

**A THEORY OF UNDERDEVELOPMENT:
IMPLICATIONS FOR COMMUNITY DEVELOPMENT POLICY**

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**The summary and conclusions of this paper are designed
so as to be intelligible as a self-contained unit.
Readers who find the argument unconvincing in summary
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by Benjamin Higgins

This paper is concerned with the relationship of community development to general programs for launching a take-off into economic growth in now underdeveloped countries. By "community development" I shall mean the range of activities described in the I. C. A. statement of Community Development Guidelines. I use "take-off" in W. W. Rostow's sense, as developed in his article on "The Take-Off into Self-Sustained Growth".¹ By "sustained economic growth" I shall mean a discernible rise in total and per capita income, widely diffused throughout occupational and income groups, that becomes cumulative and continues for at least two generations. A rise in per capita income for a decade or two followed by a relapse--such as seems to have taken place in Indonesia between 1820 and 1840--is not regarded as sustained economic growth. By an "underdeveloped country" I mean one having announced goals and policies with regard to economic development, and which is regarded as a candidate for technical and capital assistance under the foreign aid programs of the United States and other advanced Western countries. In general, these are countries with per capita incomes below \$500 per year, and with more than half their gainfully employed labor force in agriculture, fishing and forestry; or more than one-third of national income generated in this sector. Other indices of underdevelopment are relatively high rates of

¹W. W. Rostow, "The Take-Off into Self-Sustained Growth, Economic Journal, March 1956.

illiteracy, fertility, and mortality, relatively low standards of nutrition, and the like.¹ Underdeveloped countries usually have a level of net investment which is less than 10 per cent of national income, but there are exceptions to this rule, such as Burma, Argentina, Brazil, Chile, and Mexico.

A few words of caution seem necessary here. First, it is important to distinguish between underdeveloped countries and underdeveloped areas. Some countries with average incomes above \$500 per year have large regions in which the per capita income is substantially lower. Striking examples of this sort are Italy, with its "developed" North and its "underdeveloped" South, or Venezuela with its rich petroleum industry superimposed on an otherwise little developed economy; but even in such countries as Canada and the United States, one can find regions where per capita income is so low as to warrant the use of the term "underdeveloped".

Secondly, the countries falling into our classification of "underdeveloped" display wide differences in their economic situations. At least four categories of underdeveloped areas can be suggested:

(1) There are countries which have per capita incomes low enough to put them into the "underdeveloped" category, but which have abundant resources and enough industrialization and agricultural improvement to bring increases in per capita income which compare favorably to those achieved in advanced countries. Argentina, Brazil, Ceylon, Colombia, Mexico, Peru, the Philippines, Turkey, Italy and Venezuela seem to be in

¹For a longer list of characteristics of underdeveloped countries see Harvey Leibenstein, Economic Backwardness and Economic Growth, New York, 1957, pp. 40-41.

this category.¹ The problem in these countries is one of continuing growth, reducing open and disguised unemployment, and avoiding misallocation of resources and maldistribution of income in the process.

(2) There are countries like Burma, China, India, Thailand and perhaps Pakistan whose per capita incomes are currently very low (under \$100 per year), which do not appear to have abundant resources relative to the size of their populations, but where per capita income is currently rising. Per capita income in India is about \$60 per year. Considering her 360 million people, her enormous areas of aridity, and her limited mineral and power resources,^{she} cannot be considered a "rich" country, in the sense in which this term may be applied to Indonesia. Nevertheless, it appears that per capita income in India is rising as a result of the concerted efforts of the government to carry out a development program. In these countries the rise in income must be accelerated, not just sustained.

(3) There are countries which are poor and stagnant in the sense that per capita incomes show no clearly rising trend, but are relatively rich in resources. Indonesia provides an example in this category. Per capita income is higher than in India, Pakistan or China--about \$100 per year--but is not obviously rising and may even be falling as compared to 1939, 1929, or even earlier. Indonesia is a country with a wide variety of resources;^{but} where per capita income is stationary or falling, or rising very slowly from a very low level, there is little hope of growth becoming cumulative without a transformation of the economy. Here the task is not merely to sustain or direct growth already under way, but to

¹Cf. John H. Adler, "World Economic Growth--Retrospect and Prospects", The Review of Economics and Statistics, August 1956, Vol. XXXVIII, No. 3.

launch a process of growth that can become cumulative at some level of per capita income.

(4) There are countries which are very poor (with per capita incomes, say, below \$100 per year) which are stagnant and which are also poor in resources. Examples in this category are Libya, Jordan and Yemen. Per capita income in Libya is estimated at about \$25 per year. Outside the Italian colonization schemes, at least, there is no evidence that per capita income has risen in Libya for some centuries; there is some evidence that it has actually declined. Unfortunately, Libya provides little in the way of resources with which the development planner might work. Such countries need a special kind of plan, emphasizing improvement of existing economic undertakings more than structural change.

Such differences in basic economic situations bring with them differences in the precise nature of the development problem involved. Nevertheless, the basic problem in each case is the same: to obtain a flow of capital that will provide an increase in productivity fast enough to outrun population growth, and thus launch and sustain a process of cumulative expansion; and to acquire a sufficient portion of this capital in foreign exchange to permit importation of raw materials and equipment needed for development, in addition to essential foodstuffs.

The Need For A Theory

In appraising any element of a development policy, such as community development programs, one must have some kind of economic development theory in mind. In working out such a theory several approaches are possible. One might try to proceed directly to the formulation of a general theory, which would include all relevant economic, sociological,

political, and geographic elements. A more modest approach is to ask, first, "What were the strategic factors that brought economic growth to the Western World in the eighteenth and nineteenth centuries?" This approach may provide some clues for explaining the lack of growth in underdeveloped countries. A third approach would be to start with the underdeveloped countries and ask, "What were the strategic factors which prevented growth in these countries in the past, and which must now be overcome by active policy if a take-off to sustained growth is to be accomplished?" This third approach is followed in this paper.

The theory is constructed partly from observation of conditions in underdeveloped countries, and partly from considerations of various analytical models. The observations were made mainly in Indonesia, the Philippines, and Libya, with less extensive and intensive experience in India, Italy, Japan and other countries. The first hand observations are used as a basis for selecting strategic variables from among various analytical models provided in the literature. These strategic variables are then related to each other in a general explanation of economic backwardness.

The main components of the models are as follows: (1) a general theory of the relationship between industrial investment, colonial policy, per capita incomes, and population growth. This analysis makes use of work by Leibenstein and Hagen, but is presented in a somewhat different context.¹ (2) The Eckaus analysis of the factor-proportions problem in

¹Leibenstein, op. cit.; Everett Hagen, "Population and Economic Growth: A Non-Malthusian Model", Center for International Studies, September 1957.

underdeveloped countries.¹ (3) The Solow model of economic growth.² (4) The Leibenstein concepts of low-income equilibrium and minimum effort. (5) The Myint-Prebisch analysis of the role in economic development of improvements in terms of trade.³ (6) The Myrdal concept of cumulative movement away from a comparative advantage equilibrium under colonial economic policy.⁴ These are mainstays of the analytical framework. Two other sets of ideas are incorporated but are less fundamental: (7) Lee's study of the effect of climate on productivity. (8) The concept of "double colonialism", suggested by Professor Hagen for Burma, and implied in the discussion of the role of the Chinese in Asian countries.

We shall present each of these relationships in turn, and then weave them together into a general explanation of underdevelopment.

Population Growth

A part of the general theory of underdevelopment is the thesis that in the now underdeveloped countries, the initial favorable impact of industrial investment (including investment in plantations as well as in mines, petroleum, etc.) was swamped by population growth, in a way which was not true in the now advanced countries. In most countries, the first wave of rapid industrialization seems to have been followed

¹R. S. Eckaus, "The Factor Proportions Problem in Underdeveloped Areas", American Economic Review, September 1955.

²Robert M. Solow, "A Contribution to the Theory of Economic Growth", Quarterly Journal of Economics, February 1956.

³Hla Myint, "An Interpretation of Economic Backwardness", Oxford Economic Papers, June 1954.

⁴Gunnar Myrdal, Economic Theory and Underdeveloped Regions, London: Gerald Duckworth and Company, 1957.

by an initial increase in population growth. In the advanced countries of the West, however, the rise in per capita income was sustained long enough to bring subsequent drops in fertility rates, and permit economic growth to be sustained. The question is why the process in underdeveloped countries was different.

When the colonial powers first came into contact with countries of Asia and Africa, the populations of the latter countries were apparently not much higher, relative to natural resources, than those of European countries. In the case of Asia, moreover, there is little evidence that the level of technology was markedly below that of Europe in the sixteenth century. Countries like Indonesia had gun powder, navigation techniques, similar modes of land and water transport, similar techniques of manufacture and agriculture. There is little evidence that the standard of living of either rich or poor was markedly lower in Asian than in European countries at that time. The Asian countries, like the European ones, were actively engaged in international trade. In the sixteenth century there would have been little basis for forecasting that in 400 years per capita incomes in Europe would be several times as high as in Asia.

During the seventeenth and eighteenth centuries, when the relationship of the colonial powers to Asian and African peoples was mainly a trading one, it is probably true that Europe made more progress towards establishing the pre-conditions for take-off than did the Asian ones. However, even at the beginning of the nineteenth century, populations of many Asian countries were still small relative to resources, and prospects for economic growth would still have been good. By the end of that

century, however, the population growth in countries like Indonesia, India, Japan, and the Philippines was already such that starting a steady rise in per capita incomes had become a difficult problem.

It seems likely that the major impact of industrial investment on the rate of population growth came through the accompanying reduction in mortality rates. As the colonial powers shifted from trading to settlement, in order to exploit more effectively their new interest in plantations and mines (and later in petroleum) several things happened. One was that the colonial powers became more interested in the maintenance of law and order; and in maintaining law and order they hampered the freedom of the native peoples to kill each other. A second was that when they became settlers, the colonists became interested in a higher level of public health. In protecting themselves from malaria, plague, and other diseases, they also reduced the incidence of these diseases among the native peoples. Improved transport reduced the danger of famine. A fourth effect was an initial rise in per capita incomes even of native peoples. This improvement in living standards permitted--if it did not cause--a more rapid rise in the size of the population. Educational standards also rose, which may have had an indirect effect on mortality rates.

It may also be that in some countries industrial investment provided incentives for raising larger families. In Indonesia, for example, after the shift from trading to the "culture system", involving compulsory deliveries of plantation products to the colonial authorities, the easiest way for the people to maintain their standards of living and leisure while meeting the levy of the colonial government was to have more children, to occupy more land, and to devote a larger proportion of the

land to irrigated rice culture, as distinct from the slash-and-burn shifting agriculture. Something similar may be true of other countries as well. Leibenstein, who has devoted more attention to this aspect of the question than the present writer, is quite ready to generalize on this relationship and to argue that initial rises in per capita income will tend on balance to bring initial increases in the "demand for children".

Leibenstein points out that a crucial factor in the course of per capita income is the length of the lag between the drop in mortality rates in the early stages of industrialization and the subsequent drop in fertility rates. It seems quite clear that the population explosions of Asian countries reflect a longer lag than occurred in European countries or in the New World. It is not easy to provide irrefutable evidence as to why this should have been the case. However, there is some evidence that the drop in fertility rates in Europe and the New World was a concomitant of urbanization. Development in Asia and Africa, centered as it was on plantations, mines, oil fields, and exports of raw materials, brought more industrialization than urbanization; the checks on family size brought by the urban industrialization of Europe and the New World operated less effectively in the underdeveloped countries. The drops in fertility rates came eventually in most of these countries, but too late to prevent serious population pressure from arising before planned economic development began.

