

# Review Article

## Development of the Labour Surplus Economy

by

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The concept of surplus labour has featured prominently in the recent literature on economic development of underdeveloped, overpopulated economies. W. A. Lewis in his two celebrated articles [1] attempted a precise formulation of the concept of surplus labour and sought to analyse its implications for the strategy of economic development in the context of a two-sector model of economic growth. Messrs. J. C. H. Fei and Gustav Ranis have undertaken in this book<sup>1</sup> an elaborate extension of the two-sector growth model of W. A. Lewis. The major directions in which the authors have sought to extend or elaborate the model and the main results of their efforts in this respect are contained in their earlier article "Unlimited Supply of Labour and the Concept of Balanced Growth", published in the *Pakistan Development Review*, Winter 1961, Vol. 1, No. 3. The various sections of the article have now been expanded and elaborated into chapters of the book<sup>2</sup>.

The book is divided into eight chapters. The first two chapters are intended to provide a bird's eye-view of the main arguments and conclusions. The third chapter analyses the production functions in the two sectors, whereas the fourth and sixth chapters elaborate the conditions of progress in agriculture, and its impact on industrial wages and profits and hence on capital formation. The fifth chapter discusses the mechanism and process through which the agricultural surplus is transmitted to the industrial sector for investment purposes. The seventh chapter differentiates between stages of economic growth in terms of a gradual disappearance of surplus labour and the eventual emergence of labour scarcity, and analyses their consequences for capital accumulation. The last chapter examines the implications of development of a labour surplus country in the context of an open economy.

The main directions in which the authors have sought an extension of Lewis's model appear to be a) a systematic discussion of the market mechanism which exchanges agricultural goods against industrial goods and determines the intersectoral terms of trade; b) an analysis of the effects of the changes in the terms of trade on industrial wages, profits, savings and capital accumulation; c)

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<sup>1</sup> J.C.H. Fei and G. Ranis, *Development of the Labour Surplus Economy*. (New Haven: The Economic Growth Centre, Yale University, 1964).

<sup>2</sup> It is curious that not even a passing reference is made to this article anywhere in the book.

an elaboration of the effects of capital accumulation and technological change, *i.e.*, the effects of a rise in productivity in agriculture and industry on wages, on the supply curve of labour, on profits and investment; and *d*) the introduction of the foreign trade sector. Furthermore, the authors examine a wide range of policy implications of the existence of surplus labour in respect of choice of techniques of production, intrasectoral allocation of resources within the industrial sector, *i.e.*, between heavy and light industries, and the concept of balanced growth.

The basic features of a two-sector labour surplus economy are all too familiar. There is a small capitalistic industrial sector coexisting with a large subsistence agricultural sector. The sectoral wages are expressed in terms of the products of the respective sectors. This provides a convenient method of handling the analysis of intrasectoral terms of trade as well as the flow of resources. Competitive conditions do not prevail in the agricultural labour market and the criterion of profit maximisation does not govern the employment of labour. The wage rate in agriculture is near the subsistence level of the agricultural workers and the prevailing wage rate is kept to this floor by social institutions and convention. This is also the ceiling because surplus labour serves to cushion any pressure for wage increases. The wage rate, though rigid and institutionally determined is, however, above the marginal productivity of labour, which is either zero or very low. In fact, the authors elaborate the distinction between two stages of labour surplus economy which, by the way, is a valuable extension of the concept of surplus labour to be found in Lewis's model. The two stages are distinguished as the stage of labour "redundancy" and the stage of "disguised unemployment". The first stage is characterised by zero marginal productivity of labour so that its withdrawal from agriculture does not reduce agricultural output. Labour is available at the going wage rate, which is higher than the rural wage rate by a given margin.

Once the growth of the industrial sector and the reallocation of labour proceeds beyond the stage of redundancy, the second stage sets in. At this stage labour has a positive marginal product but it is below the institutional wage rate. A reallocation of labour from agriculture to industry reduces agricultural output and reduces the surplus available to the landlord. The terms of trade move against industry. The industrial wage rate goes up to accommodate the higher cost of agricultural product in terms of industrial output. A rise in industrial wages has a dampening effect on industrial profits and accumulation. This can be delayed by a rise in agricultural productivity and a consequent increase in the agricultural surplus, which prevents a deterioration in the terms of trade of the industrial sector. This enables industrial expansion on the basis of con-

stant real wages until the condition of labour surplus disappears. The wage rate, at this point (called the "commercialisation point") is equal to marginal productivity in agriculture and the industrial sector competes with the agricultural sector on the basis of a continually rising supply curve of labour. There is, thus, an asymmetry in the behaviour of the landlord or agricultural employer. So long as the marginal productivity is below the conventional wage rate, the latter sets the floor as well as the ceiling of wage movement. As soon as marginal productivity equals the wage rate, the ceiling is removed and the wage rate is determined, given the total supply of labour, by relative demand in two respective sectors as reflected in their marginal productivities.

Economic development in this model appears essentially as a process of reallocation of labour from an overpopulated subsistence agriculture to a growing industrial sector. Agriculture thus provides labour and manpower for industry as well as the wages fund wherewith to employ them in industry. What are the forces which activate or cause the process of reallocation to set in? The wage differential between agriculture and industry is certainly a factor; the rise in agricultural productivity is another. The increase in the productivity of labour in agriculture helps in two ways; firstly, it enlarges the amount of surplus originating in agriculture, which is available for investment in industry, provided the market mechanism can mobilise and transfer the resources for industrial investment; secondly, the terms of trade move in favour of industrial goods, which increases the real income of industrial workers, widens the gap between agricultural and industrial wages, and encourages movement of labour from agriculture to industry. The rise in real income of industrial workers is temporary and tends to disappear as labour moves to industry and brings down the real wages (in terms of industrial goods) to the previous level. A deterioration in the terms of trade of agriculture reduces the profitability of investment in agriculture but increases it in industry. But an increasing allocation of labour to industry after the elimination of labour redundancy, will reduce total agricultural output and will tend to raise the agricultural terms of trade as well as the industrial real wage to the original level obtaining prior to the introduction of improvements in agricultural productivity. Thus, a new level of equilibrium of industrial employment and of agricultural surplus is reached at the old wage rate so long as surplus labour continues to exist.

