MARKET DISTORTIONS AND ECONOMIC DEVELOPMENT

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MARKET DISTORTIONS is one of the most widely discussed and controversial problems in the theories of growth for developing regions. The problem is controversial for two important reasons. First, discussions of market distortions are always related to considerations of trade and domestic industrial policies. Second, theoretical differences in development problems are largely attributable to different views on workability of markets. Differences in theoretical conclusions, however, seem to stem not from genuine differences in ideology, but from the inadequate formulations of conventional development theory.

A new framework is needed particularly when attempts are made to analyze financial markets of rural areas in less developed nations. These markets are considered the most distorted of all due to the virtual nonexistence of capital market and an all-pervasive and discriminatory intervention by central governments [39, p. 48] [26, p. 302].

The main objective that I have assigned to myself here is the reformulation of conventional development theories with special emphasis on the financial markets by bringing explicitly the market distortions into the analysis.

I

The financial market distortions are a type of factor market distortions and have been extensively discussed in the recent literature on trade theory and economic welfare [22] [7]. Much of the discussion is focused on distortions in the labor market despite the importance of financial market distortions in economic development. There are probably two reasons why the problem of distortion in the financial market has not attracted the attention of economic theorists when they examine those problems that arise in the labor market. One is the continuing appeal of the theory of disguised unemployment or the theory of surplus labor originated by W. A. Lewis [19] and developed by R. Nurkse [33], D. W. Jorgenson [16], and Fei-Ranis [10]. These theories placed much strategic importance

on the labor factor of production as a means of economic development. Discussion here centers on how surplus labor, originating in the subsistence agricultural sector, can be transferred into the modern manufacturing sector in order to achieve a maximum rate of economic growth under conditions of labor market distortion. The other reason lies in the importance of labor cost as a determinant of the value of product the tradition for which can be traced back to the Ricardian theory of comparative cost advantage. The Hagen article, initiator of recent rigorous discussion on factor market distortion, states that "interest costs are typically much smaller than labor costs, and...the differential in interest costs is typically a far smaller share of total costs than the differential in wage costs" [12, p. 511]. Recently, however, the financial aspect of economic dualism or distortions, as a serious disturbance to further economic development, has been brought to the fore by Myint [30] [26, Chap. 14], McKinnon [24], Shaw [39], and IMF economists [4] [17].

Before we discuss some of the important propositions advanced by these writers, there is a problem of definitions that has to be cleared up first. The word "distortion" is a distressingly elusive concept when used in the context of economic development. In conventional trade theory, distortion is defined as divergence of commodity price ratio from the corresponding marginal rate of transformation. This can be explained by using a traditional two-factor-two-commodity model. Let PA, PM and WA, WM, rA, rM denote commodity and factor prices in agricultural product A and manufacturing product M, and Al, AK, Ml, MK, denote the marginal productivities of labor and capital in A and M. Under conditions of perfect competition, the well-known first-order marginal conditions of Pareto optimality will be satisfied:

$$\frac{PA}{PM} = \frac{AK}{MK} = \frac{rA}{rM}, \qquad (1)$$

$$\frac{PA}{PM} = \frac{Al}{Ml} = \frac{WA}{WM}, \qquad (2)$$

where the right-hand side of both equations is equal to one, so that the value of marginal productivity of each factor of production is the same for both industries. Distortions arise when these conditions are violated. This is shown more clearly by use of a simple diagram.

Figure 1 shows conventional transformation curves with agricultural product on the vertical axis and manufacturing product on the horizontal axis. Under conditions of perfect competition, which rule out distortion, the exchange ratios are tangent to the transformation curve ARM. That is to say, the exchange ratio is equal to the marginal rate of transformation between A and M. But if there is a distortion in capital markets, e.g., capital cost (interest rate) of equivalent capital is lower in industry than in agriculture as in many underdeveloped countries, then more capital and less labor will be used in the former in order to produce one unit of output than would be the case in perfect competition. Production will now become less efficient than before, and the transformation

Fig. 1.
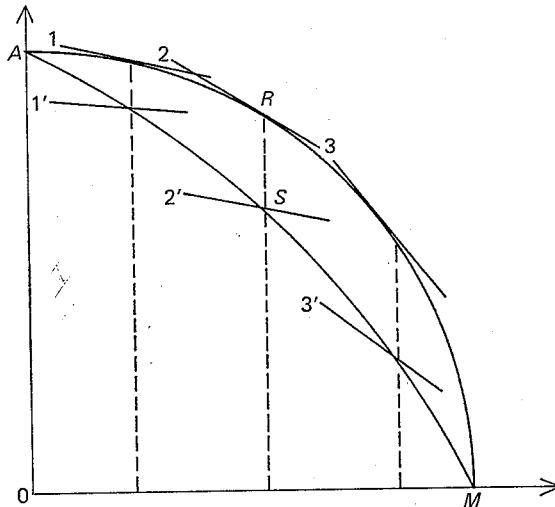
curve ASM will lie inside the original curve ARM.[1] Since the marginal prod-uctivity value of capital in industry is lower than it is in agriculture, the exchange ratio line cuts the transformation curve ASM at any point of production. Further-more, the exchange ratios under the distortion have lower negative slope than under the nondistortion as shown in Figure 1, indicating that the exchange cost of commodity A is lower than its opportunity cost at any production point.[2]

This definition of distortion as a marginal divergence from optimum condi-tions that assumes all the essential properties of a perfectly competitive market (homogeneous factors of production, perfect knowledge of production technique and markets, divisibility and malleability of the production process, and costless acquisition of information, management, and transportation) is not only in-adequate but also highly harmful in dealing with the distortions of economic policy in the underdeveloped countries where conditions are a far cry from those of the model.

Corden defines distortion more narrowly than the trade theorists by classifying marginal divergences into (1) distortion and (2) endogenous divergence [7, p. 13]. According to Corden, distortions are divergences "caused by government policy of some kind, such as a tariff or other form of tax" [7, p. 13]. Distortions are further classified into (1) byproduct distortions caused by "a government policy designed to correct, or partially correct a divergence" [7, p. 13] and (2) what Corden simply calls "distortions" caused by tariff, factory and minimum wage legislations, social regulations, and prestige-cum-humanitarian policy control for historical-political reasons. Endogenous divergences are those caused by market

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[1] This can be easily shown by using the Edgeworth-Bowley box diagram. See [40].
[2] Hagen showed this mathematically for labor market distortion where wages in industry are higher than in agriculture. The case presented here can be demonstrated in the same manner. See [12, p. 508].

failure or by laissez-faire policies such as monopoly in both product and factor markets, imperfect knowledge, disguised unemployment, the rural-urban dichotomy, and externalities which are not easily removed by government action. Corden's definition of distortion is more operational than that used in most trade theories, containing certain normative and welfare implications. In Corden's treatment of distortions, however, it is still extremely difficult to distinguish the endogenous divergences from the byproduct distortions because developments of the private market economy are deeply interrelated with government economic policies. For example, monopoly power in a particular industry will be aided greatly by various government protective measures.