In part, the difference in the pattern of development in the Asian-African countries and in Europe reflects colonial policy. Initial investment in Europe and the New World was also directed in large measure towards agricultural improvement, mining, and production of raw materials

for export. However, this investment gave rise in advanced countries to subsequent marked expansion of the secondary and tertiary sectors of the economy. It was no part of colonial policy in most of the Asian and African countries to permit development of the secondary and tertiary sectors in the colonies themselves. Where domestic entrepreneurship appeared in the "Western" sector it was discouraged. For example, when the development of the sugar plantations and refineries in the mid-nineteenth century in Java led to a shift from rice cultivation to sugar planting on the part of Javanese landowners, the Netherlands East Indies Government sought to nip this local industrialization in the bud by imposing a regulation forbidding the sugar refineries to buy cane from native growers. Since the Javanese did not have the capital or the technical skills for large refineries, they had to be content with simple refining methods, producing brown sugar for the local market. Similarly, when smallholders' rubber became an active competitor of plantation rubber, the N. E. I. administration imposed a discriminatory tax on smallholders' rubber (in this case without success). Thus the secondary and tertiary sectors associated with industrial investment in the colonies developed in the metropolitan countries rather than in the Asian and African countries themselves. The financing, transporting, storing, insuring, and processing of industrial raw materials took place mainly outside the colonial country.

Industrialization which is confined to the production of raw materials does not lead to urbanization. Indeed, it can proceed very far without disrupting very much the pattern of village life in which the bulk of the people live. There is good reason to suppose, then, that the disastrously

long lag between the initial drop in mortality rates and the subsequent drop in fertility rates is associated with the peculiar form of industrialization in underdeveloped countries, a form which did not bring with it rapid urbanization.

Dr. Hagen attaches importance, not to urbanization as such, but to "built-in technological progress". Wherever and whenever technological progress becomes built into the behaviour patterns of a society, he argues, it will not only bring steadily rising productivity but also, after a lag, falling fertility. For our purpose, Dr. Hagen's variant adds up to the same thing. Industrial development in Asia and Africa did not bring "built-in technological progress" to indigenous society. The new techniques were not the product of their own society and had relatively little impact upon it. Few native people were in direct contact with the advancing technology and the methods of production of the masses of the people were unchanged by it, for reasons that will become more clear in the next section. Thus from the Hagen thesis as well as from the urbanization thesis, a long lag between the initial drop in mortality rates and the subsequent drop in fertility rates could be expected in underdeveloped countries.

It may well be asked whether urbanization without industrialization, such as has taken place in a number of Asian countries since the war, could be expected to have the same effect on fertility rates as the combination of industrialization and urbanization in Europe during the eighteenth and nineteenth centuries. The growth of such cities as Calcutta, Bombay, Tokyo, and Djakarta since World War II does not reflect the "pull" of employment opportunities in industry so much as the "push" of

dwindling opportunities for advancement in rural society. There is of course no assurance that this kind of urbanization will have the same effect on fertility rates as that which took place in the West. One might also ask whether there is any reason for expecting twentieth century Asian society to behave like eighteenth century European society even if economic conditions are similar.

Two points might be made in answer to these questions. The first is that as a policy prescription we will not recommend urbanization as such, but industrialization and urbanization together. The second is that there is some evidence that fertility rates, even in Asian-style cities, are lower than fertility rates in the rural areas of the same country. For one thing, the extended family system tends to break down under urban conditions. The wish to escape the responsibilities of the extended family system on the part of ambitious young people is one of the motives for moving from country to city. Clearly the incentive for limiting family size is much diluted if restricting the size of one's immediate family merely means taking on additional responsibilities for children of brothers, sisters, and cousins. The motive for saving or for working harder and longer is likewise diluted by the extended family system.

Technological Dualism

If the industrial investment which launched the "population explosion" in Asia and Africa had provided opportunities for productive employment for the whole of the population increase, per capita incomes could still have risen. In this section, we shall indicate why industrialization,

in the form it took in underdeveloped countries, did not provide proportionate increase in job opportunities. For this purpose, we turn to the Eckaus analysis of factor proportions, selecting the particular case which seems to conform most closely to the actual conditions prevailing in underdeveloped countries during the nineteenth and early twentieth centuries. This is the case of two sectors, two factors of production, and two goods.

While any such model is necessarily a simplified one, this model is a close enough approximation to reality to provide significant results. The two sectors are the industrial sector (plantations, mines, oil fields, refineries, etc.) and a rural sector engaged in production of foodstuffs and in handicrafts or very small industries. The first of these sectors is capital-intensive. Moreover, it is either characterized in fact by relatively fixed technical coefficients (fixed proportions in which factors of production must be combined), or is assumed by entrepreneurs to be so. The effect on employment patterns is much the same in either case. The other sector has variable technical coefficients; that is, the products could be produced with a wide range of factor proportions. The two factors of production are labor on the one hand and capital, including improved land, on the other. The two products are industrial raw materials for export, and necessities for domestic consumption.

At the beginning of the expansion process, no factor of production was relatively abundant or scarce. However, once the "population explosion" occurred, labor became a relatively abundant factor of production. In some periods the percentage rate of increase in population

probably exceeded the rate at which capital was accumulated in the industrial sector. Because of the relatively fixed technical coefficients in that sector, employment opportunities were not provided at the same rate as that at which the population grew. Far from bringing a shift from the rural sector to the industrial sector, industrialization, after its first impact, may well have brought a relative decline in the proportion of total employment in that sector.

Thus the increased population had to seek a livelihood in the other, variable coefficient sector. The ratio of labor to capital available in that sector rose steadily, and since technical coefficients were variable, techniques in that sector became increasingly labor-intensive. For a while, the response to population growth was to occupy additional land, so as to keep the ratio of labor to land relatively constant; but since other forms of capital were not available in any quantity the amount of land that could be effectively worked by one family was limited. Eventually, even good land tended to become scarce. Where possible more and more labor-intensive techniques--such as irrigated rice culture--were undertaken. Finally, the point was reached in which the marginal productivity of labor fell below subsistence level, if not to zero, even with the most labor-intensive techniques. Disguised unemployment began to appear.

Under these conditions, there was no incentive for groups of individual farmers or small enterprises to make marginal and unrelated investments of capital in the labor-intensive sector, nor to introduce labor-saving innovations. And as yet there is no technology designed to raise output per manhour without also raising the ratio of capital to labor. Nor was

there any incentive for labor as a group to increase its efforts, since the labor supply was already redundant. Thus methods remained labor-intensive and levels of technique, man-hour productivity, and economic and social welfare remained low.

Dr. Eckaus shows that the tendency towards disguised unemployment in the rural sector will be enhanced if technological progress takes a form favoring the capital-intensive sector. There can be little doubt that this process is what in fact occurred. Indeed, during the last two centuries there has been little or no technological progress in peasant agriculture and handicrafts, while technological progress in the plantations, mining, and petroleum sector has been quite rapid.

Dr. Eckaus also demonstrates that the tendency towards disguised unemployment in the rural sector will be aggravated if wage rates are kept artificially high by trade union activities or by government policy. Industrial wage rates which are high relative to productivity provide an incentive for the introduction of labor-saving devices, and consequently diminish still further the capacity of the industrialized sector to absorb the population growth. With the emergence of national states in former colonial countries after World War II both trade union activity, supported by government, and direct government intervention in the labor market, have tended to create artificially industrial high wage rates in a number of countries. These policies have little or no effect on real wage rates in the rural sector. Accordingly, they aggravate the tendency towards technological dualism.

While these countries were under colonial administration, government policy was seldom directed towards creating minimum wages above the productivity level, and trade unions were relatively weak. However,

Leibenstein suggests reasons why the same effects may have been produced even under colonial administration.¹ He points out that at extremely low wage rates the marginal productivity of workers rises with the real wage rate. At a very low wage rate, such as prevailed in most underdeveloped countries before the war, "the labor force is in such a low state of health, vigor, and vitality that it produces relatively few units of work and, as a consequence, the marginal product per final unit of work as well as the marginal product per man is considerably above the wage rate. Or, what is the same thing, the number of work units produced are so few at this low wage that the existing resources could be combined advantageously with more units of work, What all this implies is that at very low wages there may be a labor deficit because the units of work produced per man are so few."

Under these conditions it would sometimes be possible to increase profits by raising wage rates. However, few entrepreneurs had sufficient foresight to adopt this policy. Thus even unskilled labor remained effectively scarce, and the introduction of labor-saving devices was chosen as the best means of dealing with labor scarcity.

The argument is all the more persuasive where skilled labor is concerned. If labor in general was scarce at the existing low wage rates, skilled labor was doubly so. Faced with the alternative of endeavoring to train a skilled labor force so as to permit relatively labor-intensive techniques, or using capital-intensive techniques which would minimize the need for labor, entrepreneurs in underdeveloped countries have chosen the latter course. Finding that even unskilled labor was difficult enough to

¹Harvey Leibenstein, op. cit., Chapter 6.

recruit and manage in large quantities, the entrepreneurs developed the view that "native labor was lazy and undisciplined". This was of course an erroneous view, as has been abundantly demonstrated since World War II by the success of the reverse policy of paying somewhat higher wages to permit greater expenditure of effort and the introduction of training programs. (This policy is of course not the same thing as paying wage rates above marginal productivity; it is rather raising wage rates and marginal productivity to a higher equilibrium level.) But in the past, the inherent tendency towards use of capital-intensive techniques was aggravated by scarcity of labor, particularly of skilled labor. Few efforts were made to discover techniques better suited to the basic factor endowment of the country.

Dr. Eckaus' case also demonstrates (p. 552) that there can be a conflict between full employment and maximization of output in an underdeveloped economy if the pattern of demand does not fit the factor endowment. Unless the indifference maps for the two "commodities" are such that a relatively large share of income is spent on the commodity produced by labor-intensive methods, the allocation of resources that would provide an optimal output may imply unemployment if labor supply is large relative to the supply of capital. When we put the underdeveloped countries into their world setting, it is clear that the actual pattern of demand was such as to bring increasing conflict between the objectives of optimal output and full employment. For the output of underdeveloped countries is comprised of a world market for export goods, and a domestic market for the produce of the rural sector. Whatever was the pattern of demand when the expansion process began, it is apparent that in the course

of time the demand for exports grew at a much higher percentage rate than the demand for domestic products. Indeed, under the conditions described above, the demand for output of the rural sector grew only at the rate at which the total population increased, if not more slowly. The demand for exports, geared to the much more rapidly expanding European economy, increased at a much faster rate. Moreover, the demand from the world market ruled in the political as well as the economic sense; achieving the optimal allocation of resources from the standpoint of the European entrepreneurs and administrators meant an increasing conflict of that goal with the maintenance of full employment in the rural sector of underdeveloped countries. No such conflict arose in the advanced countries. Thus the market forces were such as to bring increasing discrepancies between the standards of living of the rapidly industrializing European countries and those of the underdeveloped countries.

One paragraph in Dr. Eckaus' paper summarizes very well the conditions that actually prevailed in underdeveloped countries.

Suppose that the respective demands for output are such that a large part of the available capital is drawn into the capital-intensive and fixed-coefficient sector. The amount of labor which can be absorbed in these sectors is dependent on the amount of capital available. Since capital is a scarce factor, labor employment opportunities in this sector are limited by its availability rather than by demand for output. The relatively plentiful labor supply is then pushed into the variable-coefficient sector and absorbed there as long as the marginal value productivity of labor is higher than the wages it receives. (pp. 559-560)

Two final points may be made with regard to the Eckaus analysis. First, it shows that the disguised unemployment appearing under these conditions can not be removed by wage-price adjustments alone. Secondly,

first attempts at complicating the model by adding a larger number of commodities suggests that the conclusions are not altered thereby.

The Solow Model of Economic Growth

The primary aim of Dr. Solow's analysis was to show the limitations on the Harrod-Domar formulation of requirements for steady growth in advanced economies. This formulation suggests that steady growth with full employment is rather unlikely; it requires continuous equality of the rate of growth which confirms the expectations of investors, and which depends on savings and investment relationships, with the natural rate of growth, which depends on the rate of population growth and of technological change. There is no reason why these two rates of growth should approximate each other, and if they do not, the analysis shows that there may be cumulative movements away from the path of steady growth. Professor Solow demonstrates in his article that "this fundamental opposition of warranted and natural rates turns out in the end to flow from the crucial assumption that production takes place under conditions of fixed proportions."¹

However, the Solow analysis is also instructive for the purpose of analyzing underdevelopment. If we select from his various models the one which seems to conform most closely to the actual conditions of underdeveloped countries, we obtain additional confirmation of our thesis regarding technological dualism.

