DUALISTIC DEVELOPMENT: A NEW APPROACH

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THE OBJECTIVE of this essay is to present a new interpretation of dualistic structure and to derive implications for development. In particular, it will present a new form of sectoring to permit new insights into the problem of persisting dualism and that problem of the widening gap between dual sectors. Methodologically, it will formally introduce the social and cultural characteristics of backwardness into the analysis of resource allocation and development.

There is consensus in the literature on economic development that the dualistic structure, i.e., the coexistence of two sectors characterized by highly differentiated modes of social and economic organization and activity in the same country, describes accurately the prevalent structure in most LDCs. Differences, however, emerge in the analytical interpretation of this structure and these differences form a basis for differences in theories of economic development.

Most existing theory on dualistic development utilizes a mode of sectoring that results in the transfer of surplus labor and/or agricultural surplus from the backward sector (B-sector) to the advanced sector as a central process in dualistic transformation.[1] That is, the sectors are analytically defined such that, under rational maximizing behavior, the growth of the A-sector and the transformation of the B-sector are functionally dependent on the extraction and reallocation of surplus labor/agricultural surplus from the B-sector.

By adopting an alternative mode of sectoring, under the same rational maximizing behavior, it will be shown that: (1) the transformation of the B-sector need not depend on the rate and level of labor transfer to the A-sector; (2) the growth of the A-sector need not depend on the transfer of agricultural surplus (and labor) from the B-sector; (3) the rate of labor transfer into industrial activity and the transformation of the B-sector are related by definition rather than by function; and (4) policies aiming at transformation by encouraging the

[1] In the extensive literature within the framework of the labor surplus/agricultural surplus transfer approach to dualistic development, the works of Lewis [14, pp. 139–91], Fei and Ranis [5], and Jorgenson [9] may be considered the pacesetters. These works may be credited with establishing the pattern of thinking of this approach. (Intellectually, this approach seems to have some affinity with what is described in the literature as the Soviet model of development. See [2] for an early presentation of this development model.) In addition to these relatively complete models there exists a substantial body of literature dealing with specific issues raised within the framework of this approach, e.g., the concept of surplus labor.

rapid growth of the A-sector, e.g., by biasing the allocation of resources toward it, may actually lead to the accentuation and perpetuation of dualism.

I

Dualistic structure means the coexistence of two different socioeconomic-technological environments within the same country. The activities and the institutions of each reflect particular and differing modes of socioeconomic behavior, values, and relationships, and they also express differing levels of technological sophistication and specialization. The two environments simply reflect two stages of development. This dual-environment structure is generally accepted as a description of the reality in most underdeveloped countries.

Environmental dualism developed through the opening-up process of the backward regions by the industrially advanced countries through trade and/or colonization.[2] The advanced sector was created around activities of production for and trade with the advanced countries. These activities were usually controlled, directly or indirectly, by citizens of the advanced countries utilizing technology and organization derived from that in the advanced countries. A portion of the indigenous population became associated with these activities, and, where this association was more than marginal or transient, it produced a transformation (social and technological) in this group. Accordingly, an advanced socioeconomic environment employing the technology, the social and economic organization and the institutions of the industrially advanced countries came to exist and grow alongside a backward and traditional environment.

The above historical-descriptive account of the dualistic structure runs along generally familiar lines. It is in the analytical interpretation of this structure that we part company with existing theories on dualistic development. It will be argued below that dualism in the socioeconomic-technological environment means dualism in decision-making. That is, the decision-makers of the two sectors, producers or consumers, will tend to make different production and consumption choices in the face of similar economic conditions (factor prices and incomes).

Each technological-economic environment bestows on its inhabitants a set of social, cultural, technological, and economic attitudes and aptitudes. These may be considered to be sets nonconventional endowments which are possessed by, and in fact define, the sectoral individual. These endowment sets consist of:

(1) A level of technological sophistication involving familiarity and ability to work with modern inputs and methods: the B-sector individual possesses, definitionally, a low level of technological sophistication.

(2) Managerial skills and aptitudes: the A-entrepreneur is familiar with, and capable of working in, a complex modern economic system with a relatively high level of specialization.