Corden's system of classification corresponds to Bhagwati's three types of distortions: (1) endogenous distortion (Corden's endogenous divergence), (2) policy-imposed instrumental distortion (byproduct distortion), and (3) policy-imposed autonomous distortion (Corden's "distortion") [2, p. 73]. Magee lists the various causes of factor price differentials according to the Bhagwati classification [22, p. 3]. It should be noted that "a distortion can always be attributed to a differential of one sort or another, but not every differential implies that a distortion exists. Thus, a differential is a necessary but not a sufficient condition for a distortion" [22, pp. 2–3]. According to Magee, a sufficient condition for distortion exists when a differential in factor prices does not reflect their true scarcity or opportunity costs. Therefore, the well-known fact that wages in the urban sector are higher than in the rural may not represent a genuine distortion in the labor market reflecting higher urban costs of living, the higher productivity of urban workers, and the possible disutility of moving from the rural sector into the city.

Myint's classification of market distortions, what he interchangeably calls "market imperfection," in terms of the historical evolution of a market economy, gives more perspective and insight into the distortion problems of the under-developed countries than previous classifications. What Myint calls "spontaneous distortions" which are caused by "the imperfect mobility and divisibility of the factors of production and imperfect knowledge which may be considered as arising naturally from the existing economic conditions" [26, p. 303] [29, p. 128] is particularly relevant to the study of an underdeveloped economy where the market system is still in a primitive stage. On the other hand, what Myint calls "artificial distortions" induced by government policies, trade union, and mono-poly powers may be equally pervasive in the advanced market economies as well as the underdeveloped countries. Myint's third category, "externality distortions" caused by divergences between social and private costs may be more relevant and important to advanced than underdeveloped countries.

To develop a market economy, it is of the utmost importance to identify and distinguish spontaneous from artificial distortions and establish a new analytical framework on which proper development policies can be based. McKinnon further advanced Myint's framework in the right direction:

I hypothesize that the economic profile of underdeveloped countries is dominated by fragmentation in the market for land, labor, and capital, as well as fragmenta-

tion in the distribution of knowledge and technical opportunities. There is a wide variety of returns to be earned on existing and potential investments which cannot be easily delineated by type of product or sector. This dispersion of returns in capital markets may be classified as a "distortion," but there is no tax-subsidy arrangement by which governments can costlessly compensate for it, given the great uncertainty involved in identifying entrepreneurs with access to profitable investments. [23, p. 508]

Myint-McKinnon's concept of market distortion, which visualizes segmentation of the factor market, particularly financial markets, will nullify conventional theories and policies which have treated the distortion problem in terms of aggregate concept.

The theoretical foundations of market distortion in conventional theories should be reviewed as critically as possible and a new analytical framework based upon the Myint-McKinnon thesis developed.

II

Conventional growth models can be classified in three general categories according to how each looks at the effectiveness of the market system for economic development: viz., (1) neoclassical optimum theory, (2) balanced growth theory, and (3) unbalanced growth theory. Each theory will be discussed here in relation to its relevance to market conditions in the underdeveloped countries.

A. Neoclassical Optimum Theory

As briefly discussed in the previous section, one of the basic assumptions of a development theory of the classical or neoclassical optimum theory is a highly developed market system. The most important aspect of such theory as far as this investigation is concerned is the assumption of perfect competition in both product and factor markets. This assumption contains several notorious implications: (a) all producing firms of a particular industry try to maximize their profits under the conditions of perfect knowledge on the use of inputs and disposition of outputs. Thus, all individual firms can buy unlimited quantities of homogeneous inputs at a given set of factor prices and produce homogeneous output which can be sold in indefinite amounts at a uniform price; (b) inputs and outputs are perfectly divisible and mobile from one use or place to another ruling out any occurrence of technological economy or diseconomy. Under a regime of complete divisibility, substitutability, and mobility of production resources are utilized to the point of maximum profit where the value of marginal product of the resource in all uses equals its market price. Thus, production within a firm can always be regarded as "a miniature replica of the aggregate production function, with all firms having access to the same technology and to the same prices in commodity and factor markets" [24, p. 43]; (c) the organizational frameworks are fully developed to the extent that all decision-making production units are linked together by purely impersonal and nondiscriminating forces of the pricing system which will disseminate the accurate information without costing the producers and provide the incentive for all production units so that they

can decide what best to produce and how. Moreover, if the system was disturbed by some endogenous force such as a change in technology, "the auctioner would immediately announce the new market clearing price vector and, given the implied infinite velocity of price adjustments, the system would immediately adjust to its new optimal position" [14, p. 12]. These are major assumptions on which neoclassical theory is elegantly built. From the assumption of perfect competition in all markets, it is also obvious that the theory does not assume the existence of trade unions, monopoly power, and foreign trade restrictions.

The pure optimum theory is a branch of normative or welfare economics which tries to explain optimum conditions under the ideal state of a market economy. Thus all practical economists will probably agree with the goals the theory tries to achieve. But why then is there such mounting criticism? Myrdal, an outstanding critic, urges young economists to unlearn the theory in developing a frame of reference for economic development: "I would instead wish them to have the courage to throw away large structures of meaningless, irrelevant and sometimes blantantly inadequate doctrines and theoretical approaches, and to start their thinking afresh from a study of their own needs and problems" [31, p. 101]. Is Myrdal justified? It seems that there are two sources of misunderstanding of the optimum theory. One source of misunderstanding comes from optimum theory economist who, in the past, attempted to apply their ideas directly to conditions in the underdeveloped economies which are a far cry from assumed conditions. They tended to conclude that differences in factor prices, i.e., wage and interest rates, and product prices in or different part of an underdeveloped economy are deviations from the optimum conditions and should therefore be corrected by appropriate economic policies which will provide an optimum allocation of resources. Harberger estimated welfare costs of Chilean economic distortions by employing the neoclassical Cobb-Douglas production function and assumptions. He concluded that "the welfare costs of external distortions are less than 2½ per cent of the national income, the welfare costs of internal distortions among sectors less than 10 per cent of the national income and the welfare costs of within-sector distortions less than 3 per cent of the national income. I reach the judgment that eliminating resource misallocations while maintaining existing production functions might raise the level of national welfare by some 15 per cent, but probably not more" [13, p. 140]. Though Harberger considers the lost growth rate due to distortions insignificant compared with technological advances, this type of calculation will be easily carried out by development planners in some other underdeveloped countries which might show a substantial welfare loss, thereby justifying various corrective devices of governments. Quite often, these mistaken optimum policies further aggravated the existing misallocation of resources. In fact, Myint well documented a case of Burmian rice-marketing-board operations where rice was being purchased by uniform price irrespective of production and marketing costs.[3]

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[3] Although, Professor Myint is referring to a case of misallocation of resources induced by state interference, the misapplication of the optimum theory will induce the similar result. See Myint [26, pp. 16–17].