Solow demonstrates that with variable coefficients, there will be a

¹Robert Solow, op. cit., p. 65.

tendency for the capital-labor ratio to adjust itself through time in the direction of an equilibrium ratio. "Whatever the initial value of the capital-labor ratio, the system will develop toward a state of balanced growth at the natural rate. . . If the initial capital stock is below the equilibrium ratio, capital and output will grow at a faster pace than the labor force until the equilibrium ratio is approached. If the initial ratio is above the equilibrium value, capital and output will grow more slowly than the labor force." Applying this analysis to the variable-coefficient (rural) sector of underdeveloped countries, we would again conclude that after the initial increase in the labor force, there would be a move towards more labor-intensive techniques. The ratio of capital (including improved land) to labor would then be held constant at the equilibrium rate until land began to give out. From there on, maintenance of the equilibrium ratio would require the allocation of more capital, either in the form of land or in some other form, to the rural sector; but under the conditions of technological dualism this will not happen. Instead, once the land gives out, the marginal productivity of labor will fall below minimal real wage rates and unemployment will begin to appear.¹

Solow's Figure 2 (p. 71) indicates the possibility of multiple

¹The Philippines today seems to be in this stage of balanced growth in the rural sector, with little capital and land combined with much labor. However, with present rates of population growth, even the Philippines is approaching the point where it will no longer be possible to maintain present ratios of land and other capital to labor. Marginal productivity of labor will then begin to fall below the minimal subsistence real wage rates. In Java, this point has already been reached.

equilibrium, with one unstable equilibrium between rate of growth and ratio of capital to labor, and with two stable equilibrium points, one with a high ratio of capital to labor and one with a low ratio of capital to labor. If the expansion process begins with a relatively high ratio of capital to labor, the system will tend towards a high rate of growth with capital-intensive techniques. If on the other hand, the expansion begins with a low ratio of capital to labor it will ^{move} towards an equilibrium rate of growth with labor-intensive techniques. Applying this analysis to our two sectors, we see the strong likelihood that the industrial sector, which starts with a relatively high ratio of capital to labor, would move towards an equilibrium expansion path with a high ratio of capital to labor, even if technical coefficients were not fixed. In the rural sector, on the other hand, beginning as it did with a high ratio of labor to capital, the tendency will be towards an expansion path which will retain a still lower ratio of capital to labor.

(Figure 1 below)

In his Figure 3/Solow indicates the possibility of absence of equilibrium, which comes still closer to our historical case. In this diagram the ray nr represents steady growth equal to both the warranted and natural rates, with a constant ratio of capital to labor and continuous full employment. The curve $s_1F^1(r,l)$ represents a system which "is so productive and saves so much that perpetual full employment will increase the capital labor ratio (and also output per head) beyond all limits; capital and income both increase more rapidly than the labor supply." The curve $s_2F^2(r,l)$ represents a system which "is so unproductive that the full employment path leads only to a forever diminishing income per capita. Since net investment is always positive and labor is increasing,

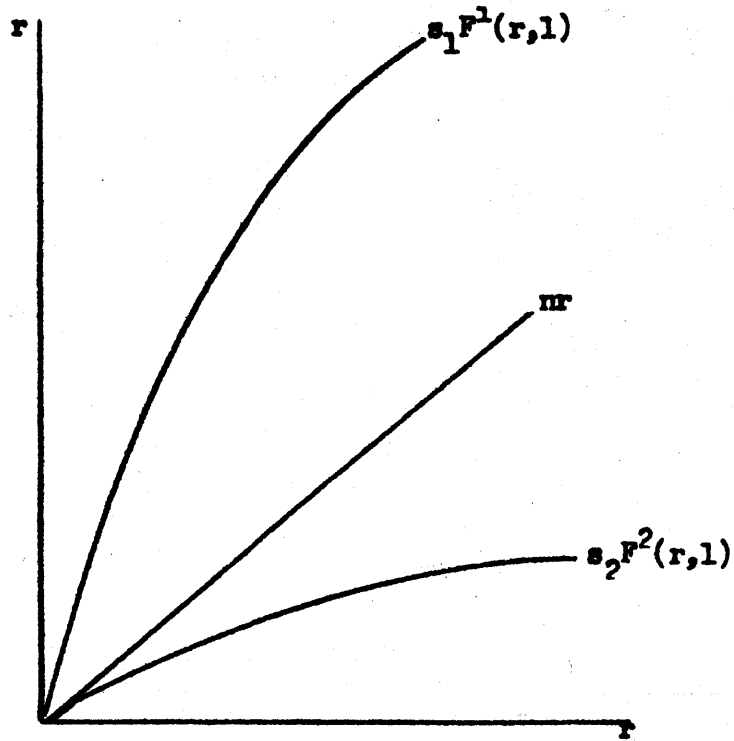


Figure 1 (Solow Figure III) (See Page 21)

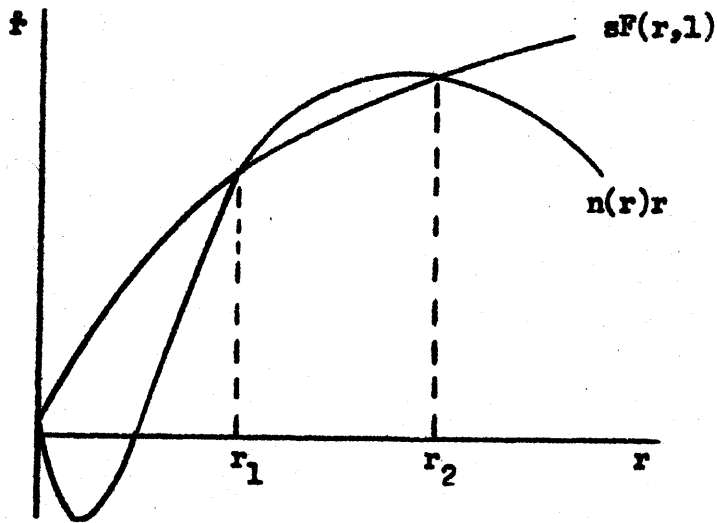


Figure 2 (Solow Figure IX) (See Page 22)

aggregate income can only rise." Clearly, the first system conforms closely with the industrial sector of underdeveloped countries; the effective labor supply expands less rapidly than the capital inflow to that sector, for reasons already suggested. Entrepreneurs never reach the point of considering it worthwhile to train skilled labor, and real income remains so low that even the supply of unskilled labor may be limited from their point of view.

Of course, population grows, and the number of the people in the rural sector continues to grow. The second system thus conforms to the rural sector, where population growth ultimately brings a conflict between maximizing output and full employment.

Unfortunately, Professor Solow felt that "it would take us too far a field to go wholly classical with a theory of population growth and a fixed supply of land," (pp.87-88)--unfortunate, since this classical model is the one which would conform most closely to the rural sector of underdeveloped countries. Solow does indicate that in such a model, where savings can fall to zero with income still positive, net investment might cease and the capital stock become stationary while the labor force still grows. He shies away from this case; but it is clear that in such circumstances disguised unemployment must appear as soon as marginal productivity of labor falls below minimal real wage rates. Obviously, too, with fixed techniques, a fixed supply of land, and continuing population growth, per capita income in the rural sector must eventually decline.

(Figure 2 above)

Professor Solow's Figure 9/is also interesting in this context. Here he treats population growth as a function of per capita income (and so of

the capital-labor ratio) instead of treating it as an autonomous variable. The pattern of population growth implied in this diagram is that "for very low levels of income per head or real wage population tends to decrease; for higher levels of income it begins to increase, and that for still higher levels of income the rate of population growth levels off and starts to decline" (p. 91). The result is something close to Leibenstein's "minimum effort thesis", to be discussed more fully below. At any initial ratio of capital to labor below r_2 , the system will revert to equilibrium at the low ratio of capital to labor r_1 , with the correspondingly low rate of increase of output. If we start with a capital-labor ratio anywhere below r_2 , the only way to assure cumulative growth is to make a sudden jump to a ratio of capital to labor above r_2 . Combining this analysis with our discussion of population, we can readily see that because of the tendency for increases in investment confined to the industrial sector to accelerate population growth, a gradual approach to r_2 is unlikely to be effective.

Finally, Professor Solow introduces rigid wage rates, and concludes that if the ratio of wage rates to price corresponds to a capital-labor ratio that would normally tend to decrease (or drop to less than zero), unemployment develops and vice versa. Once again, these are the conditions in the rural sector of underdeveloped countries; once the first wave of population growth takes place and land becomes relatively scarce, the "fixed" real wage rate, which is a customary subsistence level, tends to be above the marginal productivity of labor. With a low initial ratio of capital to labor and rapid population growth, this relationship is precisely what emerges. Thus the Solow analysis, while starting from

a quite different point, tends to corroborate the conclusions derived from the Eckaus analysis.

The Leibenstein Theory

In discussing the Leibenstein theory of underdevelopment, we begin with an adaptation of one of his simple diagrams illustrating the relationships among population size, investment, and per capita income.

(below)

Figure 3/represents the adaptation to our own purposes of Leibenstein's income

Figure 3-2. Per capita/is measured on the vertical axis, population size on the horizontal axis. The straight line $x = z$ represents the level of per capita income at which there is neither population growth nor capital accumulation.¹

We are applying the diagram only to the rural sector of the underdeveloped economy. The curves r_1, r_2, r_3 , etc. represent the relationship between average output and income and size of population for varying stocks of resources, including land. We begin with population at P_1 , and per capita income at $Oa = P_1E_1$. We now introduce industrial investment in the capital-intensive sector. This investment will withdraw a small amount of population from the rural sector, and perhaps increase somewhat the resources available to the rural sector, in the form of improved roads and the like. Thus the impact effect of the commencement of industrialization

¹Leibenstein presents other diagrams in which the zero investment line is above the zero population line; but we consider the assumption that complete absence of population growth is accompanied by absence of capital accumulation is more realistic for a peasant economy. Indeed, there is some evidence that in Asian countries a certain amount of capital accumulation took place, even in the absence of population growth, in the form of simple transportation equipment, roads, housing, irrigation systems, and the like. However, for simplicity we shall assume that prior to the beginning of industrialization there is no population growth and no net capital accumulation.