(3) A set of socioeconomic attitudes involving attitudes toward risk, profit maximization and types of labor relationships: the B-sector values are those of pre-industrial societies.

[2] Some accounts of the historical origins of dualism are given in [1], [13], and [6].

(4) A set of cultural values: the A-sector has been influenced in its cultural patterns by exposure to advanced (Western) societies.

Given the inertia that characterizes social behavior and the time-effort-resource consuming nature of the learning process, only marginal changes can be effected in the individual's endowments at any one moment. This means that he is capable of engaging in activities involving new technology and/or new modes of socioeconomic behavior and organization only if the required change in his endowments is not radical. The more radical the change, the higher the required cost in education, coercion, or indoctrination. If these activities are engaged in by a large number of individuals and/or possess social and technological linkages within this environment, they will produce changes in the environment and its corresponding set of endowments; i.e., the change becomes sector-wide rather than remaining an isolated transformation of relatively few individuals. (Needless to say, the more that sectoral individuals are induced to introduce technological or organizational change, the easier it is for a single individual to introduce them.)

Because of the nature of the historical process creating dualsitic structure, one may suggest that a "historical discontinuity" or a long time-distance separates the two sectoral environments. One implication of this, given the difficulty of effecting more than marginal change in the sectoral endowments, is that it will not be possible for B-decision-maker to acquire the endowments of the A-sector at any one moment or in a short time. In particular, the movement from the B-sector set of endowments to the A-sector set would not be equivalent (at least in the time required) to the process of catching up by a "slow" entrepreneur in adopting new forms of technology and organization. Actually, the two processes are two entirely different social animals.

Now, to investigate the implications of dual environment-endowment for production and consumption choices. If production technology is conceived of as a set of all feasible (conventional) input-output combinations, sectoral endowments possessed by the respective sectoral producers will cause them to "see" different regions of this set, or alternatively to make them operate on different states of technology. A state of technology reflects a level of scientific knowledge embodied in inputs and methods of production and also reflects a level of specialization of division of labor. Associated with a state of technology is a set of social and economic relations, forms of organization, and values, e.g., towards work. The content of the endowments of the B-decision-maker would allow him to operate only with a relatively primitive state of technology, whereas the A-producer's endowments would allow him to operate with a modern state of technology. Peasant farming versus modern mechanized farming, craft versus factory production are simple examples of the two states of technology.

Since the two entrepreneurs are operating on different levels of technology, they will have different production functions for the same commodity, e.g., if crafts production reflects B-technology and factory production represents A-technology, then the two producers will experience different patterns of economies

of scale in expanding their outputs and will confront differing possibilities of factor substitution.[3] Moreover, they will tend to utilize different factor inten- sities in face of similar factor prices. Generally the A-production function will tend to be more capital-intensive (reflecting the historical fact that most modern technology developed in labor-scarce economies).

Since the sectoral endowments involve social and cultural attitudes as well as levels of technological sophistication, then they must imply that the two sectors' individuals will tend to have differing preference schemes.[4] Therefore, the two individuals will tend to exhibit different consumption patterns even at the same level of income, i.e., they will have different consumption functions.[5] On the basis of impressionistic evidence it may be suggested that the A-individual's consumption pattern is relatively biased towards modern commodities (X_m) whereas the B-individual's pattern will be biased towards traditional good (X_t) and food (X_f).

Given the above interpretation of dualistic structure, a new explanation of technological dualism can be given. The existence of two production functions for the same commodity means that distortions in the factor prices are no longer necessary to explain the utilization of two K/L's in the production of the same commodity. What needs to be explained, now, is how do the two tech- niques manage to survive in a competitive market given a set of factor prices. One explanation, in line with the argument presented in the famous Eckaus article [3], is that the two techniques may be equally "efficient" particularly at different scales of production. Another explanation may be derived from the underlying rationale of positing two production functions: the existence of two production functions reflects the two environments-endowments condition of a dualistic economy. The two sectors are embodied physically in a set of sector- specific factors, e.g., entrepreneurs, which constrain the sectoral capacity to produce. (In addition to K and L, which may be assumed to be at least partially mobile between the two modes of production, we have a set of sector specific factors.) Thus, though the A-producer may be more efficient in producing a given commodity, the constraint on the A-sector's capacity may allow the less efficient B-producer to survive. Assuming that the B-producer cannot produce X_m, whether or not the A-producer will engage in X_t production (X_{ta}) and food (X_{fa}), will depend on whether he finds it more profitable to deploy his resources (sector specific) in these activities rather than in X_m and on whether he is efficient enough to survive the competition from the B-producer. Both of these considera- tions are a function of a number of factors, such as, the supply of A-sector