Critics of optimum theory will also be blamed for their failure to distinguish between the true concept of optimum theory and the ill-conceived and inadequately formulated models on which their criticism usually is based. Most optimum models formulated in mathematical terms are designed to seek optimum conditions within the model structure and not to be relevant to underdeveloped countries.

The validity of an economic theory depends upon how much its underlying assumptions approximate actual conditions in an economy. We know now that producers in underdeveloped countries are highly responsive to price changes and are basically trying to maximize profits as assumed by optimum theory [1]. It is, however, highly questionable whether the pricing system of the underdeveloped countries can be used to allocate scarce resources. The economies of the underdeveloped countries are highly "fragmented" in the sense that production units are isolated by a lack of marketing and communication systems and they face different effective prices for the factors of production and products without the same technological opportunities. Thus "the market mechanism has become no better, and perhaps even wrong, as an indicator of social advantage" [24, p. 7]. Even a significant penetration of the market economy can be seen in a certain rural economies where "the extent and type of involvement in markets of the different sections of the peasantry are not all uniform" [3, p. 3]. The assumption of perfect competition based upon perfect knowledge is irrelevant to the conditions of the underdeveloped countries and must be discarded. The optimum theory starts the analysis supposing that all technological and organizational problems have already been solved. In fact, however, the essence of the development problem lies in these assumptions. In addition to their restrictions, optimum theory, particularly the fashionable mathematical models, cannot adequately analyze the organizational problems that are a present focal point of problems which should be analyzed in the context of historical evolution of the market economy [30].

B. Balanced Growth Theory

The balanced growth theory entered the development literature as a critic of the static optimum theory which promised mutual economic advancements among the trading nations through an undisturbed free market mechanism. The concern here is a discussion of implicit and explicit assumption of major balanced growth models in the context of actual market conditions in the underdeveloped countries.[4]

Although there are significant differences in the view of how effective the market mechanism is for economic development, all balanced growth models reject the concept of marginal adjustment based upon perfect competition stressing structural problems inherent in underdeveloped economies which can be solved only by appropriate government intervention. The most planning-oriented and therefore least free-market approach to economic development will be found in

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4 For neat and critical discussions of the various versions of the balanced growth theory, see Myint [29, Chaps. 7 and 8].

the "big push" version of the balanced growth theory expounded by Rosenstein-Rodan [35]. Myint calls this the most pronounced version of the "all-or-nothing approach" of balanced growth theory [29, p. 97]. "Big push" emphasizes the importance of technical complementarities and benefits of external economy in all industrial sectors by overcoming technical indivisibilities and small size of domestic markets through simultaneous expansion of "lump-sum" investment programs for all sectors of the economy.

The "big push" model may have appeal for frustrated economic planners in underdeveloped countries who might use it to elicit more foreign aid for development projects, but it contains serious drawbacks if the model's underlying assumptions are examined in the context of long-run economic development. First, despite the appearance of total neglect of the free market mechanism as an engine of economic growth, it implicitly assumes the existence of a powerful engine of market mechanism which will create an expansionary chain-effect on all economic fronts once the government initiates "big-push" investment. The theory assumes further that once the government creates the "growth point," it can be carried out in an expansionary fashion with a well-functioning market system. Simultaneous injections of huge investment in all sectors, however, will not automatically lead to multiple expansion of income on a continuing basis unless one assumes that response by factor and product markets[5] is sufficient enough to absorb the injections very efficiently. Hirschman has pointed out that the theory is essentially a "Keynesian analysis of the slump" [15, p. 54] which can be usefully applied to an advanced market economy in a short-run underemployment situation. Thus, this big-push version of growth theory is subject to the same criticism as neoclassical theory because it supposes highly developed organizational and market conditions in underdeveloped countries.

Furthermore, if we interpret the "market responsiveness" in the broader sense, the relevance of "big-push" theory suffers from market imperfections as much as optimum theory because, as is well known, administrative and bureaucratic machinery are deficient in coordinating and implementing complicated investment programs in underdeveloped countries.

> For if the private sector suffers from a shortage of entrepreneurs, the government sector will equally suffer from a shortage of administrators who can perform these entrepreneurial functions.... The balanced-growth approach makes an impossible demand on the underdeveloped countries by requiring them to provide, all at once, entrepreneurs and managers to run a whole flock of new industries; if they could do this, they would not be underdeveloped in the first place. [29, p. 102]

Another well-known version of balanced growth theory is that of surplus labor or disguised unemployment originated by W. A. Lewis and R. Nurkse. This theory is supposed to be particularly relevant to an underdeveloped situation

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[5] It should be noted that the term "market" used here has a much broader meaning than the conventional usage. It includes not only direct physical inputs such as labor, capital and land, and final products but also nondirect service inputs such as managerial and administrative skills, transportation and communication services, and informational services which can only be created in the historical development process.

where the subsistence sector dominates the entire labor force with an excessively large number of agricultural workers whose marginal productivity is negligible, zero, or even negative. Economic development is to proceed by making full use of the "concealed saving potential" of abundant surplus labor in the more productive capitalist sector. This is now a popular classic in development literature which can be found in any text. An analysis of how the market mechanism is assumed to work in this version of the balanced growth model is in order. As a "big-push" version, this theory also insists that there are significant market imperfections particularly in the agricultural labor market where wages are not determined by marginal productivity of labor as assumed by optimum theory. Instead they are determined by minimum subsistence funds equal to the average product of labor.