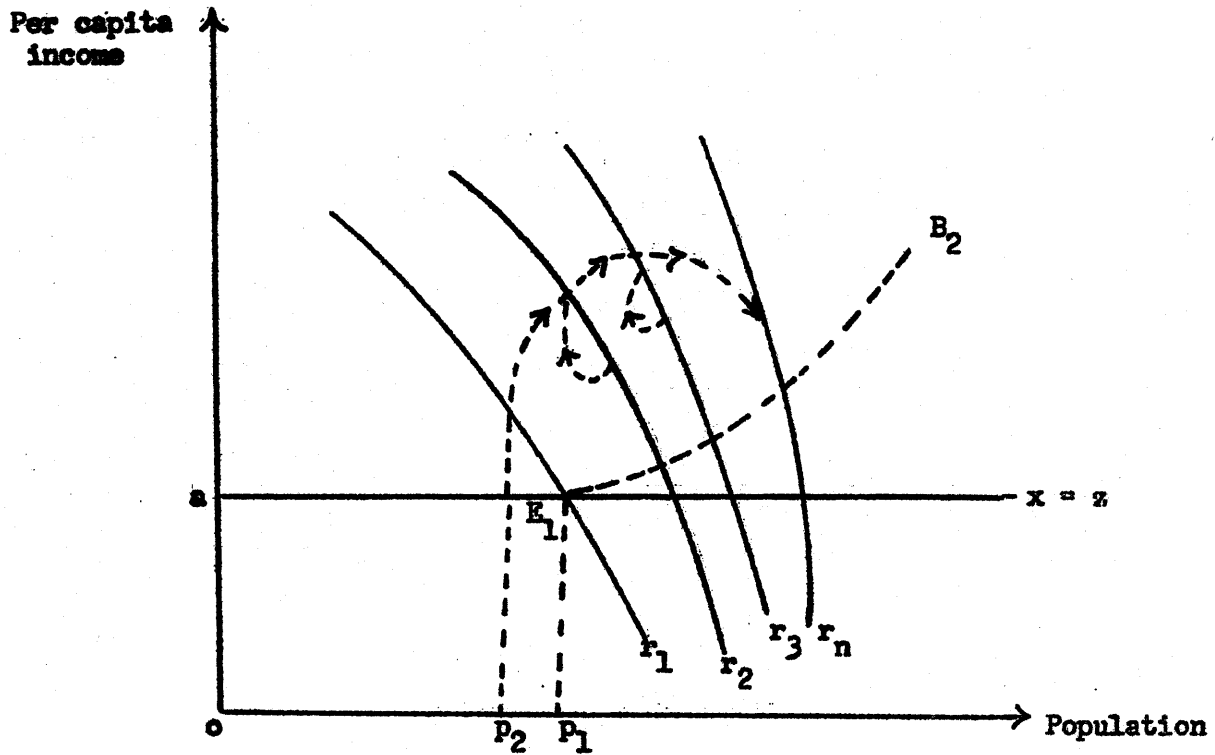


Figure 3 (Leibenstein Figure 3-2) (Page 24)

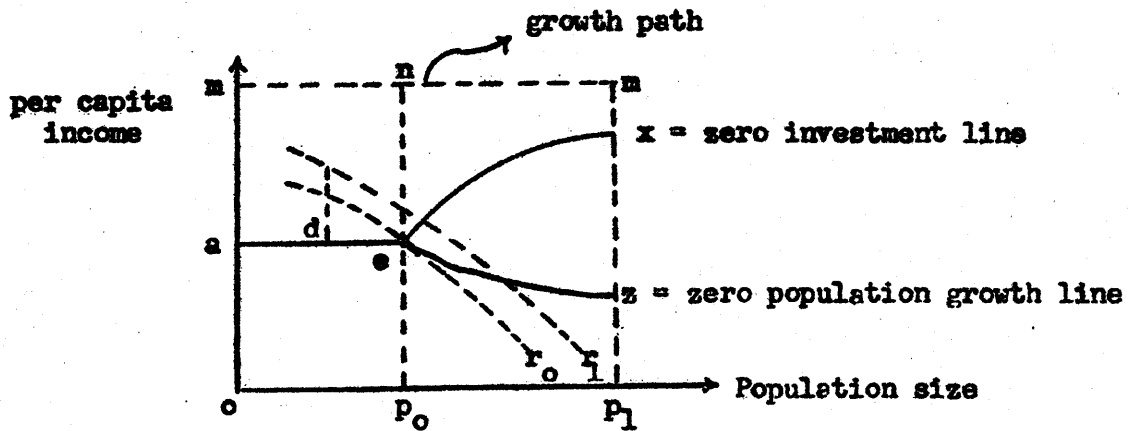


Figure 4 (Leibenstein Figure 3-5) (Page 26)

is a movement to the left along the population curve, which in itself tends to raise per capita income, and a small shift in the average productivity curve to the right, r_2 . On both accounts per capita income tends to rise. However, the result (or at least the accompaniment) of rising per capita income is an increase in population. Some net investment will now take place, mainly in the form of clearing new land, perhaps accompanied by some shift from "slash-and burn" to irrigated agriculture.¹ Thus the average productivity curve shifts further to the right, to r_3 .

As population grows per capita income will tend to move downward along this curve. However, with the next wave of industrial investment, the process is repeated. There is a new shift to the left along the population curve, a new increase in amount of resources immediately available, and a new incentive to occupy new land and improve agricultural techniques.

This process continues so long as the industrial investment takes place, and so long as good new land is available or not all land has been converted to the more productive of the known agricultural techniques. However, there will be some tendency for the average productivity curve to become steeper as we move to the right and the possibility of adding to agricultural resources diminishes. Eventually we reach the point where all land is occupied and converted to the more efficient technique. The average productivity curve then becomes a rectangular hyperbola. That is, as population grows, total income remains unchanged, and is simply divided among more people. From this point on, the sole effect of industrialization can/be further increases in population, declining per capita income,

¹It is perhaps worth noting that in the tropics improved land meets Professor Hayek's definition of capital; it is a "non-permanent productive resource".

and a consequent movement along the curve rn. The process will stop when rn cuts the zero population growth line.

It is possible, of course, that the zero population growth line will rise as population rises. If we consider the whole process in time, and imagine that we move through time as we move to the right along the population curve, there is some reason to believe that the curve would take the form of B_2 . The significance of this pattern of growth is that with sufficiently large initial increases in resources (implying that financial capital is directed toward the rural sector as well as new land being occupied) the rate of population growth would fall below the rate of indigenous net investment, permitting cumulative growth. Better still, as will become more apparent below, would be an initial rate of investment in both sectors that would permit a jump to levels of per capita income at which steady growth could be maintained from domestic savings and investment.

This point can be illustrated by an adaptation of Leibenstein's (Figure 4 above) Figure 3-5. It is here assumed that as income rises and population grows beyond the present level the per capita income at which population growth falls to zero also falls--a quite reasonable assumption from a demographic point of view. At the same time, the zero-investment line is considered to rise with per capita income and population. If the "demonstration effect" is operative, this assumption is also reasonable; after a lag, consumption patterns are adjusted to the higher income levels, and when income falls again zero saving is reached at higher levels of income than before. The line mm represents the level of per capita income at which

the rate of population growth falls below the rate of capital accumulation, permitting cumulative growth.

It is apparent that any initial displacement through industrial investment which leaves the system within the area exx, or within the area exmn, involves a return to the initial equilibrium position e. The former area is one^{of}/net disinvestment, which must lead eventually to net decline in population and a return to e. The latter area involves net investment, but at a rate slower than population growth, so that per capita incomes fall after the initial rise, forcing the system back to e.

On the other hand, a simultaneous reduction in the population of the rural sector, such as is involved in the movement from e to d, combined with an increase in investment in the rural sector which would raise the average productivity curve to r_1 , would bring the rural sector into the range of cumulative growth.

Leibenstein also shows that at low levels of income the optimum degree of specialization is rather low. "It is the highly efficient special-purpose equipment that, for the most part, is subject to indivisibilities at points where cost per units of capital is quite high. It is the degree of indivisibility per unit of efficiency that matters." This relationship complicates the problem of finding efficient techniques for the degree of specialization called for at the low levels of income in the rural sector.

Leibenstein provides an ingenious explanation of the "vicious circle" with regard to entrepreneurship in underdeveloped countries. The problem, he says, is not that entrepreneurial ability is lacking in these countries. Rather, it is that the conditions of underdeveloped countries

incline entrepreneurs toward engaging in "zero-sum" games (those which do not raise national income as a whole) rather than "positive-sum" games. Among the zero-sum games are "non-trading activities in order to secure for their interest a greater monopolistic position, increased political power, more prestige, etc" (p. 117); trading activities that do not add to aggregate resources and do not absorb savings but do waste entrepreneurial resources; and "activities that do use up net savings, but the investments involved are in enterprises of such a nature their 'social value' is either zero, or their social value is very much lower than their private value."

Every entrepreneurial activity, he points out, implies an anticipation of profit. If the activities are to be "positive-sum", the anticipation of profits implies expansion of national income. If the entrepreneurs are not to be disappointed, their activities must raise national income enough to permit them a profit at least as high as expected. If only a small share of entrepreneurial activity is devoted to the "positive-sum" activities, the actual rate of growth is likely to be small, and the expectations will be disappointing, redirecting entrepreneurial talents towards "zero-sum" activities.

One of Leibenstein's most interesting diagrams is his Figure 15-1. ^(Figure 5 below) We start with per capita income at oa. If enough investment is injected into the system to raise per capita income immediately to om, sustained growth will occur. However, it would be cheaper for the investor (which might in this context be a foreign government undertaking a foreign aid program) to make the injection in two stages. The initial injection might be enough to raise income to ob; then at time (t) the second injection could be made to raise per capita income by cb, to the critical minimum.

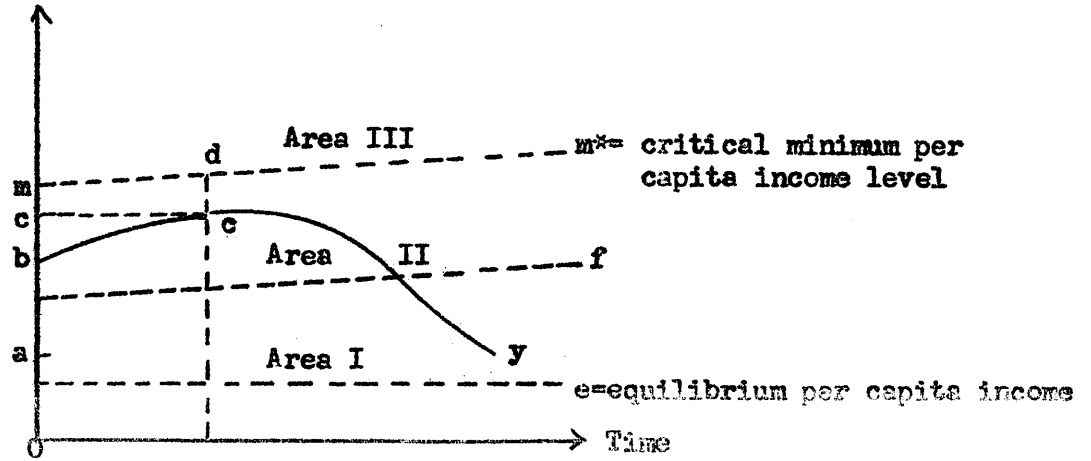


Figure 5 (Leibenstein Figure 15-1) (Page 28)

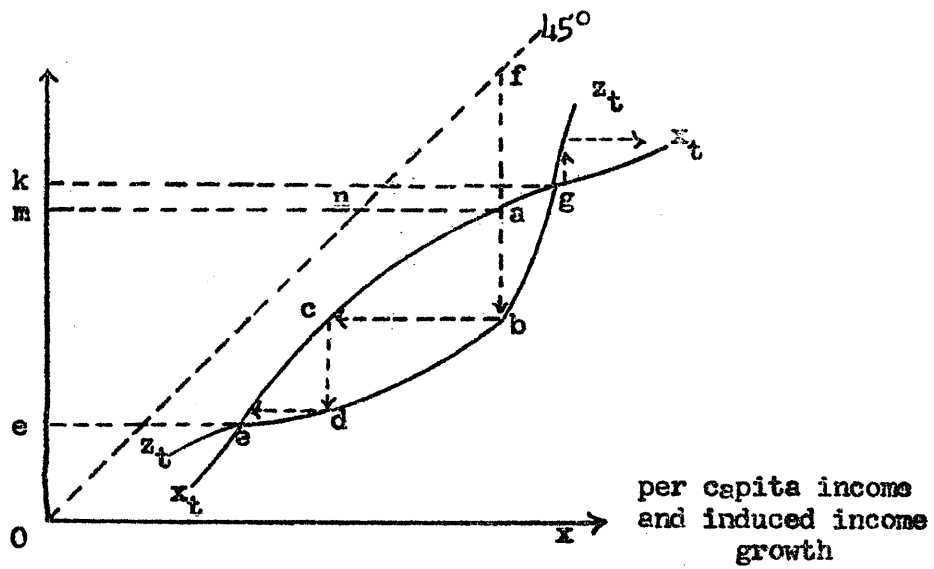


Figure 6 (Leibenstein Figure 8-1a) (Page 29)

Leibenstein readily admits that his theory of the critical minimum effort is an empirical one. In his Figure 8-1a, ^(Figure 6 above) the relationship of income-raising and income-depressing forces is such that starting from an equilibrium position e, no investment program which fails to raise per capita income to the level g will produce sustained economic growth. It is of course possible to construct diagrams to show cases in which no growth is possible at all, or in which any initial shock bringing a small increase in per capita income would produce steady growth. The reason for assuming that underdeveloped countries in fact face a position where a substantial increase in investment is necessary to yield steady growth relates to the underlying theory of population growth, and actual evidence with respect to internal diseconomies of scale due to indivisibility of the factors of production, other indivisibilities with regard to investment decisions, external diseconomies due to external interdependencies, and the like. Leibenstein has also shown, however, that there is a biological maximum to the rate of population growth, in the neighborhood of three per cent. Consequently, given a sufficiently large volume of technical and capital assistance, it is always possible to produce some initial increase in income that will become cumulative.