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[3] Views of technological dualism as involving a discontinuity in the production function or two production functions for the same commodity have been expressed, at least implic- itly, by Eckaus [3, pp. 539–65], Hirschman [7, pp. 550–70], Leibenstein [12, pp. 345–60], and Nelson [18, pp. 119–48].

[4] With a few exceptions, including the works of Spaventa [21, pp. 386–434] and Kelley, Williamson, and Cheetham [11], dualism in demand has been largely neglected in the literature.

[5] Some support of this statement is given in [10, pp. 110–26].

factors; the relative demands for X_m, X_t, and X_f, the prices of capital and labor, the production (and resulting cost) functions of the two sectors, and the ability of the B-producer to reach the A-market. Thus, at a given moment, the A-producer would have a list of projects or activities of descending order of profitability. At the lower end are those activities in which the B-producer is an effective competitor. The frontier line will tend to move downwards into X_t and X_f activities, the lower the demand for X_m, the cheaper the price of capital, and the greater the stock A-sector factors and, of course, the less the ability of the B-producer to reach the A-market due to spatial or socioeconomic barriers.

II

We turn now to analyze, on the basis of the above mode of sectoring, what has been considered to be the main problematic feature of dualism, namely, its persistence. The general assumption is that the growth and expansion of the A-sector should have produced a transformation in the B-sector. This proposition, put in the context of the mode of sectoring presented in this essay, means that the growth of the A-sector should have induced or forced the B-sector individual to engage in transformative activities, i.e., activities involving new technology and organization.

The growth of the A-sector might have brought about this transformation of the B-sector through either or both of two ways. Firstly, if it is assumed that the A-sector has a limited supply of its vintage labor, then its expansion would generate an increased demand for B-sector labor. Since working in A-sector production implies engaging in new technology and organization for B-sector laborer, then this group of B-sector labor, transferred to the A-sector, will tend to be transformed over time. The growth of the A-sector will lead to the transformation of the B-sector by depopulization, if its rate of labor absorption exceeds the rate of population growth. However, since the rate of capital accumulation in the A-sector will not, realistically, be very high and, given the relative capital intensity of its mode of production, the process of labor absorption will most likely be insufficient to generate depopulization of the B-sector, except perhaps in the very long run.[6]

Furthermore, the rate of labor absorption into the A-sector will tend to be low despite a high rate of capital accumulation in the A-sector for at least two additional reasons: firstly, recognizing that B-labor and A-labor are of different social and technological vintages, then the demand for B-labor will tend to be lower the greater the increase in the supply of A-sector labor; and secondly, the A-entrepreneur will have to take into account in his cost calculations the cost of transforming B-labor into a useful input for his mode of production. This transformation cost would tend to put him on a higher capital intensity

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[6] Johnston shows in [8, pp. 251–312] that a country starting with a labor population of 10 million, 80 per cent of which is in farming (say the B-sector), a 2 per cent annual increase in its total labor force and a 4.5 per cent annual increase in the non-farm (A-sector) labor force will require about forty years before the B-sector is reduced to merely 50 per cent of the labor force.

than would seem to be warranted by the nominal factor prices.