There is, however, a significant difference between the "big-push" version and the surplus labor version in its view of deficiency in the market system. Surplus labor is a variant of classical optimum rather than Keynesian theory because it conceives structural problems in terms of labor market imperfection trying to solve them essentially through the market mechanism by subsidizing the manufacturing sector which is to absorb surplus labor with its zero opportunity costs. Though the method suggested by Lewis to correct the labor market distortion is not the best in light of contemporary optimum theory,[6] the surplus labor theory takes the view that economic development will be accelerated by simultaneous expansion of markets both in agricultural and manufacturing sectors through correcting and strengthening operation of the market mechanism.

In order to mount an adequate critique of the labor surplus version of balanced growth theory, at least three questions must be answered about its underlying assumptions. The first is whether it is justifiable to assume that the agriculture is less productive than the manufacturing sector. Historically, it is true that all impressive development processes have taken place with a dramatic shift of industrial structure from agriculture to manufacturing (cf. [6] [18]). It is equally true that all successful industrializations have been initiated by continuous increases in agricultural productivity [18]. Thus, it is important to recognize, as labor surplus theorists do, that the speed of the development process is determined by the rate of growth in agricultural productivity. The labor surplus theorists, however, have failed to analyze the very nature of development processes which cannot be fostered simply by transferring disguised surplus labor from the subsistence sector into the advanced manufacturing sector.

The second question is related to the existence of disguised unemployment of which marginal productivity is assumed to be zero; that is to say, the surplus labor can be removed without reducing total agricultural output. Myint argues that disguised unemployment is "the optical illusion of the concealed saving potential based on misconception" [29, p. 69]. As he and others have pointed

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6 Lewis suggested to raise the prices of manufactures relatively to farm products, and also to levy taxes upon the collective farms in order to correct the distortion [19, p. 434] but the first-best policy to correct distortions is to attack the source of distortion; namely, by applying wage subsidies (Corden [7, p. 27]).

out, the theory fails to distinguish between zero marginal product from a unit of labor and that from a worker [38]. Under this new theoretical formulation of disguised unemployment, we must assume, together with given production conditions, that the remaining workers have the incentive to work longer hours than they did before in order to keep total output constant after removal of surplus workers. Moreover, workers who remain are required to produce more than before in order to satisfy the increased demand for food from the manufacturing sector [29, p. 69].

The last and probably most important question is whether the economic growth of the underdeveloped countries has suffered more from shortage of underutilization of capital. All balanced growth theories agree that the most important missing factor for the economic development is capital accumulation. W. A. Lewis is often quoted for his famous dictum: "the central problem in the theory of economic growth is to understand the process by which a community is converted from being a 5% to a 12% saver—with all the changes in attitudes, in institutions and in techniques which accompany this conversion" [20, pp. 225–26] (see also [36, p. 33]). Lack of savings is the most important obstacle to economic development because the theory implicitly assumes that all savings are fully utilized for profitable investment. Thus the balanced growth theory logically leads to a justification of "forced savings" to finance economic development since "inflation for the purpose of creating productive capital is self-destructive" [19, pp. 448–49]. In many underdeveloped countries, however, the basic "scarce factor" may not be the shortage of savings but the ability to absorb and invest capital effectively [29, p. 103]. A recent study indicates that "productive capacity in developing countries is under-employed or unemployed to a much greater extent than in developed countries" [21, pp. 9, 80–113].

The basic weakness of the balanced growth theory is in its fallacy of assuming that investments will automatically create a highly stimulating market condition where all productive resources are efficiently utilized.

C. *Unbalanced Growth Theory*

By criticizing the saving-equals-to-investment model of the balanced growth theory, Hirschman proposed an alternative theory of development, fashionably called the "unbalanced growth theory" [15]. The theory can also be called the "absorptive capacity" approach because of its particular emphasis on the "ability to invest" instead of the "ability to save." In Hirschman's words, "development is held back primarily by the difficulties of channelling existing or potentially existing savings into available productive investment opportunities, i.e., by a shortage of the ability to make and carry out development decisions" [15, p. 36].

According to the unbalanced growth theory, the central propositions for economic development are (1) to create the conditions under which the investment decision can be easily carried out, and (2) to choose the investment decision which will induce the maximum external or "linkage" effects among the various industries. To answer the first proposition, economic policy must be directed towards creating a sequence of disequilibria and tension so that the private

investors are continuously induced to make dynamic investment decisions. The second proposition is based upon the concept of technical complementarities advanced by balanced growth theorists [37] and the concept of vertical linkages between industries at different stages of production [11]. Contrary to the simultaneous set-up of complementary industries in the balanced growth model, Hirschman proposes investment in selected strategic industries to induce a strong linkage effect in the economy. In actual implementation of the unbalanced growth plan, the linkage effects will be measured by using an input-output type model which assumes, among other things, fixed input-output technical coefficients between different industrial sectors and the existence of adequate productive capacities in all related industries. Thus, investable resources are allocated according to the magnitude of industry multipliers which can be easily computed from the inverted matrix of the input-output table. This approach has been frequently criticized because "it focuses attention only on the technically possible linkages between the quantities of inputs and outputs without explicitly considering the economic realization of these linkages which depends on the *costs and prices* of the inputs and outputs" [29, p. 131]. In fact, the unbalanced growth theory implicitly assumes that the greater external economy through linkage effect will induce greater cost and price reductions so that, in the long run, strategic industry will become competitive in the international market. The validity of this assumption, however, depends to a large extent on "the responsiveness of private enterprise in the underdeveloped countries to a disequilibrium situation with profitable opportunities of increasing investment" [29, p. 101].

Under present market conditions in underdeveloped countries, there is no guarantee whatsoever that the deliberately created *desirable* disequilibrium will be more than counterbalanced by another *desirable* disequilibrium creating forces from the standpoint of the efficient allocation of resources. The likely result will be an intensification of already existing undesirable disequilibria in the allocation of resources created by excessive industrialization vis-à-vis the development of agriculture. Contrary to Hirschman's assertion that underdeveloped countries are in a great shortage of efficient administrators, particularly in government, his thesis implicitly assumes that administrators in those countries are well informed and have the ability to construct an economic program. This clearly shows expected linkage effects of the complicated set of economic interactions among various industrial sectors and tells private entrepreneurs about which investment projects should be undertaken. As a matter of fact, unbalanced growth theory would require more efficient planners than balanced growth.

III

After briefly examining the main growth theories of the economic development, an alternative theoretical framework will be presented based on the Myint-McKinnon thesis.