The major part of investible funds for industry needs to originate in agriculture so long as agriculture constitutes the most important component of national income. When redundant labour as a source of disguised savings dries up, an improvement in agricultural productivity is necessary to provide at least a constant wages fund per head of the allocated labour force and to provide raw

materials for industry without an adverse effect on the terms of trade and without a rise in the industrial wages. This is even more true when unemployment disappears and the wage is determined by and is equal to marginal productivity. A withdrawal of labour from agriculture when the wage is equal to marginal productivity reduces output to the same extent as wages paid to labour. Under these circumstances, the "terms of trade" effect of the reallocation of labour for industrial expansion is even more serious and a stagnant agriculture brings the process of industrial expansion speedily to a halt. The increase of agricultural productivity appears, thus, to be a precondition of growth in an overpopulated labour surplus economy. To the extent that the industrial sector seeks to grow through a reinvestment of its own profits, the limit to such an expansion is quickly reached through a rise in real wages unless it is offset by a rise in agricultural productivity. The implications are the same as in the classical Ricardian model in which diminishing returns in agriculture eat into the surplus for investment unless counteracted by a rise in productivity. In the classical model, the supply of labour to industry is highly elastic because the expansion of demand for labour in industry is more than matched by the addition to labour supply caused by the increase in population. The classical theory postulated a constant subsistence wage by linking the growth of population to variations in the wage. In the present model, as in the classical model, diminishing returns, consequent on an increasing pressure of population on land, raise the floor (ceiling) of wage rate by raising the cost of subsistence. It is worth pointing out that a case for the reallocation of labour from agriculture to industry as an index of development, and the *sine quo non* of a rise in per capita income, can be made without reference to the existence of redundant labour or disguised unemployment. So long as the productivity of labour is higher in industry than in agriculture a reallocation of labour is expected to increase total output. Moreover, an increase in the proportion of the labour force engaged in industry has its basis in Engels' Law, *i.e.*, with an increase in per capita income an increasing proportion of aggregate expenditure is diverted away from food-stuffs to industrial products. A reallocation of labour to industry requires eventually an increase in agricultural productivity in order to compensate for the loss of output consequent on a withdrawal of labour as well as to provide a) an increasing supply of raw materials for the industrial expansion, b) food for a larger population as well as for an increase in the existing standard of consumption, and c) a market for the output of the industrial sector.

In the light of the above, the requirements for the balanced growth of a two-sector economy are fairly obvious. The changes in productivity in the two sectors should keep in step with each other so that there is neither a shortage of food nor an industrial overproduction. The investible surplus generated in the

two sectors should be allocated between them with due regard to the need for absorption in the industrial sector of redundant agricultural labour, which is augmented by improvements in agricultural productivity and increases in population. Furthermore, intersectoral allocation of resources should take into account, among other things, the relative efficiency of investment in the two sectors, interrelations of demand, and intersectoral input-output relationships, including supply of wage goods by agriculture. The level of "critical minimum effort" in this context<sup>3</sup> is defined as the rate of expansion of industrial investment and employment which is necessary to absorb more than the incremental labour force so that there is a reduction of redundant labour and/or of disguised unemployment in the agricultural sector. These are well known propositions. The authors believe that neither data nor techniques of programming nor the administrative capacity in the developing economies are adequate to permit the governments of these countries to undertake and apply, with any degree of success, the exercise in dynamic programming of intersectoral resource allocation implied in the propositions stated above. Neither do they seem to consider the lack of a successful exercise of this kind a serious limitation in the way of economic development. The more important bottleneck, in their view, is the slowness or the inadequacy in identifying and promoting vigorous entrepreneurial agents, who are able and willing to introduce innovations, productivity changes and to undertake saving and investment. Equally, if not more important, is the organisation of the institutional framework, which permits and encourages mass participation in entrepreneurial activities "along the vast landscape of the less developed economy". These two approaches do not seem to the present reviewer to be alternatives. They refer to different aspects of a) planning and b) implementation of development programmes and are both important. The emphasis on their relative importance is a matter of judgement.

It is pertinent to examine carefully some of the crucial assumptions of the Fei-Ranis model: redundant labour and disguised unemployment in the agricultural sector, the institutionally-fixed agricultural wage rate, and the constant wage differential between agriculture and industry, leading to a horizontal supply curve of labour in the industrial sector. It may be worthwhile to enquire whether, and to what extent, the model provides any guidance in respect of policy or institutional changes in agriculture for the mobilisation of the agricultural surplus for financing industrial expansion. Again, should the labour surplus underdeveloped economies lay a greater emphasis in the immediate future on long gestation projects and heavy capital goods industries, on the one hand,

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<sup>3</sup> The concept of "critical minimum effort" originates with Harvey Leibenstein [3]. There are important differences between the concept as developed by Fei and Ranis and Leibenstein's neo-Malthusian conception.

and labour intensive techniques, on the other? Does the introduction of a foreign trade sector, especially foreign aid, alter in any way the conclusions regarding the relative role of agriculture in promoting economic growth? To what extent have trade and trading profits been an important source of capital accumulation in the development of the industrial sector? The trading profits originating in both the domestic and foreign trade sectors, which are substantial in an underdeveloped economy, are an important source of investment funds for industry. Though formally trade is a part of the industrial sector in the Fei-Ranis model, a separate mention seems warranted, especially since trade and services constitute an important source of resources for investment. These are very wide ranging issues. The present review cannot hope to provide any detailed treatment of these issues excepting to raise some questions and to indicate the implications of these questions for the model and policy conclusions derived from it.

The model postulates only redundant labour force and disguised unemployment. The realism of the model would have been enhanced if an explicit account were taken of the fact that in both urban and rural areas there is open unemployment, more so in the industrial than in the agricultural sector. An increasing population in the industrial sector feeds the pool of unemployment and necessitates a transfer of food from rural to urban areas, irrespective of any reallocation of labour from agriculture to industry, with all its attendant consequences for intersectoral price movements. The empirical content of the concept of redundant labour with zero marginal product has been subjected to considerable doubt. The existence of redundant labour in a strict sense may imply that a withdrawal of labour from agriculture, without any change in the technique of production, form or quantity of capital equipment, or other inputs and in the organization of production, keeps agricultural output unchanged<sup>4</sup>.