Leibenstein has also made an attempt to estimate the actual size of the "minimum effort". He makes plausible assumptions with respect to the relationship between rates of increase in life expectation with rising income and fertility levels. He then calculates, for an ICOR of 3:1 and 5:1, the ratio of net investment to income that would be required to produce certain patterns of income rise and population growth. His pro-
(not reproduced here)
jection 2b in Table 14-9/ in which population growth rises to a bit over two per cent in the first five year period and then rises gradually to

2.8 per cent for the fiftieth to fifty-fifth years, conforms fairly closely to what seems to have happened in Indonesia during the nineteenth century. Under these conditions, he shows, the required net investment is 13.2 per cent of national income in the first five years and rises gradually to a level of 15.72 per cent of national income. Even his pattern 4b, which shows population growth rising to 2.42 per cent in the twenty-fifth to thirtieth years and then tapering off, requires investment of 13.2 per cent of national income in the first five years, rising to 14.52 per cent, and then dropping to 13.08 per cent the fiftieth to fifty-fifth years. These figures conform closely to the estimates of capital requirements for Indonesia made by the M.I.T. Indonesia Project.

The Myint Model

Professor Hla Myint presents his own version of the dualistic theory of underdevelopment.¹ He proposes the following model. (1) The country starts its period of expansion, resulting from its being opened up to economic relations with the outside world, "with a fairly sparse population in relation to its potential natural resources". (2) Its natural resources are then developed in the direction of a few specialized lines of primary production for export. This development is generally carried out by foreign private enterprise, assisted by government policy, and limited by the expansion of the world market for the export goods. (3) The native inhabitants of the country enjoy legal equality with other people in their economic relations, including the right to own any type of property and to enter into any type of occupation. (In some colonial

¹Hla Myint, "An Interpretation of Economic Backwardness", Oxford Economic Papers, Vol. 6, No. 2, June 1954.

countries this assumption did not hold; but it is all the more interesting that the Myint model does not need discrimination against native people to show the tendency toward technological dualism.) In such a model, Professor Myint points out, "The disequalizing factors must be considered as operating not only between the backward and the advanced countries as aggregate units, but also between the backward and advanced groups of peoples within the same backward country itself" (p. 146). The usual "country A and B" approach "is seriously inadequate for our purpose." Disaggregation, at least to the extent of recognizing the two major sectors, is necessary if we are to obtain useful results.

Professor Myint also casts doubt on the usefulness of the usual kinds of marginal analysis for dealing with such problems. The advanced countries, he says, are in the middle of a self-generating process of economic growth characterized by a steady rate of technical innovation and increase in productivity. Under such circumstances diminishing returns to investment will not in fact appear, and "a given rate of net investment will, on the whole, result in a corresponding rate of increase in total output or productive capacity." On the other hand, such assumptions are not plausible for the underdeveloped countries. "Thus the very nature of our problem, which is to start this process of economic growth, obliges us to go behind the macro-economic units and investigate the actual structure and 'growing points' of the backward economy. For the same reason, we cannot treat the changes in the basic ratios and propensities as 'exogenous' changes in data but must inquire into their nature and causes" (p. 148).

Returning to his model, Professor Myint suggests that before the

underdeveloped countries were "opened up", they were "primitive or medieval stationary states governed by habits and customs. Their people might have lived near the 'minimum subsistence level', but that, according to their own lights, did not appear too wretched or inadequate. Thus in spite of low productivity and lack of economic progress, there was no problem of economic discontent and frustration: wants and activities were on the whole adapted to each other and the people were in equilibrium with their environment" (p. 149). He then moves on to the second stage, "Particularly in the second half of the nineteenth century", when "these stationary backward societies were opened up to the outside economic forces. . . . Measures for economic development then consisted mainly in attempts to persuade or force the backward people into the new ways of life represented by the money economy--for example, by stimulating their demand for imports and by taxing them so that they were obliged to turn to cash crops or work in the newly opened mines and plantations" (p. 150). The yardstick of development of such countries was their export and taxable capacity. However, the "opening up" process drew increasing numbers of the native peoples into a new elite, in which the values of Western society were increasingly accepted. This gave rise to "a sense of economic discontent and maladjustment". It was in this third stage that the political problems associated with underdevelopment appeared.

The form of development in such dualistic economies was not such as to require a high degree of specialization among the native peoples:

In spite of the striking specialization of the inanimate productive equipment and of the individuals from the economically advanced groups of people who manage and control them, there is really very little specialization beyond a natural adaptability to the tropical climate, among the backward

peoples in their roles as unskilled labourers or peasant producers. . . Thus all the specialization required for the export market seems to have been done by the other co-operating factors, the whole production structure being built around the supply of cheap undifferentiated labour. . . Even where a new cash crop is introduced, the essence of its success as a peasant crop depends on the fact that it does not represent a radical departure from the existing techniques of production (e.g., yams and cocoa in West Africa). (p. 153)

Indeed, Professor Myint goes so far as to suggest that the process of specialization of a backward economy for the export market is most rapid and successful when it leaves the backward peoples in their unspecialized roles as unskilled laborers and peasant producers using traditional methods of production.

Professor Myint also draws attention to another characteristic of the dualistic--or more properly in this context, plural--economy, which has been noted by other observers as well: viz., that the middlemen between the big European concerns and the indigenous population are very often foreigners as well. He mentions the Indians and Chinese in Southeast Asia, Indians in East Africa, Syrians and "Coast Africans" in West Africa, and so on. He might also have mentioned the Indians in his own country of Burma. These middlemen collect produce from peasant farmers, distribute imported articles to the indigenous consumers, and act as money lenders.¹ These middlemen act as a buffer between the indigenous population and the advanced Western society, thus robbing them of "the

¹It is said in the Philippines, for example, that the growth of a particular village depended entirely on the resources of the local Chinese, for it was his resources that determined the size of the cash crops of which they could dispose. Moreover, there is a continuous draining-off process. The Chinese who become successful in the village does not stay there, but moves on to a city, installing in his village store a relative whose talents are less striking than his own.

educating and stimulating effect of a direct contact".

True, some opportunities for acquisition of skills occurred on the plantations and mines, but these were diluted, according to Myint, by the high labor turnover. The backward peoples are unused to the discipline of the mines and plantations, and have one foot in their traditional, tribal and village economies. They look upon the wage labor, Myint contends, "not as a continuous permanent employment but as a temporary or periodical expedient to earn a certain sum of money." Thus, "even after many decades of rapid economic development following the opening up process, the peoples of many backward countries still remain almost as ignorant and unused to the ways of modern economic life as they were before."

The middleman of the Asian type, selling consumers goods, advancing seed and simple tools on a share-cropping basis, and lending money, was by no means unknown to the West. In the American South or the Canadian West, such middlemen were also buffers between the small farmers and the advancing technology of the big cities. The difference is that at a certain point it paid the middlemen as a class to take over the land altogether in the West--to foreclose on / ^{their} tardy debtors--and to amalgamate small holdings into units large enough to permit large-scale, extensive, mechanized and commercial agriculture. From there on the advance of technology spread to agriculture as well as to industry.

The question is, then, why this process did not take place in underdeveloped countries. Why have the middlemen in Asia and Africa continued to squeeze the peasant, rather than maneuvering the peasants into a position where they could foreclose on their land?

To find an answer to this question, the Myint point must be added to

the analysis presented above. In Europe and the New World, a time came when manpower was obviously scarce in the agricultural sector, making it profitable for individual farmers to increase the size of their holdings and to use more capital-intensive methods. The barrier to agricultural improvement in the underdeveloped countries has been that labor never became scarce in the rural sector. The "population explosion", brought by industrial investment in the capital-intensive sector, meant that there was an adequate supply, and later a super-abundance of labor in the peasant-agriculture sector. Thus in Asia and Africa the middleman has continued to play his traditional role, directing his efforts to maximizing his share of the output obtainable through labor-intensive methods, rather than endeavoring to get the peasant off the land, so as to cultivate it himself by more land-and-capital-intensive methods.

The Terms of Trade

Two arguments have been made with respect to a tendency for the terms of trade to turn against underdeveloped countries. One of these arguments relates to the external terms of trade of the country as a whole with the rest of the world; the second relates to the terms of trade between the rural sector, in which the great bulk of the indigenous people live, and the advanced industrial sector (including importers) of the same country.

Of the two arguments the one relating to the internal terms of trade is most clear cut. Not only has technological progress been confined mainly to the industrial sector, as shown above, but the industrial sector has developed increasingly powerful monopoly positions vis-a-vis the rural sector. In a typical process of development, Myint points out:

The backward peoples have to contend with three types of

monopolistic forces: in their role as unskilled labor they have to face the big foreign mining and plantation concerns who are monopolistic buyers of their labour; in their role as peasant producers they have to face a small group of exporting and processing firms who are monopolistic buyers of their crop; and in their role as consumers of imported commodities they have to face the same group of firms who are the monopolistic sellers or distributors of these commodities. (p. 155)

In advanced countries, such tendencies toward monopolistic exploitation are offset by the development of "countervailing power", to use Professor Galbraith's term. No such countervailing power emerged in the underdeveloped countries prior to their achievement of independence, and even now, Myint points out, the workers and peasants have a long way to go before their organization will give them really effective bargaining powers. "The first lesson", says Professor Myint, "is that some sources of countervailing power, like the co-operative societies, themselves need a fairly high degree of business-like behaviour and 'economic advance' and can only be fostered very slowly in the backward countries. The second lesson is that it is easier to redistribute existing income than to redistribute and stimulate economic activity by the use of countervailing power" (p. 162). Moreover, he points out, countervailing power is sometimes sought in the preservation of traditional social institutions, which do not provide equivalent bargaining power in an economic sense.

The deterioration of the terms of trade of the rural sector, in its relations with the industrial sector of the same country, must of course be reflected in the terms of trade of the rural sector with the rest of the world. Obviously, it is the terms of trade of the rural sector with the rest of the world that is important to the great majority of the people in the country. In advanced countries the primary sector accounts for a

small share of income and employment, and agricultural productivity is several times as high as in the rural sector of underdeveloped countries. It seems highly likely, then, that there has been--and is still-- a trend towards deteriorating terms of trade of the rural sector of underdeveloped countries with the rest of the world.

The case is less clear with regard to the export sector of underdeveloped countries, and it is on this question that controversy has been most keen. There is some evidence that over recent decades the terms of trade of countries exporting raw materials and importing manufactured goods have deteriorated; it is less clear that this trend must continue in the future. So long as we think in traditional terms of relative prices of exports and imports, we are hampered in calculating terms of trade by the increasing prevalence of multiple exchange rates and the difficulty of deciding what exchange rate is appropriate for such a calculation. On the other hand, if we think in terms of manhours, and calculate how many manhours' production in the export industries of other countries can be purchased by "x" manhours' work in the export industries of underdeveloped countries, there is good reason to suppose that the terms of trade have been moving against underdeveloped countries, and will continue to do so until means are found of raising manhour productivity in industries producing agricultural raw materials and foodstuffs.