The second avenue through which the growth of the A-sector might have been expected to produce a transformation in the B-sector is the trade process between the two sectors. The intersectoral trade process will tend to induce a transformation in the B-sector in two ways (exposure effects aside). Firstly, on the demand side, the trade with the A-sector will tend to induce the B-producer to introduce technological and organizational changes in his production and distribution methods by the very nature of the quality and quantity of the A-sector demand.[7] Secondly, on the supply side, the modern quality of the goods (inputs or consumer commodities), which the A-sector exchanges with the B-sector, is bound to effect the technological, organizational, and social attitudes and aptitudes of the B-producer, i.e., his endowments. If the trade-induced changes are widespread the sectoral endowments and environment will be altered.[8] The larger the proportion of the B-sector's output devoted to trade with the A-sector, implying greater specialization and a larger number of B-individuals engaged in production for the A-market, the greater will be the transformative effects of trading with the A-sector. Moreover, the higher the A-demand for B-exports the greater will be the flow of modern goods into the B-sector. Furthermore, this higher demand will lead to an increase in the modern input component of these imports to the B-sector. This reflects an increasing capital formation in the B-sector, by B- and/or A-entrepreneurs, which will produce higher output and allow increased exports to the A-sector. As the A-sector grows, the demand for B-sector goods "exported" to the A-sector expands. Initially, this demand increase can be met by increased utilization of existing traditional inputs: land, labor, and vintage capital. The expansion in the A-market, however, may at some point outstrip the possible increases in supply, putting upward pressure on the prices of these commodities. This will lead to a shift in resources to the production of B-type commodities. Assuming that land is already totally utilized in the production of these commodities and that additions of labor will yield marginal increases in output, then the resource shift in this case would mean a transfer of capital most likely in the form of modern inputs to the production of these commodities. This capital transfer would allow the B-producer to improve his productivity, expand production of traditional and new commodities,

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[7] If the B-producer is separated geographically or institutionally (by middlemen) from the A-market, the demand-induced organizational and technological changes will tend to be limited since changes induced by the act of selling (marketing) itself and by new activities will most likely not occur.

[8] Implicit in the above discussion is the presumption that trade with the B-sector does not alter the technological, organizational, or social attitudes and aptitudes of the A-producer. This should not imply that the A-mode of production is always more efficient than the B-sector's since such efficiency depends on the factor availabilities. Moreover, though this asymmetry implies that the A-producer has the technological and organizational aptitude to adopt a B-mode of production when factor availabilities render it more efficient than the A-mode of production, the A-producer will still choose the A-mode of production (if he enters the production of this commodity at all) due to his social and cultural attitudes or preferences. His survival could be insured by biased accessibility to capital.

and improve his reach to the A-market. Thus, the growth of the A-sector would contribute to the transformation of the B-sector by drawing a larger number of its producers into specialized production for the A-market, and by generating an increased flow of modern goods, particularly inputs (technology-cum-capital), into the B-sector.

The above process would occur only if the growth of the A-sector did not induce A-producers to move into the production of those commodities which the B-sector sold to the A-market. The growth of the A-sector will generate, however, at least three factors that would encourage the emergence of A-sector production of X_t and X_f, i.e., X_{ta} and X_{fa}. Firstly, the growth of the A-sector means a growth in the stock of A-sector vintage factors, e.g., A-entrepreneurs, technicians. This would allow the extension of the A-mode of production into domains hitherto left to the B-sector. Secondly, the increase in the relative price of the B-commodities, in response to the increase in the A-demand, would induce A-entrepreneurs to move from X_m production to the production of X_t and X_f, assuming that the A-producers are competitive in the production of such commodities and they did not engage in it previously due to the higher return to their A-factors in X_m production. Thirdly, if the growth of the A-sector is associated with a relative growth in capital stock and a consequent decline in its price, then the A-method of production would become efficient in the activities formerly left to the B-producer.

If the growth of the A-sector brought with it any or all of the above factors, then instead of bringing about a transformation of the B-sector it would lead to its stagnation.[9]

The above tendencies towards nontransformative growth are helped by two further factors prevalent in the underdeveloped dualistic economy. The first relates to the conditions surrounding the supply of capital. In most LDCs, banking and governmental policies, as well as a tradition of self-financing, tend to make capital available to a relatively few A-sector entrepreneurs.[10] Under such conditions A-modes of production, inefficient under more competitive conditions, become viable.[11] The second relates to the supply of capital or producers' goods. To the extent that the producers' goods industry in most LDCs is still in an infant stage, it is incapable of supplying the B-entrepreneur with the intermediate technology that he could absorb or utilize.[12]

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[9] The entry of the A-producer into activities formerly left to the B-producer will not only arrest the transformation of the B-sector, but will also cause its further impoverishment since the new industries may displace B-producers from the A-market, pushing them into unemployment and self-sufficiency.