The major fallacy of conventional development theories is in the mistaken view of actual market conditions in developing countries. Optimum theory has

failed to incorporate the pronounced market imperfections of the underdeveloped countries in its assumption that homogeneous production conditions exist under which any economic variable can be divided and aggregated without affecting relative prices and technical conditions of the production function. The aggregate production function in developing countries is embryonic and largely unformed due to the underdeveloped organizational framework. Thus the use of aggregates in such economies will conceal rather than reveal the crux of the development problem.

> It may be justifiable to add sword and plowshares at their production costs in an advanced country, and quite meaningless in an underdeveloped country. If there is excess demand in one sector and excess supply in another, but the supply in one cannot be used to meet the demand in the other, there is no sense in talking of aggregate demand or aggregate supply. [32, p. 1951]

What Myrdal calls "the fallacy of misplaced aggregation" [32, pp. 1951–53] is also pronounced in the modern Harrod-Domar type of growth model which has been extensively used for economic planning in many underdeveloped countries [32, p. 1945]. This model is constructed on the concept of average fixed "capital-output ratio" which can be computed from aggregate capital stock and production functions. Thus, of crucial importance for economic growth is an increase in aggregate saving which will automatically increase output according to a fixed capital-output ratio. This model is primarily intended to explain dynamic stability conditions in fully advanced countries where capital-output ratio is fairly stable in the long run and functional relationships between production, consumption, and saving are well defined. In the underdeveloped economy, where distinction between consumption and investment is ambiguous and where capital-output ratio changes significantly not only from industry to industry but also within industry, the use of such aggregate ratio for development planning will complicate rather than solve the problem.

Another common fallacy of conventional theories is their failure to examine their relevance in relation to the evolution of the organizational and marketing framework. All development theories discussed here more or less assume what Myrdal calls "adapted *ceteris paribus* or automatic *mutatis mutandis*" conditions with respect to the operation of the market organization. This assumes that the organizational framework is well developed to such an extent that "people either want to work, whether equipment is available or not (*ceteris paribus*), or that they will be automatically *induced* to want to work as a result of the provision of equipment" [32, p. 1945]. The automatic *mutatis mutandis* assumption has led many development economists to the "fallacy of misplaced concreteness" [34, p. 51] which arises from the idea that the introduction of sophisticated modern factories will simultaneously create conditions for rapid economic development.

The aim is now clear. We are concerned with market conditions or, in a broader sense, the development of an organizational framework which is assumed as solved in conventional theories before the analysis of optimum allocation of resources or investment planning is made.

Two commonly accepted premises for economic development aims and the systematic means to achieve it are: (1) the most important thing about economic development is that it will increase the real per capita income of people in under-developed countries on a continuing basis; (2) the guided market system is better suited to achieve this than the centrally planned system. Premise (1) does not preclude the problem of income distribution. Here relative income is considered less important than growth of absolute income for the most poverty stricken of underdeveloped countries. A recent study also shows that "the objective of distributive justice is more usefully conceived of as accelerating the development of the poorer groups in society than in terms of relative share of income" [5, p. 42].

The second premise presupposes that the market system is more reliable and efficient in allocating scarce resources than the planning system. Theoretically, we do know that the purely competitive price mechanism gives the same result as the purely centralized planning system in resource allocation (cf. [8]). There is, however, definite evidence that market is superior to planning machinery in obtaining a rapid growth rate.[7]

We consider a peasant agricultural economy which contains some small cottage manufacturing industries under the closed system, that is to say, where no foreign trade has begun. We assume that there is:

(1) Segmentation: Instead of a highly competitive market system as in the conventional theories, we assume that the markets are highly segmented "in the sense that firms and households are so isolated that they face different effective prices for land, labour, capital, and produced commodities and do not have access to the same technology" [24, p. 12].

(2) Indivisibility: Labor and capital are indivisible and employed on a discrete basis instead of a divisible or marginal basis as in neoclassical theory. Thus, an investment will not take place until small-scale entrepreneurs can accumulate or raise funds sufficiently large enough to finance a planned investment project even though profitable investment opportunities are abundant. In the fragmented peasant economy "poverty and the inability to borrow to finance *discrete* increases in expenditures can be formidable barriers to the adoption of even the simple and most productive innovations" [24, p. 12]. As previously mentioned, balanced and unbalanced growth theories also emphasize the importance of "indivisibility" in employing capital. In this model, however, we use "indivisibility" in the sense that Professor Myint uses it:

> In particular, the new methods of agriculture made available by the Green Revolution require a considerable increase in cash investment in various inputs, such as fertilizer, pump sets for irrigation and in other simple types of farm equipment. The capital sums involved in this type of investment are quite modest, but they

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7 Professor Myint has compared the rate of economic development between Malaya, Thailand, and the Philippines where government policies are "outward-looking" operating mainly through the market mechanism and those of India and Burma where planning-oriented "inward-looking" policies are pursued. He concludes that the former has grown more rapidly.

are large and "indivisible" in relation to the low cash incomes of the farmers. . . .
The sum of numerous small additions to output which can be obtained by over-
coming the "indivisibilities in the small," in filling up the numerous gaps in the
production structure of the unorganized sector and in equalizing the returns on the
resources in the myriads of small economic units in that sector, is likely to be
larger in the aggregate than the more spectacular gains from the economies of
scale in a few large-scale investment projects in the modern sector. [30, p. 15]

It is the "indivisibilities in the small" of capital funds which are required for
the small-scale agricultural production and not "indivisibilities in the large" re-
quired in balanced and unbalanced investment programs.

(3) Complementarity: We assume complementary relationships on three
fronts. (a) Instead of the neoclassical assumption of perfect substitutability be-
tween factors of production, e.g., capital and labor in the production process,
we assume "complementarities in the small" between them, the logical con-
sequence of the indivisibility assumption made in (2). In the segmented economy,
this can be interpreted as meaning that available technological choices cannot
be utilized without the minimum provision of complementary factors including
capital, labor, land, and knowledge on a particular technological choice [9].
(b) On the saving-investment front, we assume that the cash savings are a neces-
sary requirement for physical investments. This will be justified on the grounds
that peasant farmers depend mainly upon self-finance to finance their small pro-
jects investment due to the nonexistence of a financial market. Thus in the
underdeveloped peasant economy, "the demand for real cash balances and the
demand for physical capital are highly *complementary* in private asset portfolios,
in contrast to prevailing theory, where a substitution relationship is dominant"
[24, p. 40]. (c) The third but most important complementary relationships in
the context of present investigation are inter- or intra-industry linkage relation-
ships in both factor and product markets. As we have already discussed, the
neoclassical production process assumes a constant return to scale which rules
out external linkage effects of market expansion. Production processes which
take into account external linkage effects are well documented by Scitovsky
as based upon an earlier work by Meade. According to Meade, the external
linkage effect (or external economies) exists whenever the product of industry 1
(x_1) depends not only on the factors of production (l_1, c_1, . . .) utilized in industry
1, but also on the product of industry 2 (x_2) and factors of production (l_2, c_2, . . .)
utilized in industry 2; namely, $x_1 = F$ (l_1, c_1, . . .; x_2, l_2, . . .) [25]. Scitovsky's
concept of external economies is wider and more useful in the development
context than Meade's, including what he calls "pecuniary external economies"
induced by interactions among producers through the market mechanism. This
is in addition to Meade's concept of technological external economies induced
by direct and nonmarket interdependence among producers:

It seems that external economies are invoked whenever the profits of one producer
are affected by the actions of other producers. To facilitate comparison with
Meade's definition, we can express this in symbols by the function $P_1 = G$ (x_1, l_1,
c_1, . . .; x_2, l_2, c_2, . . .), which shows that the *profits* of the firm depend not only
on its own output and factor inputs but also on the output and factor inputs of

other firms; and we shall say that in the context of underdeveloped countries external economies are said to exist whenever the variables to the right of the semicolon are present. [37, p. 300]

It should be stressed that the concern here is on "spontaneous linkage effects" which work through spontaneous changes in the price system brought out by gradually overcoming market distortions. Linkage effects are conceived in a small but gradually expanding production process being initiated by cumulative forces of small technical changes in the agricultural sector. Thus they are different from the "linkage effects" of conventional models which "are conceived purely in terms of the technically given and fixed coefficients of production and do not take into account the relative costs and prices of the domestically produced products and the imported products" [28, p. 27].

A more careful formulation of the Optimum Theory should however recognize that in any given situation there would be irreducible costs of moving resources from one use to another. These include transport costs, transaction and administrative costs and, most important of all, the cost of searching for knowledge concerning alternative economic opportunities. [30, p. 10]

If we attempt to use a production function considering the cost of searching for information, we have to add a new variable to the aforementioned Scitovsky's production function: $P_1 = G(x_1, l_1, c_1, \ldots; x_2, l_2, c_2, \ldots; b)$ where b is the amount of information used in the production process of P_1.

(4) Uncertainty: One of the serious weaknesses of conventional development theory is its failure to incorporate the real costs involved from uncertainty into the production function. Neoclassical optimum theory explicitly assumes the "perfect foresight" with respect to the present and future production conditions. Thus producers and suppliers of resources are assumed to obtain all necessary information without cost for present and future economic activities. Modern balanced and unbalanced growth theories also have the implicit assumption that private investors as well as government planners possess information accurate enough to make correct investment decisions. This could only be true in an advanced economy where the price signal can be safely used as a reliable indicator in allocating resources and also where information is easily obtained, though not for free, to mitigate risks arising from uncertainty. But in a segmented economy, uncertainty is a major obstacle in temporal and intertemporal allocation of economic resources:

Uncertainty confines economic units to self-finance in capital accumulation. Correspondingly, labor and land are also imperfectly mobilized because of the absence of complementary investments, and they remain attached to family enterprises in suboptimal uses. [23, p. 508]

The degree of uncertainty depends upon the degree of availability of reliable information which in turn depends upon the degree of organizational development, that is, transportation and communication systems, education, administrative machinery, and above all pricing system. Real resource costs of reducing risks arising from uncertainty are formidable in underdeveloped countries. Vari-

ations in prices, interest rates, and wages in the segmented economy will be largely attributed to variations of real resource costs in obtaining information. These costs are not properly incorporated into the conventional growth theories which assume a riskless economy.

(5) Finally, McKinnon's definition of economic development is used: "the reduction of the great dispersion in social rates of return to existing and new investments under domestic entrepreneurial control" [24, p. 9]. This is equivalent to assuming that people in peasant society are highly responsive to economic incentives once socioeconomic distortions are corrected by spontaneous forces of market mechanism and appropriate government policies.

IV

Given these assumptions, a simple model for the development process can be made. To begin, it should be noted again that concepts of "markets" and "distortions" used here are different from those of conventional models. The term "markets" is used in a broader and more dynamic sense than conventionally, and it includes not only narrow factor and product markets but also organizational and institutional settings in the development process. The term "distortions" is defined so that the development process can be incorporated into our model without losing its operational meaning. For this purpose, Myint's concept of distortions is followed.

In the following model, a denotes spontaneous distortions caused by the underdevelopment in economic organizations such as communication, transportation, education and administrative machinery, and pricing system. Then, b denotes artificial distortions caused by government actions such as subsidies, taxes, various regulations, quotas, and so on, and labor unions and monopoly powers. For example, the actual interest rate (R) can be expressed as:

$$R = r + ra + rb,$$

consisting of competitive market rate (r), the spontaneous distortions (ra), and artificial distortions (rb). The value of ra will be positive and the greater, the greater segmentation of capital markets, while the value of rb will be positive in the unorganized sector and negative in the organized sector.

The relationship between spontaneous and artificial distortions should be clarified. Theoretically, spontaneous distortions can be defined as market imperfections from deficiencies in marketing and administrative systems abstracting from the direct influence of government and monopoly powers, while artificial distortions are defined as market imperfections directly caused by government and other market controlling forces. Spontaneous distortions can be identified in terms of differences in marginal productivities of capital and labor among different sectors and regions, while artificial distortions will be identified in terms of the various discriminatory measures by government and degree of monopoly power. Practically, however, these two types of distortions are closely interrelated with each other and are often very difficult to distinguish. Spontaneous

distortions in the rural credit market in the form of high interest rates, for instance, often tend to induce direct government interventions by establishing government-sponsored financial institutions and usurious laws which in turn aggregate the market system thereby intensifying spontaneous distortions. Though quantitative measurement of the two distortions is extremely difficult, we can usually identify their sources and effect upon the market system. Particularly, it will not be difficult to know whether or not the government low interest policy of promoting industrialization in the underdeveloped country is damaging the proper development of the capital market.

We shall now consider a simple model of factor markets with two sectors: unorganized (superscript 1) and organized (superscript 2) with each sector containing agriculture (subscript 1) and manufacturing (subscript 2) units and two factors of production, labor (L) and capital (K) with wage rate (W) and interest rate (R).