The assumption of unchanged organization and form of equipment can, however, be relaxed. Surplus labour may also be defined as that which can be withdrawn from agricultural work without any diminution of output consequent on necessary changes in the organization and form of equipment but with no

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<sup>4</sup> Professor T. Schultz [2] refers to the case of heavy losses of rural manpower in India in 1918-19, without any loss in any of the other factors of production such as animals, *etc.*, which caused a considerable decline in agricultural output as well. While agricultural labour was reduced by 8 per cent, area sown under crops fell by 3.8 per cent. The provinces with the highest death rates also had the largest percentage declines in acreage sown. On the basis of a labour coefficient of about 0.4, which is held to be a plausible value for coefficient of labour in agricultural production in India, the predicted fall in agricultural production of 3.2 per cent compares favourably with the observed reduction of 3.8 per cent, which is well within the standard errors. Moreover, examples of labour shortage in agriculture consequent on the movement of labour from agriculture to industry have been frequently cited. One may, of course, in such cases, suggest that the extent of withdrawal or movement of labour was more than what is warranted by the quantum of surplus labour.

addition to capital equipment or other inputs. A consolidation of holdings or a pooling together of holdings for cooperative farming may reduce labour requirements. A change in the form of existing capital equipment to employ less labour, but to produce the same output, is in effect a change in the technique of cultivation. Whether it can be effected without extra investment is doubtful. Thus, it is clear that the emergence of surplus labour in this sense is conditional upon organizational and technical changes in agriculture. Moreover the farm workers often adjust themselves to a low level equilibrium of more leisurely work, *i.e.*, fewer hours for a lower intensity of work. This could be, however, due to a reduced capacity, which is caused by a low level of subsistence of the farmers, to face the fatigue of agricultural work. This could also be due to the fact that agriculture is not only a means of livelihood but also a way of life. The fact that in most underdeveloped areas the industrial sector does not find any difficulty in hiring unskilled labour often indicates a high rate of population growth which feeds the stream of open unemployment among the agricultural and industrial labour force, as well as a possibly larger participation of urban population in the labour force.

One would have expected from the authors of the volume under review a rationale of their case for disguised unemployment defined as a state in which wage rate is higher than the marginal product of labour. This is crucial to their concept of a perfectly elastic supply curve of labour. Except for a reference to social convention, the authors do not explain why the landlords who in their model (as exemplified by Japan) act as profit maximising entrepreneurs in investing agricultural surplus in industry should act contrary to the principles of maximisation of profit in the employment of labour in agriculture. There is an asymmetry in their pattern of behaviour. The concept of disguised unemployment is not a new one, explored exhaustively among others by Leibenstein [3, Chapter 6, pp. 58-76] and Wonnacott [4]. One has to distinguish between alternative systems of organisation of agricultural production, *i.e.*, between wage employment under landowners, on the one hand, and, on the other, self-employment, which is usually prevalent under peasant proprietorship or under a system of tenancy where the organisation of production is left to tenants, ownership being vested in the hands of absentee landlords earning either a fixed rent or a share of the crop. The system of land management and ownership affects the circumstances under which disguised unemployment may exist.

Under conditions of self-employment, be it peasant proprietorship or a system of cultivating tenants, it is the household which is the unit of employment. It is reasonable to assume that, given the scarcity of land and the lack of alternative opportunities of employment, the production efforts of the house-

hold are directed towards the maximisation of total output. Maximum total output with a given size of the working population in agriculture can be obtained either with a positive or zero marginal product. Under these circumstances the average earnings of the agricultural population would be equal to their average product, which would be higher than their marginal product. Even when the latter is zero, average product, and thus average earnings, of the agricultural households, may be positive. Under these conditions, as labour is withdrawn from agriculture, average earnings of the remaining members of the household go up. The supply curve of labour in the industrial sector would be upward sloping as the opportunity cost of additional labour employed in the industrial sector goes up with a rise in the average earnings of the farm labour. The horizontal supply curve of labour for the industrial sector no longer holds true even though the average product and hence average earnings of additional labour continue to be higher than their marginal product. Similar conditions would prevail under a system of land tenure in which the landlord receives rents proportional to the area of land and the tenant cultivators exploit land with the objective of maximising total output. Even if the rent received by the landlord is proportionate to the value of output, the maximisation of output would determine the deployment of family labour, when alternative opportunities of employment do not exist for the farm labour, *i.e.*, the number of members of the household (constituting the individual farm's supply of labour) remains constant. There are no marginal wage costs to offset against the gain in extra output minus proportional rent.

Under conditions of wage employment, the fact that average product as well as the wage rate is higher than the marginal product of the employed farm labour does not necessarily involve a horizontal supply curve of labour unless the additional condition of an institutionally determined wage rate (which may or may not be equal to the average product) is postulated. If it is a subsistence wage, as the authors imply, it is most likely to be less than average product unless the average product is low enough to coincide with a subsistence wage. If social pressure or convention not only requires that the entire available labour force be employed on land but also sets the standard wage rate, then the landlord has no degrees of freedom in deciding the amount of employment or the wage rate. The surplus left to the landlord can vary between zero and a positive magnitude, depending upon the size of the labour force and the product-labour relationship, *i.e.*, the productivity of labour. If the wage rate is equal to the average product of a given labour force then no surplus is left to the landlord.