In another article, Professor Myint has suggested that the shift of terms of trade in their favor was a major factor in accelerating economic growth of the now industrialized countries.¹ It meant that "x" manhours

¹H. Myint, "The Gains From International Trade And The Backward Countries", Review of Economic Studies, Vol. XXII, No. 2.

worth of imports of raw materials and foodstuffs could be purchased with a smaller number of manhours' worth of exports; thus, in effect, it released manhours which could be diverted to building up the capital structure without an increase in domestic saving. In this sense it meant that the saving was done for the advancing countries by the peoples in the stagnant ones. If this argument is correct, it applies also in reverse; the deteriorating terms of trade made it increasingly difficult for the underdeveloped countries to accumulate capital, without sacrificing consumption from the already low levels.

In this same article Professor Myint reminds us that during the nineteenth and twentieth centuries the countries of Asia and Africa had very rapid development of the export sector. Capital was not especially scarce in the export sector of underdeveloped countries: "The foreign firms in the export sectors were nominally able to borrow capital on equal terms with firms of comparable credit worthiness in the advanced countries." Why did the growth in value of exports have no multiplier effects on per capita incomes in the rest of the economy?

Myint lists as factors operating against "spread effects" the high turnover of labor, their willingness to accept very low wages, the conviction among employers that the supply curve of labor was backward sloping, and the general lack of industrial skills, which made entrepreneurs feel that recruiting an adequate labor force was a difficult affair. Wages were low, but were not considered low relative to estimates of efficiency. "The attempt to switch over from the cheap labor policy to a policy of higher wages and more intensive use of labor usually involved taking decisions about 'lumpy investments' both in the form of plant and machinery and in the form

of plant and machinery and in the form of camps and villages where it was necessary to change over from a casual labor to a permanent labor force."

Professor Myint stresses the reluctance of European entrepreneurs to make heavy investments of a kind which would require a large supply of skilled workers, and their preference for simple labor-intensive techniques which left labor productivity low and afforded few training facilities. As we have already seen, however, the factors cited by Myint also provided an incentive for a shift to wholly capital-intensive techniques, requiring relatively few workers of any level of skill, where these were technically possible. The result was some of each. Thus we find on the same plantation labor-and-land-intensive methods, of a sort that give little generalized training, in the agricultural side of the operation, combined with capital-intensive techniques in the processing part of the operation. It is the intermediate kind of technique, requiring fairly large numbers of workers in skilled occupations, which were shunned by entrepreneurs in underdeveloped countries; and, as Professor Myint suggests, it is these intermediate techniques that provide the best means of training large numbers of workers.

Myint also points out once more that the situation in the labor market provided the excuse for importing labor from other countries. He quotes Professor Knowles to the effect that in the British Empire of the nineteenth century there were three "mother countries": the United Kingdom, India and China. Immigrant labor from India and China was deliberately introduced into Southeast Asia, Fiji, the West Indies and parts of East and South Africa.

Finally, Professor Myint explains the lack of "spread effects" from development of the export sector by an appeal to the concept of "non-competing

groups":

Thus it may be possible to find an analogue of non-competing groups in the foreign and domestic sectors of the backward countries which contributes to a lack of secondary rounds of activities. This leads us to the second argument, that the dynamic gains from specialization in industry are likely to be greater because it has a greater "educative" effect on the people of the country than agriculture. Here it must be admitted that in contrast to the tremendous stimulus to further economic development enjoyed by the advanced countries, international trade seems to have had very little educative effect on the people of backward countries except in the development of new wants. Apart from the introduction of modern transport, it is difficult to observe any revolutionary changes in their methods of production and efficiency both in the peasant and in the non-peasant sectors. The peasants specialize for international trade simply by going on producing traditional crops by traditional methods or new crops which can be readily produced by traditional methods.
(p. 140)

Professor Myrdal and the "Backwash Effect"

Professor Gunnar Myrdal makes a still stronger argument than that of Professor Myint; because of "circular causation" and "backwash effects", he contends, the involvement of underdeveloped countries in international trade with advanced countries, far from bringing a tendency towards equality of marginal productivity and incomes, resulted in a tendency away from equilibrium, a vicious spiral bringing increasing discrepancies between productivity of advanced and underdeveloped countries.¹ "The idea I want to expound in this book", Professor Myrdal writes, "is that. . .in the normal case there is no such tendency towards automatic self-stabilization in the social system. The system is not by itself moving towards any sort of balance between forces, but is constantly on the move away from such a situation. In the normal case a change does not call forth countervailing

¹Gunnar Myrdal, Economic Theory and Under-Developed Regions, London, 1957.

changes but, instead, supporting changes, which move the system in the same direction as the first change but much further. Because of such circular causation a social process tends to become cumulative and often to gather speed at an accelerating rate" (p. 13).

Myrdal begins his analysis with the tendency towards regional inequalities in a single country. The growing communities will exert a strong agglomerative pull, accelerating their rate of growth and bringing increasing stagnation or decline in other parts of the country. No offsetting forces arise to prevent the acceleration of this shift of economic activity from decadent to progressive regions. Any accident or shock giving a momentary advantage to one region can start this chain of disparate growth movements. Among such shifts in relative advantages of regions of a country, Professor Myrdal singles out "a change in the terms of trade of a community or a region" as one factor which has historically played this role.

Among the aggravating forces, he says, will be demographic ones; the poorer regions will be the ones with the relatively high fertility. This factor, together with net immigration from the decadent regions, makes the age distribution in these regions unfavorable. The poverty in rural regions of Europe during the long period of net immigration to industrial centers and to the United States, he says, "has a main explanation in the unfavorable age distribution there, caused by migration and in part also by higher fertility rates" (p. 28).

The expansion of trade only aggravates the process. "The freeing and widening of the markets will often confer such competitive advantages on the industries in already established centres of expansion, which usually

work under conditions of increasing returns, that even the handicrafts and industries existing earlier in the other regions are thwarted" (p. 28). He cites as a dramatic example of the growth of regional disparities following liberation of trade, the expansion of the north and retrogression of the south of Italy following political unification in 1860. For one thing, regions which "have not been touched by the expansionary momentum could not afford to keep up a good road system and all their other public utilities would be inferior" (p. 29).

True, expansion in one region also has "spread effects"; the growth of industrial cities, for example, should create a demand both for agricultural raw materials and for consumers' goods. There is, however, no reason for equilibrium between "backwash" and "spread effects". The analysis provided above provides some reason for assuming that the "backwash effects" will be predominant. The "spread effects" could outweigh the "backwash effects" only if income and employment in the leading sectors grow relative to that of the laggard sector, as it did in the now advanced countries. The historical pattern of growth in underdeveloped countries, however, has been such that spread effects were weak. The rural sector (as defined above) did not produce the raw materials for the expanding industrial sector, nor did the expanding industrial sector rely heavily on the rural sector for foodstuffs. (Rice was not the major item in the food budgets of the British, Dutch, or Spanish in their colonies.) Thus the market for cash crops of the rural sector was not much expanded by the growth of the industrial sector.

Professor Myrdal reports two striking correlations which were discovered in the studies of the Economic Commission for Europe: first, the

regional disparities are greater in poor countries than in rich ones; and second, the disparities are increasing in poor countries and decreasing in rich ones. "A large part of the explanation for these two broad correlations", he says, "may be found in the important fact that the higher the level of economic development that a country has already attained, the stronger the spread effects will usually be" (p. 34).

These inherent tendencies towards integration in advanced countries and leading and lagging sectors in underdeveloped ones were strengthened by national policy. The poorer countries--especially the colonial ones--did not have effective policies for national integration, of the sort that have been introduced in the more highly developed ones.

Generally speaking, on a low level of economic development with relatively weak spread effects, the competitive forces in the markets will, by circular causation, constantly be tending towards regional inequalities, while the inequalities themselves will be holding back economic development, and at the same time weakening the power basis for egalitarian policies. A higher level of development will strengthen the spread effects and tend to hamper the drift towards regional inequalities; this will sustain economic development, and at the same time create more favourable conditions for policies directed at decreasing regional inequalities still further. (p. 41)

It is perfectly possible, Professor Myrdal argues, for international trade to have "strong backwash effects on the underdeveloped countries" (p. 51). The present pattern of production in underdeveloped countries reflects these backwash effects rather than true comparative advantage. Rather than increasing further production of primary goods for export, Myrdal suggests, the true advantage of these countries may lie in improving the productivity of the rural sector, and in the development of manufacturers. Nor can capital be expected to flow to underdeveloped countries simply because capital is relatively scarce there. On the contrary, in the absence of exchange controls capital would flow out of the underdeveloped countries

to the more advanced (and more rapidly advancing) ones. International adjustment through migration is no longer possible.

The present pattern of production in underdeveloped countries also reflects the past policies of the colonial powers, which often "took special measures to hamper the growth of indigenous industry". This colonial heritage is not dispelled by political independence alone. The "cumulative social processes holding it down in stagnation or regression" are still there. And "colonialism meant primarily not only a strengthening of all the forces in markets which anyhow were working towards internal and international inequalities. It built itself into, and gave an extra impetus and a peculiar character to, the circular causation of the cumulative process" (p. 60).

In his final pages, Myrdal calls for a new theory of international trade as applied to underdeveloped countries, and laments the tendency of the International Monetary Fund and GATT to apply outmoded theory because they "tend continuously to be permeated by the ideological elements which I have referred to as the predilections of economic theory, and which have had a particularly strong influence on the theory of international trade" (p. 155).

The Geographic Factor

While the present writer would not attach great importance to the geographic factor in explaining underdevelopment, it is true that the great majority of underdeveloped countries are wholly or substantially within the tropics. There is therefore some reason for examining the impact of purely geographic factors on productivity. Such an examination suggests that while tropical conditions are not the major cause of the relative lack of economic growth, they do aggravate the effect of other causes of underdevelopment.

Of the various effects of tropical climate on productivity, the least important would seem to be the direct impact of climate on human beings. In this connection Dr. Douglas H. K. Lee, Professor of Physiological Climatology at the Johns Hopkins University, quotes an Australian Health Department booklet:

In tropical Australia. . . there is practically no circumstance which can be laid hold of as representing a definite disability to the white race other than those faulty circumstances of social environment which are inseparable from the opening up of a new country for the purpose of primary production. First-generation, second-generation, and third-generation Queenslanders are performing their life work and following their ordinary avocations as they could in temperate climates, and there is at present no indication that the strain of tropical life is an actual one, or that the outlook for these people is anything but hopeful.¹

He shows, however, that underdeveloped countries might be defined in terms of the difference between the average dietary supply of calories and requirements (see table). He also provides evidence of the fact that Western observers find so distressing that agricultural productivity in

¹ Douglas H. K. Lee, Climate and Economic Development in the Tropics (New York: Council on Foreign Relations), 1957, p. 9.

AVERAGE DIETARY SUPPLY OF CALORIES AS
COMPARED WITH REQUIREMENTS (48b)

<u>Region and Country</u>	<u>Recent level¹</u>	<u>Estimated requirements</u>	<u>Percentage difference</u>
Far East			
<i>Ceylon²</i>	1970	2270	-13.2
<i>India</i>	1700	2250	-24.4
<i>Japan</i>	2100	2330	-9.9
<i>Philippines</i>	1960	2230	-12.1
Middle East			
Cyprus	2470	2510	-1.6
Egypt	2290	2390	-4.2
Turkey	2480	2440	+1.6
Africa			
French North Africa	1920	2430	-20.9
<i>Mauritius</i>	2230	2410	-7.5
<i>Union of South Africa</i>	2520	2400	+5.0
Latin America			
Argentina	3190	2600	+22.7
<i>Brazil</i>	2340	2450	-4.5
<i>Chile</i>	2360	2640	-10.6
<i>Mexico</i>	2050	2490	-17.6
<i>Uruguay</i>	2580	2570	+0.4
Europe			
Denmark	3160	2750	+14.9
France	2770	2550	+8.6
Greece	2510	2390	+5.0
Italy	2340	2440	-4.1
Norway	3140	2850	+10.2
United Kingdom	3100	2650	+16.9
North America and Oceania			
Australia	3160	2620	+20.6
United States	3130	2640	+18.5

¹Precise dates not given in source.