Unorganized sector:

$$(1) \quad R_1^1 = r + r_1^1 a + r_1^1 b.$$
$$(2) \quad R_2^1 = r + r_2^1 a + r_2^1 b.$$
$$(3) \quad W_1^1 = w + w_1^1 a + w_1^1 b.$$
$$(4) \quad W_2^1 = w + w_2^1 a + w_2^1 b.$$

Organized sector:

$$(1) \quad R_1^2 = r + r_1^2 a + r_1^2 b.$$
$$(2) \quad R_2^2 = r + r_2^2 a + r_2^2 b.$$
$$(3) \quad W_1^2 = w + w_1^2 a + w_1^2 b.$$
$$(4) \quad W_2^2 = w + w_2^2 a + w_2^2 b.$$

In the model, the superscript and subscript denote sector and industry, respectively. The meaning of the equation is self-explanatory and nothing new. But they provide clearer insights into the market distortion problem than the conventional formulation. Perfectly competitive market conditions exist when $R_1^1 = R_2^1 = R_1^2 = R_2^2$ for the capital market and $W_1^1 = W_2^1 = W_1^2 = W_2^2$ for the labor market. Under our framework and also from some empirical evidence, the comparative degree of distortions for each sector and industry may be expressed in absolute terms in the capital market as follows:

Ra (spontaneous): $r_1^1 a > r_2^1 a > r_1^2 a > r_2^2 a$.
Rb (artificial): $r_1^1 b < r_2^1 b < r_1^2 b < r_2^2 b$.

Since spontaneous distortions depend upon the degree of development of the market, the rate of interest in the unorganized sector (R^1) will be higher than the organized sector (R^2). Therefore, the highest rate will be found in the unorganized agricultural sector $(r_1^1 a)$, which shows the highest risk. On the other hand, the lowest rate will be found in the organized manufacturing sector $(r_2^2 a)$ where the capital market is highly developed. In the development process, manufacturing is assumed to come into existence in a later stage of market development than agriculture in a closed economy.

The artificial distortions may be greater in the organized and manufacturing sector than in the unorganized and agricultural sector because of the notorious low interest rate policy to promote modern manufacturing [26, Chap. 13]. The values of spontaneous distortions (Ra) may be positive for all sectors of the economy due to an imperfectly developed market system. We assume that spontaneous distortions will become smaller and smaller as the capital market develops. On the other hand, the values of artificial distortions may be positive in the unorganized sectors and negative in organized sectors because the latter are usually subsidized at the expense of the former.

The relative degree of distortion in the labor market will be as follows:

Wa (spontaneous): $w_1^1 a > w_2^1 a > w_1^2 a > w_2^2 a$.

Wb (artificial): $w_1^1 b < w_2^1 b < w_1^2 b < w_2^2 b$.

The order of the inequality signs may be the same as the capital market as expected. The values of spontaneous distortions (Wa) may be all positive because of the imperfect labor market in all sectors and industries. Artificial distortions (Wb) may also be greater in the organized sector (w_1^2, w_2^2) than in the unorganized sector (w_1^1, w_2^1) due to strong labor unions and minimum wage legislation in that sector, particularly in manufacturing. The values of distortions may be positive in the organized sector; that is to say, wage rates are higher than marginal productivities of labor, but may be negative in the unorganized sector due to the artificially low purchasing prices determined by government marketing boards for the peasant products in order to subsidize organized manufacturing.

In underdeveloped countries, artificial distortions may be more pronounced and serious in the capital than the labor market. It is easy to see that the organized sector, particularly manufacturing, tends to adopt an excessively capital-intensive production process due to artificially lower interest rates and higher wages than the unorganized sector where labor is underutilized because of the lack of capital. Naturally, excess capacity in the organized sector will be greater, the greater the artificial distortions, because investment projects may be carried out according to false price signals and interest rate movements. Furthermore, once excess capacity is created, an adjustment to the equilibrium point through the market mechanism will become extremely difficult for two important reasons. First, artificial distortions tend to generate other distortions in a cumulative fashion. For instance, the interest subsidy will make easier to establish domestic industry and this usually leads to protective measures like tax subsidies and import restrictions. Second, artificial distortions will greatly disturb market mechanism function and thus aggravate spontaneous distortions.

Market expansion in the unorganized sector is also seriously disturbed by both spontaneous and artificial distortions particularly in the capital market. Because of high interest rates and meager savings which are the results of spontaneous distortions and artificial inflationary policies by the government, small farmers cannot finance investment in various inputs, such as fertilizer, insecticides, pump sets for irrigation, and other simple tools required for modern farming. Thus,

Fig. 2.
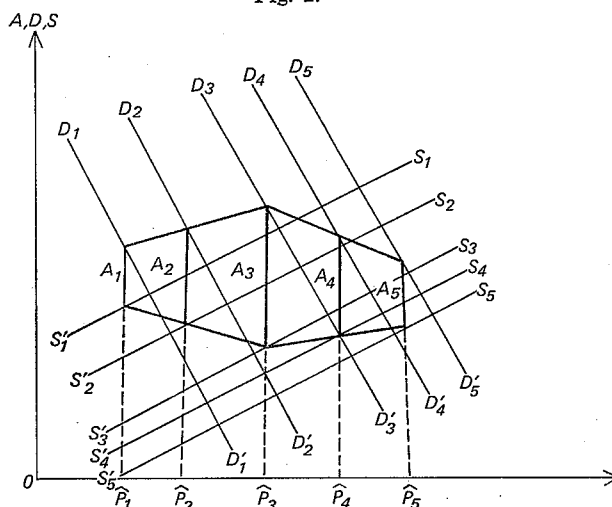
once constraints on the capital market are reduced by a simple abolition of government distortional policies, there is ample room in the unorganized sector to increase productivity and expand the "absorptive capacity" as suggested in Figure 2.