Harvey Leibenstein explains the existence of a wage rate at a level higher than the marginal product on two assumptions: 1) a positive correlation between



wage rate and productivity; and 2) competition among unemployed workers to bring down wages so long as there is unemployment [3]. If productivity is a function of the wage rate, it is possible to increase profits by spending the same wage bill among a smaller labour force, thus raising the average wage rate as well as the efficiency of the workers. But this may not happen either because the unemployed workers would compete and bring down wages (and thus counteract the increase in efficiency and profits) or because the unemployed workers may continue to share in the consumption of the employed workers, thus preventing an improvement in the per capita consumption and efficiency of the workers. Even if the landlords desist from hiring workers at lower wages for fear of adverse effects on efficiency, the possibility of unemployed workers sharing in the wage goods available to the employed workers can hardly be prevented in view of the family and social relationships in the agricultural sector. Thus, the employers would tend to employ the available labour force at a wage rate which is higher than marginal product, because an attempt to equate the wage rate to marginal product decreases profits by decreasing efficiency and output. According to this theory the withdrawal of a segment of the labour force from agricultural employment, be it self employment or wage employment, would not result in a loss of output and might even increase it—because it would be expected to lead to a rise in consumption per head, and hence the productivity of those who are left behind on the land. The foregoing analysis is different from the treatment of disguised unemployment in the Fei-Ranis model, since in their system the withdrawal of labour results in a loss of output, though the loss in output is less than the savings in wage cost, which remains constant and institutionally determined so long as any disguised unemployment exists.

Empirical evidence on redundant labour and disguised unemployment is difficult to come by, and attempts at their quantification have not been very successful owing to various difficulties of measurement. For example, an attempt [5] to measure idle labour time in an operational sense in Pakistan has yielded the following results:

i) The extent of visible or open unemployment varies between 15 per cent and 25 per cent of total man days in a year. This measurement of visible unemployment does not distinguish between voluntary and involuntary unemployment, a distinction which is relevant in the case of rich farmers. There is a wide variation in the extent of unemployment between different seasons. In peak seasons shortages appear—as indicated by the participation of children and women (not usually a part of the labour force) in farming operations—as well as by the reverse movement of labour from urban to rural areas.

ii) With a smaller size of farm per active member of the family, *i.e.*, with

an increasing pressure of population on land, the employment of man hours per acre, both family as well as hired labour, goes up. Though no direct measurement of the marginal product of labour is available, the smaller farmers are not expected to hire more labour per acre unless it is worth their while in terms of additional output in view of wages, either in kind or in money, which have to be paid. There is a tendency for the yield per acre to rise with an increase in the amount of labour utilised per acre of land, the increase in output per acre being quite significant in the case of smaller farmers.

iii) For bigger farmers there is some tendency for there to be an increase in the number of unemployed man days per worker with an increase in the size of holding per active member of the family. This may indicate differential factor proportions, *i.e.*, differences in the relative uses of labour and capital between large and small farmers as well as some amount of voluntary unemployment among rich farmers, since the latter seem to be satisfied with a lower output per acre even though they spend more man days without employment.

iv) There is no conventional wage rate. The landless agricultural labourers are employed at varying wages for varying lengths of time. They are the least protected economic group in terms of both income and employment. Social conventions neither protect their wage rate nor guarantee their employment.

A permanent shift of labour from rural areas to urban areas would necessitate, in most underdeveloped countries, measures to meet excess labour requirements during peak seasons by the substitution of capital or other factors for labour. Alternatively, the utilisation of idle labour during slack seasons may be undertaken by employing rural labour either in rural industries (which could be contraseasonal in the sense that they can release labour for peak seasons) or in a rural public works programme, *i.e.*, construction of roads, buildings, irrigation canals, embankments and drainage systems, *etc.* These methods of employment of labour do not imply a reduction in the proportion of the labour force employed in agriculture but only imply a more effective and fuller utilisation of total available man days. They do require capital investment from outside the rural economy.

It is most pertinent to observe in this context that Fei and Ranis do not examine the implications of the possibility that the whole of the agricultural surplus consequent on the withdrawal of "redundant labour" might not be available for use as a wages fund in the industrial sector. The leakages enumerated by Nurkse are well known. An analysis of the implications of such leakages is conspicuous by its absence in the book. The form of landownership and management which the authors use as the relevant frame of reference for their

analysis is wage employment of agricultural labour under a system of landlordism. If the landlords sell (to the industrial sector) the agricultural surplus which emerges as a consequence of the withdrawal of redundant labour, the demand for food on the part of the reallocated labour exactly matches the marketed supply of surplus food, and there is no rise in the price of food. There is no net increase in per capita consumption in the economy. Under such a system of wage employment, so long as the excess of output over wages accrues as a surplus to the landlords, the possibility of an increase in per capita consumption on the part of the agricultural labour can be forestalled. Under alternative systems of land ownership and management, the surplus appears wholly or partly (under share cropping) as additional income to farmers, and as an increase in the per capita availability of food. Considering the existing low level of consumption of farmers, a tendency towards an increase in the consumption of food on the part of those left behind on the farms is most likely. Added to this is the fact that the per capita income of that part of the labour force reallocated to industry is higher (expressed in terms of industrial goods), and at least a portion of this extra income will be spent on food. Thus a shift of labour from low income to high income occupations increases total income as industrial output increases and, as a consequence, the demand for food increases while agricultural output remains unchanged (with redundant labour *a la* Fei-Ranis). Under the circumstances, the tendency for agricultural prices, especially food prices, to rise would have all the consequences (although to a lesser extent) on the wages and profits in the industrial sector which have been ably analysed by the authors in connection with the withdrawal of labour under their conditions of disguised unemployment.

It is noteworthy that the authors do not anticipate any spill-over of intersectoral price changes or changes in relative prices into a general price rise. A rise in the cost of living of industrial workers caused by a rise in food prices and a consequent rise in wage costs may be accommodated by an increase in the money supply to enable a rise in industrial prices to keep profits from falling. One may think of various alternative ways of mobilising redundant labour which may not lead to a rise in per capita consumption of food and may not affect intersectoral price relations.