²In this and subsequent tables predominantly tropical countries will be in italics.

Source: Douglas H. K. Lee, Climate and Economic Development in the Tropics.

Asia and Africa, in terms of output per hectare, is far below that of Europe and America.

Lee provides a number of explanations for the low agricultural productivity in underdeveloped countries. One of these is the tendency for monocultures, which characterize so many of the underdeveloped countries, and the incidence of diseases and pests. "It matters little", says Dr. Lee, "whether the agent be a microbe, an insect, a larger animal, or a plant form; the principle remains the same: pure strands invite disease" (p. 34). He adds, "Under tropical conditions such infestations could easily become widespread epidemics with disastrous results. Blights which have thus effected the cotton, cacao, rubber and banana industries in the past await the monocultures of the future" (p. 34). A related factor is the rapid growth of weeds. "Mechanization may speed the clearance of weeds between the rows", he points out, "but hand work is necessary to clear them away between plants. In the cultivation of rice the flooding and transplanting of the paddies serves to control weeds, which would soon take over the area if cultivation by United States methods were attempted in the true tropics" (p. 35).

The use of fertilizers is also more complicated in the tropics than in the West:

The replacement of lost minerals and nitrogenous compounds by the addition of fertilizers is a solution which comes readily to the mind of present-day Western man; but such a program is fraught with difficulties in many tropical regions. In the first place, factory-produced fertilizers are expensive and are often beyond the means of the country concerned, even without the added cost of transportation. Second, the use of fertilizers presupposes a knowledge of what substances are deficient in the soil, the relative acidity of the soil, and the specific requirements of the particular crop. Whereas these facts may be fairly well known for

temperate situations, they are very poorly known for tropical areas. Finally, it hardly appears sensible to pour in fertilizer each year, only to have it go out to sea with the next rain. Some control must be introduced over the annual loss by leaching before artificial replenishment can be viewed with equanimity.

The time may come when fertilizers will be economically justified, but in many areas that time is not yet. There is perhaps more point to the utilization of green manure, especially where the manuring crop fixes atmospheric nitrogen; yet it cannot be blithely assumed that legumes will automatically do this. Both the species and the conditions must be right before the nitrogen-fixing bacteria can operate. Animal wastes may be used, although in many areas the diet of the animal is so poor that the excreta have very little value as manure. In some areas, such as India, it is considered more important to dry the dung for fuel than to apply it to the fields. (p. 38)

Turning to livestock production, Dr. Lee shows that the average output per animal of milk and wool is much lower in underdeveloped than in advanced countries. A part of the explanation for this low productivity is "that tropical grasses and other forage plants, even when abundant, are frequently lacking in nutritive value. In many instances, poor nutrition constitutes a major cause of low animal productivity in the tropics." Accordingly, raising livestock productivity may require importation of feeds, or development of new natural feeds, which may be very difficult in tropical conditions. Also, animals as well as plants are more subject to disease and pests in tropical countries. Heat as such has bad effects on appetite, and "everything man asks of his animals--more meat, more milk, more eggs, more work--involves a greater production of heat" (p. 67).

With regard to the effect of tropical climates on humans, however, Dr. Lee summarizes his evidence in these undramatic terms:

There is a general tendency to answer questions about possible levels of activity in the tropics in a gloomy fashion and to cite past performances in support. But what has been,

is not necessarily what has to be--a Roman soldier stationed in Britain would no doubt have been skeptical about the future productivity of the barbarous inhabitants in so vile a climate; and many a colonial governor has recorded grave disapproval of areas which are now highly successful. Conversely, there have been flourishing empires in areas that are truly tropical (e.g., Southeast Asia) and intense activity can be found today in more than one tropical area (e.g., Venezuela. (p. 100)

It is true, of course, that peoples of many underdeveloped countries suffer from malnutrition, and that this in turn has a bad effect on productivity. Here is one of the vicious circles so common in any analysis of underdevelopment; underdevelopment yields low agricultural productivity, yields malnutrition, yields low productivity, yields underdevelopment.

Dr. Lee is much more sanguine with respect to the possibilities of industrial development in tropical climates. He quotes Australia as an example:

As a youth in Australia, the author frequently heard it said that the country's climate was unsuitable for weaving textiles or manufacturing steel; at a more mature age he learned that it was also supposed to affect the quality of the beer. Some years later he witnessed considerable success attending both the textile and the steel industry and came to believe that the principal effect of climate upon brewing was through the thirst induced in the inhabitants.

In general, he sees in the field of industry none of the barriers to development in the tropics that the outlines for the agricultural sector.

In previous chapters we have been able to establish very definite and important influences of tropical climate upon crop production, animal husbandry, and the general sweep of human welfare and productivity; and in discussing palliative measures we have had to refer to various nonclimatic factors which may affect the success or practicability of those measures. This was possible without losing sight of the main topic--the role of climate. But when it comes to a discussion of industry, the evidence for direct and important climatic effects is somewhat insubstantial, and a consideration of non-climatic influences is apt to develop into a full-fledged discussion of the socio-economic forces necessary to the process of industrialization. (p. 146)

He does point out that at present the supply of labor is a serious problem, but here the possibilities of overcoming the problem seem relatively good.

The supply of labor may present an equally difficult problem. A superabundance of extremely poor people does not necessarily provide a work force. Undernourishment, disease, lack of education, lack of ambition, or ingrained custom, singly or in combination, may make of the apparent plentitude a veritable mirage. Public health measures and education may, in time, rectify the position, but they must be paid for and presumably treated as an investment in future productivity.
(p. 147)

Summary and Conclusions

This paper is concerned with an appraisal of the role of community development programs in launching economic growth in underdeveloped countries. We define underdeveloped countries as those with per capita incomes of less than \$500 per year, in order to include all those countries in which economic development is a matter for policy decisions both by our own government and theirs; but special importance is attached to those countries in Asia and Africa where per capita incomes are below \$200 per year. We also indicated the importance of diffusion of incomes; one or two mid-Eastern sheikdoms have per capita incomes higher than that of the United States, and yet are clearly underdeveloped, since the masses of peoples still live at very low levels of productivity. By economic development is meant a rise in per capita incomes that continues for at least two generations and becomes cumulative.

In order to appraise any aspect of development policy, some theory of economic development is necessary. It is the present writer's belief that while social scientists are not yet ready to write a complete general theory of economic development, they do understand a good deal about the historical causes of underdevelopment. It is these causes that have been outlined above. If one knows what has caused underdevelopment in the past, one has a fair idea of what has to be changed in the future in order to promote economic growth.

The Population Explosion

The first part of our analysis was concerned with the relationship of population growth to industrial development. We showed that in the new underdeveloped countries, investment was made in plantations, mining,

petroleum, etc. for the export market, in a way which brought little or no structural change in the economy. It brought rising rates of population growth, but no "built-in habit of technological change" in peasant society. We have no reason to suppose that the same process could not happen again, if once again we had industrial investment of a kind bringing temporary improvements in per capita incomes and declining mortality rates, without reducing the proportion of population engaged in peasant agriculture and small industry. As Leibenstein points out, "the sustained reduction of fertility rates has never been achieved in a predominantly agricultural setting" (p. 151). The failure of industrial investment in Asia and Africa to bring structural change was partly due to colonial policy, which was designed to prevent the development of secondary and tertiary sectors in the indigenous economy.

Technological Dualism

The concentration of investment in the export sector, combined with population growth, led to increasingly apparent technological dualism. The industrial sector was actually, or was believed to be, capital-intensive and fixed-technical-coefficient in its techniques. It did not provide jobs proportionate to the rate of capital accumulation in that sector. The increased population had therefore to seek employment in the variable-coefficient rural sector. Techniques in that sector therefore became increasingly labor-intensive, and once good land gave out disguised unemployment began to appear in that sector. The shortage of skilled labor, and the effective shortage of unskilled labor where real wages were too low to permit hard and efficient work, aggravated the tendency towards introduction of labor saving devices in the industrial sector.

Since the war government and trade union policy has still further aggravated the tendency towards disguised unemployment by fixing wages above marginal productivity. While in some circumstances higher wage rates would in themselves increase productivity, this fact does not help unless the higher wages are actually paid. If higher wage rates merely lead to introduction of still more labor-saving techniques, the high wage rates will not be effective in raising general levels of productivity. The same is true if wage rates are fixed above marginal productivity at the new levels of nutrition; this situation will also lead to increased pressure for labor-saving devices and increased unemployment, open or disguised. Moreover, with the given market structure--the demand for exports increasing more rapidly than demand for domestic products--a conflict between maximum output and full employment developed in the rural, indigenous sector.

The Solow Model

The Solow analysis reinforces the theory of technological dualism. It shows the possibility of equilibrium rates of growth with either low or high ratios of capital to labor, which implies a growing discrepancy between those countries or sectors with high capital-labor ratios and those with low capital-labor ratios. Solow also shows the possibility of cumulative movements towards rising ratios of capital to labor and rising per capita incomes, or toward situations where continued full employment means falling per capita income. This analysis can be applied either to the two sectors of a single economy, or to the developments of advanced and underdeveloped countries.

This theory also shows a tendency towards disguised unemployment when

the marginal productivity of labor falls below the minimum subsistence wage. Finally, if population growth is itself a function of the capital-labor ratio (directly or indirectly) Solow shows the need for a discontinuous jump to a considerably higher ratio of capital to labor if steady growth is to be launched and maintained.

The Leibenstein Theory

Three points were taken from the theory of underdevelopment presented by Harvey Leibenstein. (a) If population growth is an increasing function of investment, there is a constant tendency for per capita income to revert to a minimum level at which both population growth and capital accumulation are equal to zero. Rising income can continue so long as investment is taking place in the industrial sector and new land is available in the rural sector to absorb the rising population. Once new land gives out per capita income must revert to the minimum level. (b) Leibenstein explains the vicious circle with regard to entrepreneurship. Only concentration of a large number of entrepreneurs on productive (positive-sum) investments will confirm the profit expectations of individual entrepreneurs. If only a few entrepreneurs are willing to engage in such investments, the rate of growth of the society as a whole is likely to be such that profit expectations will be disappointed, and those few entrepreneurs will revert to unproductive (zero-sum) activities. (c) Leibenstein shows the likelihood that the configuration of income-raising and income-decreasing factors in underdeveloped countries is such that only a discontinuous jump to considerably higher levels of capital accumulation will bring the economy into the zone of steady growth. He endeavors to quantify the critical minimum effort for various patterns of population growth, and shows that for the

conditions prevailing in many Asian countries, investment of 12 to 15 per cent of national income would be necessary to bring these economies into the zone of steady growth. However, there may be advantages in reaching this level in two or more discontinuous jumps rather than in a single jump.

The Myint Model

Three features of the Myint theory of underdevelopment have been incorporated into our general theory. (a) Myint points out the barriers to specialization in the rural sector, and the vicious circle that develops in this respect. With no specialization, no improvement in skills took place. Also, the high labor turnover in the industrial sector meant that little effective training was accomplished even there. (b) The rural sector finds itself confronted by monopolies and monopsonies, without the capacity for developing effective countervailing power, of the sort that there is in advanced countries. (c) The terms of trade never moved in favor of the indigenous economy. The statement applies most clearly with respect to internal terms of trade between the rural and the industrial sector of the same country, but it also implies in some measure to terms of trade between underdeveloped countries as a whole and advanced countries as a whole.