[10] Evidence on biased accessibility to capital is given in [15], [16, pp. 128–56], [17, Appendix 8], and [4] among others.

[11] The A-technique will not become viable only because the factor it uses intensively is made cheaper but also because biased accessibility to capital may mean that some producers are allowed the resources to engage in large-scale production where the A-mode of production attains superior efficiency.

[12] See [19, pp. 217–27] for a discussion of some of the factors that tend to limit the growth of a viable producers' goods industry in developing economies.

The above argument suggests that the growth of the A-sector need not, under competitive market conditions, lead to a transformation of the B-sector, i.e., the persistence of dualism should be seen as a natural phenomenon. Thus, transformation requires direct political, social, and economic action by the government. However, government policies aimed at transformation by encouraging the growth of the A-sector through increasing the supply of its sector specific factors or by biasing the allocation of capital towards its entrepreneurs will tend to accentuate and perpetuate dualism. Such policies would encourage the emergence of A-production of X_t and X_f and, hence, stem any transformative effects the growth of the A-sector may have.

This analysis thus far has established that the existence and persistence of dualism are not the result of distorted factor prices,[13] which would be the cause under a mode of sectoring positing a unified decision-making environment. Moreover, it has suggested that the transformation of the B-sector should not be made contingent on the rate of labor absorption into the A-sector nor the growth of the A-sector made dependent on the transfer of labor and agricultural surplus from the B-sector. This result is consistent with the observed phenomenon of a rapidly growing A-sector coexisting with a stagnating backward sector.

We derive now some implications of the emergence of X_{ta} and X_{fa} to satisfy the A-market, at the expense of X_{tb} and X_{fb}, for employment in nonagricultural activities and for sectoral incomes. The choice of X_{ta} and X_{fa} (alternative-A) versus X_{tb} and X_{fb} (alternative-B) implies lower employment of labor in non-agricultural activities for two reasons. For a given level of output of X_t, X_{ta}, being relatively capital-intensive, will employ less labor than X_{tb}. Moreover, alternative-A will lead to a lower industrial employment through its implications for the composition of aggregate demand. It was suggested earlier that the A-sector demand is biased towards X_m as compared with the B-sector demand which is biased relatively toward X_t and X_f. Alternative-A means an expansion in the size of the A-sector if it needs to import labor from the B-sector to man its X_{ta} and X_{fa} production. Furthermore, alternative-A implies a lower per capita income for the B-sector for two reasons. First, the B-sector will lose the potential increase in output that would have been brought about through technological and organizational change and through the greater utilization of existing resources.[14] Second, the B-sector will experience a loss in actual output (without a concomitant loss of labor) when the expansion of the A-sector shifts land, capital, and entrepreneurs to A-production but more generally when the growth of A-production destroys B-production. The consequence of these two effects (the increase in A-sector population and lower B-income) is a greater weight attached to A-sector demand in determining aggregate demand than under alternative-B.

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[13] Though, of course, such a distortion would be a contributing factor, as was indicated above.

[14] Labor is assumed to be surplus in the B-sector in the sense that withdrawal of some of this labor does not lead to a reduction in output, provided an alteration in working habits and arrangements takes place, e.g., the remaining members of the family work harder and longer. This view of surplus labor was developed in [20, pp. 425–50].

Given the demand patterns mentioned earlier, alternative-A would imply an output composition more biased towards X_m versus X_t than would be the case under alternative-B, and therefore a lower industrial employment would occur.

The preceding argument suggests that the same conditions responsible for limiting the transformation of the B-sector are also responsible for limiting labor absorption into nonagricultural activities. This implies that the relationship between the rate of labor absorption into nonagricultural activities and the transformation of the B-sector tends to be definitional rather than functional as predominantly presumed in the literature.

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