If agricultural population could be put to work within agriculture itself most of the leakages may not occur. The first alternative is that family farms themselves undertake construction or investment activity through the use of family surplus labourers, who continue to eat the same food in the same kitchen. However, if the surplus labour of one farm family is to undertake construction of a well, a fence, or bunding and levelling of land, the gestation period is likely

to be long and the project may be beyond the time horizon of many individual farmers. There are few projects which can be undertaken on the basis of the labour of individual family farms and which can be completed within the time horizon of the individual farmers. Alternatively, if the surplus labour of the farm families can be put together in some sort of work "brigade" or "teams" to undertake capital projects on all farms on a cooperative village-wide basis, the gestation lag of each of the project can be drastically shortened. Each will gain from this effort because in exchange for his work on the improvement of other farms, others work for the improvement of his farm. No cash payment and no transfer of food or payment of wages are involved. Some amount of capital has to be supplied either from rural savings or from outside. All these will directly expand employment.

However, if capital projects are to be undertaken by the employment of labour on wage payments away from their own farms, the familiar leakages arising from an increased consumption by those left on land and from the possibility of increased consumption of food by recipients of money income, may occur. This may be prevented if payment could be made in terms of deferred wages, *i.e.*, wages to be paid in cash only when increased output materialises. A significant proportion of increased output will be spent on food, if employment is away from home, and if new housesteads are built up near the projects.

What is happening in Pakistan in recent years in the course of the rural public works programme, confirms the above hypothesis. Under this programme labourers are not withdrawn from agricultural operations and only their idle time is being utilised, including unemployed man hours of those who were visibly unemployed. Even then it is necessary to import a wages fund, *i.e.*, foodstuffs from abroad under PL 480 to undertake this programme. The alternative would have been a resort to compulsory labour. Additional food thus has gone to accommodate increased consumption on the part of the farming population as well as of the unemployed rural labour force which is being constantly augmented by an increase in population. The rural workers have continued to live in their old habitat and to share in the consumption of the family. It has not been possible, therefore, to rely entirely on mobilization of the wages fund or the disguised savings implied in the model of redundant and disguised unemployment. An exclusive reliance on disguised savings would have necessitated the employment of labour in the rural works programme without any payment of wages and on the condition that the labourers would continue to receive their previous share of the consumption goods of their families and no more. But the institutional and organizational problem of mobilising wages funds for the reallocated labour by keeping the consumption of the rest of the

rural labour force constant poses an intractable problem in which the market mechanism does not seem to be of much help.

The crucial problem in an underdeveloped economy, where the agricultural sector constitutes the largest component of national income is how, firstly, to generate an agricultural surplus through improvements in agricultural productivity and secondly, to channelise the available surplus to investment in the industrial sector. Fei and Ranis believe that in the improvement of agricultural productivity and in the generation of the surplus, the market mechanism and price incentives can play an effective role. It is indeed difficult to ensure mass participation among the millions of small landlords and cultivators by means of direct intervention by the State in the production process. On the other hand, in the task of channelising investment funds from agriculture to industry the government may play an important role, either by fiscal means or by improving the efficiency of commodity and financial markets to facilitate the intersectoral flow of resources.

Fei and Ranis cite with approval the role of the Japanese landlords, who performed the dual functions of undertaking considerable improvements in agricultural productivity as well as of serving as financial intermediaries to channelise agricultural savings to the industrial sector by investing directly in industries or by purchasing industrial shares and debentures. The authors do not throw any light on the best or most appropriate form of organisation of agricultural production from the point of view of an improvement in agricultural productivity and of a generation of agricultural surplus. The landlords in various underdeveloped countries have not always behaved in the way the Japanese landlords behaved. The role of the Japanese landlords cannot be divorced from the whole complex of the socio-cultural traditions of Japan. This will take us far afield, but one cannot help feeling that there is an oversimplification on the part of the authors. The following features of the Japanese agriculture seem not to have received sufficient emphasis:

- 1) A land tax reform accentuated the severe degree of exploitation of tenant farmers who paid rent in kind so that they could not benefit from a rise in the price of their crops.
- 2) The land tax reform reduced the share of the actual cultivating tenants in the gross product of farm produce to 32 per cent and increased the share of the State to 34 per cent and that of the landowners to 34 per cent as compared with the previous shares of 27 per cent for feudal lords, 25.2 per cent for landowners and 37.8 per cent for cultivating tenants [6]. The immediate result was that a large number of small landowners sold land under the heavy burden of taxation and joined the ranks of tenant farmers. The big landowners who survived the period of severity became richer in the subsequent period. The

polarisation process in landownership was accelerated [7]. 3) There was considerable share-cropping. The share-croppers had very tiny holdings, only a fraction of those of share-croppers in other Asian countries. They could avoid starvation only by cultivating land very intensively [8]. Thus, the intensification of Japanese agriculture followed under the threat of starvation. The intensive application of labour to land resulted in an increase in output per acre. There was no significant increase in the early years in output per man. The increased output resulted in an adverse movement in the terms of trade of agriculture. 4) The dispossessed feudal pensioners, faced with a loss in the value of their commutation bonds, were forced to seek outlets for their enterprise elsewhere. The commutation bonds served as the basis of creation of credit by the banking system. 5) The unfavourable turn in the terms of trade of agriculture coupled with the continued plight of the peasants contributed to the low supply price of labour. The textile industry recruited young girls before marriage in the form of contract labour for which parents were paid a nominal sum [7]. Even in the case of voluntary labour the supply price was not equal to minimum subsistence or a minimum determined by social convention plus a margin to compensate for 'transfer costs'—as Fei and Ranis suggest—but was based on the consideration of supplementing family income and not much more. The survival of traditional family relations in Japan retarded the emergence of the category of wage income as reward for an independent unit of a factor of production. The low wage in the textile industry set the standard for wages in other industries.