The Myrdal Theory

The main contribution of Professor Myrdal's theory to our model is his suggestion that the world economy is characterized, not by general tendencies towards equilibrium or adjustment to initial changes, but to circular causation, leading to vicious spirals which carry the world economy

farther and farther away from an equilibrium position. He demonstrates the tendency both towards regional inequalities in single countries, and the tendency towards increasing disparities in productivity between advanced and underdeveloped countries. Among the factors which may launch such disparate growth tendencies are shifts in terms of trade; he implies that shifts in the terms of trade in favor of now advanced countries, and against the underdeveloped ones, was one of the factors which resulted in the increasing spread between productivity and standards of living in the two kinds of countries.

Foreign trade, far from alleviating these discrepancies, tends to aggravate them, especially under conditions of colonial administration in the underdeveloped countries. The colonial heritage is not dispelled by independence alone. Even now, underdeveloped countries would be capital-exporting countries, rather than capital-importing countries, were it not for exchange controls. The marginal productivity of capital is not higher in underdeveloped countries than it is in advanced ones, despite the relative scarcity of capital in those countries, and only a discontinuous jump to a much higher level of investment, which would have to be made simultaneously in the industrial and agricultural sectors, would create conditions in which the relative scarcity of capital already accumulated could be translated into a higher return on new investment.

The Geographic Factor

According to the analysis of Dr. Douglas Lee, the effect of the geographic factor on economic development is not mainly the result of the direct impact of climate on human beings. This conclusion confirms the observations

of the present writer. So far as I have been able to observe, the attitude towards work, leisure, and income in Australia is the same from subtropical Darwin to chilly Hobart, with its ten-month-long winter and complete absence of warm weather. Nor could I discern any significant difference in attitudes or productivity between Indonesians living at sea level and those living in the invigorating climate 4,000 feet up in the mountains.

However, Lee does suggest several reasons why agricultural productivity may be expected to be low in the tropics, where so many of the underdeveloped countries are, in whole or in part. First, the monocultures common to these countries are prone to disease and pests. Second, the use of fertilizer is a good deal more complicated than in the temperate zones. Third, livestock is less productive because tropical fodder is less nutritious, because the animals are more prone to disease and pests, and because heat has a bad effect on appetite and anything done to make animals more productive also produces heat. Lee concludes that the disadvantages of climate are much less clear in industry.

These observations are of very considerable importance. In geographic terms, it appears that the comparative advantage of advanced countries is greater in agriculture than it is in industry. Technology can be transported; soil and climate can not. In very few of the underdeveloped countries is there any hope for achievement of levels of manhour productivity in agriculture comparable to those of the advanced countries. At the same time there seems no reason why many of these countries should not be just as efficient as the advanced countries in some industries.

Development Means Rapid Demolition of Peasant Society

It has long been recognized that there is a high correlation between the ratio of non-agricultural employment to agricultural employment and per capita income. Similarly, it has long been known that rising per capita income has been accompanied historically by a relative decline in the share of output and income generated in the primary sector of the economy. The theory of underdevelopment presented above shows why this relationship is so inescapable. With a large proportion of the population engaged in labor-intensive agriculture on very small holdings, the rural sector acts as an anchor sunk deep in the sands of time, so that the ship of state can never move far from its present state of rest, with low levels of productivity and of income. It can not accumulate capital at a rate fast enough to out run population growth, and it can not improve its agricultural techniques very much.

If by economic development we mean the launching of steady growth so that levels of per capita income above \$500 per year are reached and are steadily increased, sheer arithmetic forbids any easy optimism about achieving this goal without considerable reduction in the numbers engaged in peasant agriculture. In India, for example, where soil and climate are not suitable for a highly productive agriculture, it is likely that an output in excess of \$200 per capita (not per worker) in peasant agriculture is a technical impossibility so long as the present size of peasant holdings continues, no matter how much is done in the way of introducing fertilizers, seed selection, improved irrigation, and the like. And if 70 per cent of the labor force remains in agriculture, the achievement of a per capita national income of \$400 per year then becomes extremely

difficult, and is clearly impossible without developing an extremely efficient industrial sector employing the other 30 per cent of the labor force.

Moreover, a consideration of true comparative advantage suggests that leaving large numbers of people in peasant agriculture means continuing to engage in activities for which the economy is not well-suited. It seems unlikely that fertility will drop significantly in such societies unless there are further reductions in per capita income. If small-scale developmental efforts raise productivity faster than they reduce mortality there is every reason to suppose that fertility may rise again in such societies.

There is no automatic tendency to adjust, either internally or internationally, to the glaring discrepancies in productivity between the rural sector and the industrial one, or between average productivity of the economy as a whole and that of advanced countries. Foreign trade may only aggravate these disparities. Only a rapid change to extensive, mechanized agriculture, with enough industrialization to absorb the population displaced from the rural sector, will assure a take-off into steady growth.

Indeed, economic development is tantamount to getting people out of agriculture. Cumulative growth comes spontaneously only when labor becomes scarce in agriculture, so that a shift to more land-and-capital-intensive techniques becomes profitable from the standpoint of individual farmers. In brief, what is needed is a planned substitute for the constellation of plague, enclosures, reformation, discoveries, and industrial revolution which launched the process of cumulative growth in Europe.

Industrialization alone is unlikely to produce the desired results. Concentration of a limited capital budget in the capital-intensive sector

will merely continue the process which prevailed for two centuries under colonial administration. The evidence accumulated for East Germany suggests that excessive concentration of capital in a capital-intensive industrial sector can even cause economic retrogression. In East Germany, it appears that concentration on a few heavy industries, providing relatively few jobs, has forced increasing numbers of the population into the rural sector. The proportion of gainfully employed occupied in agriculture has risen in comparison to the pre-war period. This increase has been accompanied by a decline in agricultural output, and a decline in the acreage under cultivation, and a decline in the average size of farms. Lacking sufficient capital to utilize extensive and mechanized techniques, the larger rural population has been unable to cultivate all the land previously in cultivation. They have been forced back to labor-intensive, unproductive techniques. Thus they have taken a step backwards in time, to a situation which characterized colonies before the war.

It is also clear that independence alone will not bring a take-off into economic growth. It does not matter whether the investors are foreign or domestic, so long as investment is concentrated in capital-intensive industries. Thus the situation in the Philippines, Latin America, and some Middle East countries, where the great bulk of wealth is in the hands of domestic businessmen, is no different in this respect from that in countries like Indonesia or Burma, where a large share of investment is still in the hands of foreigners.

Economic Development Versus Rural Social Work

Thus we conclude that any policy designed to keep people on the land is anti-developmental. Any such policy must fall instead into one of two

categories: (a) it may be a policy designed to establish the pre-conditions for take-off, or (b) it may come under the heading of rural social work.

Establishing Pre-Conditions

It may be that with limited resources, an underdeveloped country is unable to plan realistically for a take-off in the near future. In that event, there may be a case for concentrating on raising agricultural productivity in the short run, so as to produce the surplusses that can be recaptured to finance the next phase of economic growth. If this route to a take-off is the only one open to a particular country, of course no argument can be made against it. However, it is a route that can easily lead instead to further stagnation. Raising agricultural productivity as part of a program for establishing pre-conditions for a take-off means preventing the increase in agricultural output from raising rural living standards.

This "up by the bootstraps" approach has succeeded in the past only where severe sacrifices have been forced on the masses of the people, to provide a basis for capital accumulation. The "up by the bootstraps" approach proposed for underdeveloped areas today may not require reductions in the standard of living to start the development process, but it does mean that the initial increases in output must be denied to the people, in order to provide an export surplus to finance further expansion. An integral part of the scheme is the increase in taxation for farmers, first to compel them to produce as much as before although they have fewer mouths to feed, and secondly, to drain off the increase in output and income as the development projects have their effect. This increase in taxation, and consequent prevention of initial improvements in living

standards, is necessary, not only to provide an export surplus, but also to prevent the increased productivity from being converted into increased leisure or a more rapid rate of population growth rather than into increased output. Given the tax structures and general political situations in countries such as India and Indonesia, it is highly questionable whether small increases in per capita income obtainable through improvements in techniques with the present structure of the economy can be recaptured in their entirety.

Rural Social Work

If it is felt that true development is impossible, there may be a case on purely humanitarian grounds for doing everything possible to alleviate the misery of people living in the peasant agriculture and handicrafts sector. A good deal of what has actually been done by community development programs would seem to fall into this category. Moreover, a good deal of the urban community development now being recommended to supplement rural community development would also have to be characterized as urban social work rather than economic development. There is of course nothing wrong with endeavoring to improve levels of social welfare; but we should be perfectly clear when we are engaging in social welfare programs and when we are assisting countries with their economic development.

Role of Community Development

Can the social work aspects of community development be carried out without absorbing scarce resources? The basic idea of community development is to make use of resources that would otherwise remain idle. If in fact no scarce resources were used, community development programs would

presumably do little harm, even if they were exclusively of the social work variety. There is of course some danger that raising levels of social welfare will accelerate population growth once more; there is nothing in our demographic knowledge to suggest it would not, unless a deliberate effort is made to introduce family planning along with improved public health. If population growth is accelerated, community development may make a later take-off all the more difficult. In that case community development would be directly opposed to economic development.

Unfortunately, the situation is not so favorable to community development programs, since community development does absorb some scarce resources. Insofar as community development programs remain part of the technical assistance provided by Western countries they absorb budget funds, reducing the amounts available for other foreign aid projects. They utilize technical expertise from the Western countries which is scarce even in these countries. The same is true of administrative personnel in aid-giving countries. Community development also uses at least some budget funds and capital goods of underdeveloped countries, no matter how simple the community development projects may be. Most serious, they absorb the extremely scarce administrative and technical capacities of personnel in the underdeveloped country.

There is then a grave danger that expansion of community development programs may actually retard economic development. The extent to which they do so will depend on the extent to which community development takes the "social work" form, improving levels of rural welfare and making it more attractive for people to stay where they are.

Could community development programs be designed to accelerate the removal of people from agriculture? It would be useful to review

community development projects in these terms. Which of them could properly be considered projects designed to get people off the land? The improvement of transport facilities, which permit a higher degree of specialization and increased contrast between rural and urban centers, might accelerate the flow of people from the rural to the industrial sector. General education may provide the basis for acquisition of industrial skills. Community development programs might give more weight to the kind of training which will either produce industrial skills directly, or permit their more rapid acquisition on the job. Even health programs, while fraught with dangers, may improve the industrial work capacity of people now living in rural areas. The same is true of increases in agricultural productivity which permit rising levels of nutrition combined with reduction of the numbers of people on the land.

Thus our theory does not constitute an argument against community development as such, but only against community development projects of a kind designed to make life more attractive in the villages, as opposed to projects designed to facilitate a flow of people from the rural to the industrial sector. Economic development, as here defined, requires both agricultural improvement of a kind involving a shift to more extensive and mechanized agriculture, and more rapid industrialization. In a word, it means vastly increased levels of investment, which in turn means greatly increased foreign aid.

Questions of absorptive capacity become relevant here. Professor Malenbaum is no doubt correct in his appraisal of the practical possibilities for India at this moment. Even if aid to India were greatly increased, it may prove that absorptive capacity is insufficient to utilize

it unless a much larger share of the administrative and technical requirements are also provided from the West. The political problems implicit in such a program are apparent.¹ What I would argue, however, is that the recommendations made by Professor Malenbaum are tantamount to postponement of a take-off for India for a considerable length of time, if not forever. I doubt whether, given the political and administrative barriers to recapturing the modest increases in agricultural output that can be expected through improvements in agricultural technique with present size of holdings, community development programs can be regarded as a device even for establishing the pre-conditions for take-off. Given the current situation, rural social work may be the best that can be done, but it is misleading to call it economic development.

¹The possibility of such a program should not, however, be altogether excluded. Mr. S. Habib Ahmed, Chief of the Southeast Asia Section of the United Nations Technical Assistance Administration, reports increasing interest among governments of Asian countries in receiving technical assistance in executive positions. Together with the recent offer of the United States to increase its contribution to the United Nations Technical Assistance Administration to \$100,000,000 per year, this trend may provide the basis for building up absorptive capacity for greatly expanded capital assistance.