In Figure 2, the vertical axis denotes quantity demanded (D) and supplied (S), and "absorptive capacity" (A) which is defined as a function of the excess demand in real terms, in turn, a function of actual price ($\hat{P}$) depicted on the horizontal axis. Mathematically the absorptive capacity can be expressed as $A = f[D(\hat{P}) - S(\hat{P})]$, where demand and supply are related to actual price containing spontaneous ($\hat{P}a$) and artificial ($\hat{P}b$) distortion elements in addition to the competitive price (P).
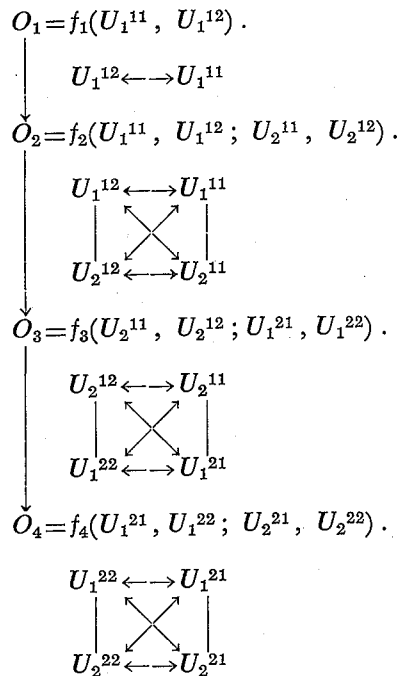
As a small but sufficiently large sum of capital as small farmers see it becomes available, farmers now have the chance to make full use of available production techniques. This will initiate rounds of gradual agricultural product expansion through complementary effects on markets and the cumulative process of the small technological developments. This will shift the demand curve upward and the supply curve downward, creating greater absorptive capacity (A) as the market expands and spontaneous distortions diminish. The rate of expansion, however, may diminish after it reaches a certain stage ($\hat{P}_3$ in the diagram) due to the diminishing returns imposed by the availability of land and slow rate of technological change.

It should be noted, however, that the "actual market price" ($\hat{P} = P + \hat{P}a + \hat{P}b$) in the unorganized agricultural sector may be lower than the "true market price" ($P_t = P + \hat{P}a$) reflecting the real resource cost of production due to the fact that agricultural product prices are usually depressed by deliberate government policies, i.e., marketing board operations and subsidies for the modern manufacturing sector; that is to say, the value of artificial distortions ($\hat{P}b$) is negative.

Thus, "actual absorptive capacity" at $\hat{P}$ appears to be greater than "true absorptive capacity" at P_t. Consequently, investment decisions (government and private) based upon actual absorptive capacity may involve greater capital-intensive techniques than decisions based upon true absorptive capacity as seen from experiences with the Green Revolution to introduce high capital-intensive technology to Asian agriculture.[8]

Thus, in order to have cumulative expansion of the market system or organizational framework of the underdeveloped countries, government policy should be first directed at reducing the sources of artificial distortions which in turn indirectly help reduce spontaneous distortions. Second, it is important to directly attack the sources of spontaneous distortions through expansion of the private banking system and communication and transportation systems in the unorganized sector.

A hypothetical model of the entire economic development process is schematically presented in the following diagram:

$$O_1 = f_1(U_1{}^{11}, \ U_1{}^{12}) \ .$$

$$U_1{}^{12} \longleftrightarrow U_1{}^{11}$$

$$\dot{O}_2 = f_2(U_1{}^{11}, \ U_1{}^{12}; \ U_2{}^{11}, \ U_2{}^{12}) \ .$$

$$U_1{}^{12} \longleftrightarrow U_1{}^{11}$$
$$U_2{}^{12} \longleftrightarrow U_2{}^{11}$$

$$\dot{O}_3 = f_3(U_2{}^{11}, \ U_2{}^{12}; \ U_1{}^{21}, U_1{}^{22}) \ .$$

$$U_2{}^{12} \longleftrightarrow U_2{}^{11}$$
$$U_1{}^{22} \longleftrightarrow U_1{}^{21}$$

$$\dot{O}_4 = f_4(U_1{}^{21}, U_1{}^{22}; \ U_2{}^{21}, \ U_2{}^{22}) \ .$$

$$U_1{}^{22} \longleftrightarrow U_1{}^{21}$$
$$U_2{}^{22} \longleftrightarrow U_2{}^{21}$$

where $U_j{}^{ik}$ denotes the production system of i sector (1 = rural, 2 = modern), j industry (1 = agriculture, 2 = manufacturing), and k region (1 = initiative region, 2 = rest of the region). Assuming a two-sector model, we begin with an economic system consisting of a rural agricultural sector in two different regions $(U_1{}^{1k})$ which is shown by the O_1 function. Economic activity will spread from the initiative region $(k = 1)$ to the rest of the region $(k = 2)$ as barter trade in agri-

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[8] Cf. Myint [27]. See also the more detailed sectoral report by H. Walters and J. Willett [41].

cultural products begins. Market expansion within and between the two regions will induce money as a medium of exchange and will facilitate the division of labor between rural agriculture (U_1^{1k}) and rural manufacturing (U_2^{1k}) which is shown by the O_2 function. At this stage, the division of labor is made on a very small-scale basis by employing available technology through self-finance. This complementary division of labor on a small-scale is complete when economic units are fully connected through spontaneous forces of the market mechanism.

Further expansion of the market will necessitate further utilization of available technology which will steadily increase agricultural productivity, thereby transforming peasant agriculture into a modern agricultural economy (U_1^{2k}) as shown in function O_3. At the same time, the increase in agricultural productivity will release resources from the agricultural to the manufacturing sector where productivity is also steadily increasing through continuous technological advancement transforming cottage industry into modern manufacturing industry (U_2^{2k}), as envisaged by function O_4.

These are development processes experienced by many advanced economies. With present underdeveloped countries, the smooth structural transformation from an agrarian peasant to a modern market economy has been greatly distorted by colonial economic policies of the Western industrial countries (cf. [32, Part 2, pp. 127–673]) as well as by the excessive industrialization policies of the newly independent countries which is supported by economic nationalism [26, p. 304]. There is a general phenomenon in many underdeveloped countries that the large primitive peasant agriculture coexists side by side with highly modernized factories with no significant organizational linkages between them. The economic units are severely segmented and the existence of intermediate stages $(U_2^{1k}$ and $U_1^{2k})$, which played an important role in linking between the peasant economy (U_1^{1k}) and the modern manufacturing economy (U_2^{2k}) in its development process, is virtually missing as illustrated:

$$U_1^{12} \cdots\cdots\cdots\cdots\cdots\cdots U_1^{11}$$

$$U_2^{22} \cdots\cdots\cdots\cdots\cdots\cdots U_2^{21}$$
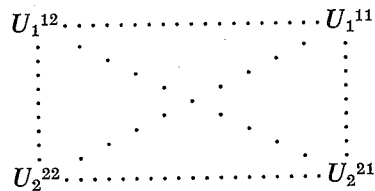
The economic policy here is to create $U_1^{1k} \to U_2^{1k} \to U_1^{2k}$ processes which may be considered "backward-looking" in the eyes of modern-planning-minded economists in underdeveloped countries. This "backward-looking" policy, however, seems to provide the most effective solution in the long run to correct present economic segmentation and achieve rapid economic development. Past experience by underdeveloped countries suggests that the shortest way for economic development will be the longer course.

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