It is important to remember that many of these features of Japanese agriculture cannot be reproduced in the contemporary world. One could examine the relevance of the alternative types of land management for present day developing economies. There is the system of the capitalist farmer employing wage labour on large integrated farms, which are probably the most efficient in terms of generating a surplus for investment. The system in which landlords act as entrepreneurs in the matter of supplying and supervising the use of resources for investment by tenants and receive a share in output may achieve the same result. Under the system of peasant proprietorship where the owners and cultivators are the same, the peasant households strive to secure the maximum output from the household farm by the fullest application of labour. This results in a wider distribution of income from land, especially when the introduction of peasant proprietorship is associated with a redistribution of holdings and an imposition of a ceiling on landownership. If the units of production are reduced below their optimum size, total agricultural output would be below the maximum. This raises the familiar question of efficiency versus equity. The maximisation of output under peasant proprietorship, or with tenant cultivators paying a fixed rent, conceivably could be consistent with the realisation of an adequate

amount of investible surplus if price system and the fiscal mechanism could channelise a part of the output to investment. It is necessary, however, that peasant or tenant cultivators should have sufficient incentives, *i.e.*, they should be confronted with adequate opportunities for profits from the cultivation of the land. The underdeveloped nations have wavered between various kinds and degrees of land reforms, often faced with conflicting objectives. The trend is towards peasant proprietorship or a redistribution of holdings.

Fei and Ranis have emphasised the role of financing intermediaries which can channelise savings from the agricultural sector to investment in the industrial sector. The role of the Japanese landlords as financial intermediaries has been cited in this context, but the authors seem to have paid no attention to one of the most important consequences of capital formation through direct reinvestment of profits. Owing partly to the inadequate development of financial markets in any underdeveloped countries of today, investment is financed through a direct reinvestment of profits. This gives rise to a concentration of control of wealth and property with its attendant social and economic consequences. When the landlords reinvest their surplus directly in their own industrial enterprises, there is a concentration of big land holdings and large industrial enterprises in the same hands. Again, traders, specially importers, reinvest their high profits in industries, thus combining trading and industrial enterprises in the same hands. Often land holdings, commercial enterprises and industrial enterprises are all combined in the hands of the same group of people. This tendency towards the concentration of ownership and control is aggravated by the role which banking and financing institutions (which are often owned by the same group of commercial and industrial entrepreneurs) play in the financing of investment. Thus, they attain control over the disposition of savings of the rest of the economy to which is added the creation of credit which the banking system undertakes.

The resultant inequality of income and wealth may, however, be conducive to a high marginal rate of saving and hence to a high rate of capital accumulation. An excessive concentration of ownership and control of economic activities has been one of the important features of the Japanese economic growth, which the authors accept as a model of successful development.

The conflict between equity and efficiency can be mitigated if a wider diffusion of wealth and income (which is subject to a greater pressure of consumption demand) can be matched by an appropriate fiscal policy to realise a high marginal rate of savings. These are questions which, in the mid-twentieth century and at the present level of social consciousness prevailing in underdeveloped economies, cannot be easily avoided. To the extent that higher wages

or better health services may increase the productivity of the labour force, the conflict between equity and efficiency is reduced. Moreover, if heightened expectations of the masses for an increased share in the fruits of development are frustrated, it may lead to social and political unrest.

The development of the Fei-Ranis industrial sector is postulated on the basis of a horizontal supply curve of labour at a wage rate which is higher than the agricultural wage rate by a constant margin. The authors do not undertake any detailed analysis of the need for an extent of this margin, and they seem to accept the statement of the problem as given by W. A. Lewis. But there are some interesting and plausible explanatory hypotheses. One could argue that the difference in the wage rate partly goes as income to the contractor or jobber, *i.e.*, to the middleman in the industrial labour market, who in spite of apparent surplus labour, does the job of an employment exchange in return for a share in the income of industrial workers. The higher wage rate may also be a partial compensation for the loss of income on the part of those workers of the family (women and children) who contribute to family income in the household sub-sector of the agricultural sector, but lose their sources of income when they move along with the main bread-winner or head of the family to the industrial sector. With reference to the horizontal supply curve of labour, the industrial wage rate does not necessarily remain constant in the face of increasing accumulation. Autonomous or exogenous factors unrelated to the adverse movements in the terms of trade of the industrial sector may cause a rise in the supply price of industrial labour. The horizontal supply curve may shift upwards through time either because of trade union pressure or because of government intervention in the regulation of industrial wages. The militant strength of trade unionism even in labour surplus countries is not unknown and the governments of developing countries are often obliged to yield to the consideration of social justice and equity. The experience of Puerto Rico in this respect has been delineated in a recent study by Prof. L. G. Reynolds [8]. The Third Five Year Plan of Pakistan, as another example, postulates that wages in large-scale industry should rise at the same rate as the increase in productivity—which is expected to be 2 to 4 per cent per annum [9]. This would slow down any increase in the ratios of profits to the total "value added" of the manufacturing sector. One can, however, conceive of possible ways to counteract the consequential adverse effects on saving. The institution of a compulsory provident fund for industrial workers, to which workers contribute the increase in their income, and/or payment of enhanced wages in the form of industrial shares may ensure that an increase in wages is at least partly matched by an increase in savings.



If wages were to remain constant at the subsistence level and profits were to go on increasing as a proportion of national income, there would necessarily be a restraint on the growth of consumption demand—which necessitates that industrial investment should have a bias towards capital creating projects, *i.e.*, toward infrastructure and capital goods industries which do not cause an immediate increase in the supply of consumption goods. The more orthodox argument is that relative scarcity of investment funds suggests the adoption of labour-intensive techniques of production which maximise current outputs with given investment resources and which, in the process, lead to a maximisation of employment. However, the conflict is usually between the maximisation of current output or employment and the maximisation of the rate of growth. Techniques which require large capital per unit of output may be more conducive to a higher rate of growth, if the income distribution pattern emerging out of the adoption of capital intensive techniques enables a large saving and investment per unit of additional output. This conflict can be obviated if fiscal measures can be devised to squeeze equivalent savings out of additional income, irrespective of the way in which additional output is distributed between profit and wage recipients. In a labour surplus economy, so long as real wages are constant, the income distribution effects of additional output are conducive to a high marginal rate of saving. The larger increase in output per unit of capital, consequent on the adoption of labour-intensive techniques combined with constancy of real wages, may more than offset (up to a point) any adverse distribution effects on the flow of investible surplus.

