: Irwin, 1964.

Fields, Gary S., "Rural-Urban Migration, Urban Unemployment and Underemployment and Job-Search Activity in LDCs, "*Journal of Development Economics*, 2, No. 2 (June) 165-187, 1975.

Fishlow, Albert, "Brazilian Size Distribution of Income," *American Economic Review* 62 (May) 391-402, 1972.

Gerschenkron, Alexander, *Economic Backwardness in Historical Perspective*, Cambridge: Belknap Press, 1962.

Harris, J.R. and Michael P. Todaro, "Migration, Unemployment and Development: A Two-Sector Analysis," *American Economic Review*, 70 (March) 126-142, 1970.

Hirschman. Albert O., *The Strategy of Economic Development*, New Haven: Yale University Press, 1958.

————, "A Generalized Linkage Approach to Development, With Special Reference to Staples," *Essays on Economic Development and Cultural Change in Honor of Bert F. Hoselitz*, Supplement to *Economic Development and Cultural Change*, 25, 67-98, 1977.

Kelley, Allen C., J.G. Williamson and R. Cheetham, *Dualistic Economic Development*, Chicago: University of Chicago Press, 1972.

Leibenstein, Harvey, *Economic Backwardness and Economic Growth*, New York: Wiley, 1957.

Levin, Jonathan V., *The Export Economies: Their Pattern of Development in Historical Perspective*, Cambridge, Mass.: Harvard University Press, 1960.

McKinnon, Ronald I., *Money and Capital in Economic Development*, Washington, D.C.: Brookings Institution, 1973.

Nurkse, Ragnar, *Problems of Capital Formation in Underdeveloped Countries*, New York: Oxford University Press, 1953.

Prebisch, Raul, "Commercial Policy in the Underdeveloped Countries," *American Economic Review*, 49 (May) 251-273, 1959.

Schultz, T. Paul, "Explanation of Birth Rate Changes Over Space and Time: A Study of Taiwan," *Journal of Political Economy,* Supplement (March/April), 1964.

Shaw, Edward S., *Financial Deepening in Economic Development,* New York: Oxford University Press, 1973.

Shen, T.Y., "Technological Diffusion, Substitution and X-Efficiency," *Econometrica,* March, 1973.

Simon. Julian L., "Population Growth May be Good for LDCs in the Long-Run:A Richer Simulation Model," *Economic Development and Cultural Change* (January), 1976.

Singer,Hans W., "The Distribution of Gains Between Investing and Borrowing Countries," *American Economic Review,* 40 (May), 473-485, 1950.

Singh, I.J. and Richard H. Day, "A Microeconometric Chronicle of the Green Revolution," *Economic Development and Cultural Change,* 23, No. 4. 661-686, 1976.

Thurow, Lester C. and R.E. Lucas, "The American Distribution of Income: A Structural Problem," U.S. Congress, Joint Economic Committee, 1972.

Weisskoff, Richard and Adolfo Figueroa, "Traversing the Social Pyramid: A Comparative Review of Income Distribution in Latin America," *Latin American Research Review, I,* No. 2, 71-112, 1976.

Weisskopf, Thomas E., "An Econometric Test of Alternative Constraints on the Growth of Underdeveloped Countries," *Review of Economics and Statistics,* 54, 67-78, 1972.

Yotopoulos, Pan A. and Jeffrey B. Nugent, *Economics of Development: Empirical Investigations,* New York: Harper and Row, 1976.