The authors suggest that industrialisation in Japan (at least until 1915) was based on labour-intensive techniques, which accelerated the process of absorption of surplus agricultural labour in the industrial sector. Not all the analysts of the history of the Japanese industrialisation agree with this interpretation [10]. The statistical evidence on the Japanese industrial sector in the Fei-Ranis model relates to the whole of the non-agricultural sector, consisting of both secondary and tertiary industries which were an amalgam of industrialised and pre-industrialised sectors. They include traditional small-scale enterprises in the service and trade sectors as well as the government services, all of which are highly labour-intensive activities. An analysis of manufacturing industries alone reveals that, in spite of the existence of an abundance of labour, technological innovation in Japan consisted in the introduction of capital-using techniques. This is what is corroborated by the data relating to the period 1905-1915 as presented by Watanabe [11]. The adoption of labour-saving techniques was based on borrowed technology from advanced countries. The Japanese, according to this interpretation, had a high ability to understand, and to digest foreign, advanced techniques and to operate and maintain imported equipment without any serious

trouble; but they had a low ability to develop new techniques in the early stages of industrialisation. The ability to meet the requirements of skill for advanced technology was based on a sufficient supply of a reasonably well educated labour force, which subsequently underwent intensive technical training. The relatively high capital requirements of capital intensive technology were met by a relatively high rate of saving. The socio-economic character of the agriculture and service industries was such that they absorbed a considerable proportion of the labour surplus. While borrowed technology was mostly confined to larger industries or firms, attempts were made to ensure a reasonable increase in the levels of productivity in the residual sectors small firms, proprietors and farmers. The smaller firms specialised in products and processes which were particularly suitable for them. The old capital assets, which were considered to be inefficient for the higher level of modern technologies, were transferred from the larger firms which owned them to smaller firms. The smaller firms often used second-hand capital assets which, associated with an elastic supply of labour, enabled them to earn almost the same rate of return on capital as the larger modern firms.

On the question of choice of techniques, it is worth emphasising that the great dependence of developing economies on imported equipment embodying capital intensive techniques of advanced countries is a reality, and increasingly so, in the face of tied-aid financing of most of the imports of capital equipment. This eliminates whatever differences and, therefore, choice there may still remain between the techniques of individual advanced countries. Moreover, only a limited range of techniques are alleged to be available, *i.e.*, the prevalence of fixed coefficients of production is often postulated. This would suggest the necessity of invention of labour intensive techniques which would in turn require a considerable investment on research in the development of techniques.

The authors' advocacy of a relative emphasis on the capital goods industry and projects with a long gestation lag in the early years of development of a labour surplus economy is based on the assumption of low and a constant real wage exercising a restraint on the growth of consumption demand. In many underdeveloped countries of today the emphasis on heavy industries has been justified not so much because of a lack of demand for consumers' goods as because of the relative ease of restraining consumption and mobilising a higher marginal rate of savings from additional output when it accrues in the form of non-consumable investment goods. If in this situation the propensity to consume tends to outstrip the supply of consumers' goods, a restraint on the rise in wages or appropriate fiscal measures are necessary. Otherwise increased savings are realised through a rise in profits caused by a rise in the prices of consumer

goods under the pressure of excess demand. The relative emphasis on heavy industries is also justified on the ground that low income and price elasticity of primary exports, the chief source of foreign exchange for developing economies, severely limits the possibility of raising investment *via* import of capital goods. The probability of loss in real income from adverse terms of trade caused by attempts to push inelastic exports in world markets may justify the domestic production of capital goods at a high cost. Moreover, while admittedly capital goods industries do not always require capital intensive techniques, it is equally true that requirements of relative skills significantly differ between different industries, and capital goods industries tend to require a higher level of skill. The relative abundance of an undifferentiated mass of unskilled labour favours only those industries which require relatively low levels of skill. The formation of skill requires capital investment and returns on such investment are expected to be high. A labour surplus economy has an additional incentive to invest in skill creation because of the pressing need to provide employment through the development of a wider range of industries, which require the development of skill. Moreover, in a capital and natural-resource poor and labour abundant country (such as Pakistan, for example), one may suggest a relative emphasis on industries which have a high ratio of "value added" to total output, *i.e.*, industries which depend relatively more upon human labour and skill than on materials which in the context of relative poverty of resources need be imported.

In an open economy the transfer of resources from the agricultural sector to the industrial sector may take the form of an export surplus originating in the agricultural sector and financing the import of capital goods and raw materials for feeding the expansion of the industrial sector. Thus even in an open economy improvement in agriculture holds the key to industrial expansion by providing a large export surplus as well as raw material inputs to the domestic industries. Most of the underdeveloped, agricultural export economies have used import and export controls to obtain an agricultural surplus for industrial expansion. Increased incomes in agriculture in an export-oriented economy appear as increased cash crops exports which can be siphoned off by the mechanism of foreign trade more easily than would be the case of increased incomes were to accrue in the form of increased food production which may be consumed by the farmers.

The introduction of the additional variable of foreign aid in an open economy has important implications for the pattern of development which do not appear to have been adequately explored by the authors. If foreign aid supplies are investible surplus in the form of a wages fund, as well as of capital goods and raw materials for industrial expansion, the role of agriculture is

limited to the supply of labour for industry. Imports of food under foreign aid compensate for any fall in agricultural output consequent on the withdrawal of labour from agriculture, leaving the intersectoral terms of trade and industrial wages unchanged. If the manpower for industrial expansion is supplied by a net increase in population, there is no net withdrawal of labour from agriculture and no fall in agricultural output. If the expanded industrial output can find markets abroad, it can overcome the limitation of a narrow domestic market arising from constancy of real wages and from an absence of any increase in agricultural productivity.

Industrial expansion is large enough to draw on disguised unemployment and increasing withdrawal implies a fall in agricultural output at an increasing rate which unless matched by an increasing flow of imports, requires an improvement in agricultural productivity. Moreover, an expansion of the industrial sector based on the export market seems to ignore the difficulties which exports of light consumer goods face in the world market in view of their low income and price elasticities. World trade in light manufactures grows at a slower rate than that in heavy producer's and intermediate goods, the very fields in which underdeveloped countries are in a position of disadvantage (at least initially) to compete in the world market. Therefore, the expansion of a home market based on an increasing agricultural productivity seems to be a more reliable and surer base for industrial expansion. Moreover, as the experience of countries with considerable industrial exports shows, industries based on a large domestic market are the most successful ones in export markets as well. A large domestic market not only enables the realisation of economies of scale and reduces cost, but also provides the necessary incentive and confidence, mainly springing from the stability and assurance of a domestic market as against the vicissitudes of a world market, for the exploitation of technological improvements. The enterprises which successfully meet the competitive struggle in the home market are more likely to succeed in the world market. The world market for manufactures is as imperfect as the domestic market and requires high pressure salesmanship and development of consumer preference. Those who have done it well in the domestic sphere are likely to do it well in world trade.

While the authors recognise the role of foreign aid in supplementing domestic resources, they assign an additional, at least equally important, role to foreign aid in a) freeing the foreign exchange market from direct controls and b) in the creation and strengthening of domestic financial intermediaries via the use of counterpart funds generated from the flow of foreign aid. Foreign aid has two distinct functions which are not often adequately stressed in the literature on

aid and development. Foreign aid not only supplements domestic resources but also augments the supply of scarce foreign exchange. Even though in an *ex post* sense the savings-investment gap is equal to the foreign exchange gap (i.e., the gap between foreign receipts and payments), the *ex ante* gap between savings and investment need not be equal to the *ex ante* foreign exchange gap. An excess of estimated requirements of foreign exchange over anticipated resources may be a more serious limitation to growth than the insufficiency of anticipated domestic savings. Owing to the immobility of resources between the foreign trade sector and the rest of the economy, and to the imperfections of the price mechanism (and inelasticities of supply and demand), resources released by savings accruing in the domestic sector may not be transformed into an expansion of exports or a curtailment of imports. In a typical underdeveloped economy where the capital goods sector is strictly limited and the resources base is narrow, most investment projects have a foreign exchange component. They cannot materialise, even if domestic savings are available, unless a part of savings accrues in the form of foreign exchange to supply the essential imports for investment. In an *ex post* sense the equality between the two gaps may have to be reached *via* a frustration of potential savings which fail to be invested; and the gaps are then (*ex post*) both equal to the amount of foreign economic assistance which is available. An increase in foreign economic assistance under these circumstances may raise the level of total investment by enabling domestic savings to be invested with the help of imports of critical inputs.

Fei and Ranis lay great stress on the opportunity which foreign aid offers for greater use of the price mechanism in the foreign exchange market. But a free foreign exchange market is desired not so much for the superior allocative efficiency of the price mechanism as for the possibility it offers for mass participation in entrepreneurial decisions *via* free access to the foreign exchange market. It provides for an improvement in entrepreneurial resources as experience accumulates with the opportunity for participation. However, the authors do not explain whether or to what extent intergovernmental, "tied" loans (which are the most predominant form of international economic assistance) permit the fulfilment of these functions. It should be pointed out that this particular role of foreign aid can be fulfilled only if foreign aid takes the form of "free" foreign exchange making a net addition to the foreign exchange reserves of the economy. It should be "free" in the sense that foreign exchange so supplied is not tied to the purchase of specific commodities, to specific projects, or to purchases from a particular country. With any of these forms of tied aid, government intervention in the administration of foreign exchange becomes necessary. The tied aid, in the sense of compulsory purchases from an aid giving country, is best administered by means of country quotas. It is, however, possible to resort

to the free market in a limited sense, in so far as the distribution of aid among individual importers is concerned, by auctioning to intending importers the specific aid licences for specific countries or for specific projects. The use of foreign aid for freeing the foreign exchange market from direct controls presupposes an agreement on the part of the donor countries to guarantee a certain minimum amount of foreign aid to add to the pool of foreign exchange reserves, taking into account the foreign exchange requirements of a country's investment programme and prospects of its own foreign exchange earnings. The increased flow of commodity aid, as the recent experience of Pakistan shows, does facilitate a liberalisation of imports from direct controls. In addition to the flexibility which untied commodity aid imparts to the implementation of development programme, its liberalising impact on the foreign exchange market is an important argument for increasing the ratio of commodity aid in the total flow of aid to developing countries. The counterpart funds can play a useful role in strengthening domestic financial institutions and have often been so used. This is a subject which, though mentioned by the authors, is a complex one, and which needs a much more thorough analysis than that contained in the book—nor can it be explored in this review.

To sum up, the authors have made a contribution in working out a wide range of possible implications on the basis of a given set of assumptions. But in some instances one wonders whether they have based their conclusions on sufficiently realistic assumptions or on adequate empirical evidence. For the basic core of their analysis, the distinction between the two stages of labour surplus is not strictly necessary. Moreover, the distinction is not operational. The authors do not provide any explanation as to why the equilibrium wage rate in the agricultural sector may be higher than the marginal product. What is relevant in most of the underdeveloped, overpopulated economies in Asia is self-employment and *not* wage employment, which is the only frame of reference of Fei-Ranis model. Again, the assumption of a constant wage rate in urban areas is not always justified, and the market prices of factors may diverge from their scarcity prices. The implications of these departures from their assumptions are not examined. Fortunately, neither the assumption of constancy of the wage rate, that of redundant labour, nor that of disguised unemployment is essential for the analysis of the interrelations between development in the agricultural and industrial sectors in terms of productivity changes, technological innovations, and movements in intersectoral terms of trade.

This is an important book, dealing with important issues. The authors have certainly put in a sharper focus many of the assumptions which are stated, but not rigorously demonstrated, in the Lewis model. They show considerable skill in reducing the complicated general equilibrium equations to geometry and

relatively simple, familiar diagrams. The book certainly contains, in many respects, the neatest and the most skillful pedagogical device so far employed in the exposition of the two-sector allocation model. Their exposition of the interrelated effects of technological improvements in agriculture on output, wages, profits, employment, intersectoral terms of trade and industrial investment is most admirable in its clarity. Though the Fei-Ranis analysis of foreign trade and aid is not peculiarly relevant to the labour surplus economy, it does contain valuable observations which apply to all underdeveloped economies. Despite the many reservations expressed here, the book, especially Chapters 3, 5 and 6, must be considered essential reading for students of development theory.

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