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UNDER-EMPLOYMENT IN RELATIONSHIP TO MACRO-ECONOMIC POLICY

FRANK T. BACHMURA

IT is increasingly evident that the problem of measurement of under-employment is not generating the degree of interest from economists which conforms with the seriousness and magnitude of its relevance for problems of economic development. Even in countries which are relatively well developed, manpower sub-utilization, as typically conceived and measured refers to unemployment—a basically urban phenomenon. As a consequence a significant portion of the manpower sub-utilization problem of the rural economy disappears from the explicit consideration of policy makers. This becomes especially important with respect to macro-economic policies, both monetary and fiscal, labour policy, and, ultimately to agricultural policy.

In a country like India, it is clear that the relative importance of the sub-utilization of manpower resources in or associated with the agricultural sectors is a consideration of even greater importance than the same manifestation as it relates to developed countries. The United States with only about 10 per cent of its labour force in agriculture, even with its rural population increasingly employed in urban-type industries, still holds about one-third of its population in its rural areas. This proportion is almost invariably higher in the less developed economies.

At the outset it is well to view the semantic problem involved in distinguishing under-employment from partial unemployment. The usage of the International Labour Organization¹ suggests itself as a means of coming to grips with the subtleties of unemployment-under-employment classification. Such a distinction recognizes the important aspect of daily, weekly, and seasonal unemployment

1. International Labour Organization, "The Measurement of Underemployment," *International Labour Review*, LXXVI, No. 4, October 1957, pp. 349-366.

(depending upon the time period used as a base) and its contrast with the form of sub-employment which under-employment suggests. This stems not simply from the failure to secure employment throughout a given time interval, but it is a matter of the low productivity and low returns to the under-employed labour factor in relationship to the returns for equivalent temporal inputs accruing to persons of equivalent skill and educational endowment elsewhere in the economy.

It should be suggested at the outset that under-employment would not exist in an economy characterized by a long-run equilibrium in full employment economy with flexible wage rates. However, it is an observable fact that the time span required to eliminate such disequilibria may exceed the life-time of persons now arriving in the labour force. In other words, just as unemployment is a characteristic of a maldjustment of one sort, economically speaking, under-employment is a characteristic of economies which have a basic disequilibrium. Such a disequilibrium, of course, may actually represent a movement towards a long run solution. However, the important thing for us to consider is the need for conceptualizing and measuring the existence of under-employment, particularly as it relates to the formulation of macro-economic policy.

Nothing said herein can erase the need and importance of measuring unemployment. Without a doubt, the measurement of partial unemployment even in countries which devote a considerable amount of public expenditures to such data collection, presents startling imperfections. However, the difficulties involved in conceptualizing and measuring under-employment have proved so formidable that there has been remarkably little effort in resolving this problem. It may also be true that political articulations in countries in which the agricultural labour force constitutes a small proportion of the total labour force has led to a neglect of both the theoretical and the empirical aspects of under-employment.

The writings of the well-known Japanese economist, Ohkawa,² provide a springboard for conceptualization of under-employment. His characterization of the agricultural sector as one which is usually "over-occupied" in the under-developed countries is singularly perceptive. Now, we may take it for granted that an over-occupied agricultural sector characterizes countries such as India. However, the important consideration for a developing economy is to observe the difference in returns to equivalent labour inputs in the over-occupied sector relative to that sector which must of necessity be considered *being* "under-occupied." The expected solution to a problem of under-employment involves labour force movement from the over-occupied sector to the under-occupied sector until there is equilibration of rewards to labour inputs of equivalent skill.

The substantive question then arises as to the appropriate difference in real incomes, that is to say real wage incomes, to those persons who are in the under-occupied sector *vis-a-vis* real wage incomes accruing to those in the over-occupied sector. I suggest that real difference in wage rates between these two sectors is greater than that which is necessary to generate the required movement and reallocation of the labour force. I suggest further that even if at some initial state the real wage difference between the two sectors is appropriate, that the process of

2. Kazushi Ohkawa, "Economic Growth and Agriculture," *Annals of the Hitotsubashi Academy*, October 1956, pp. 46-60.

development and the cumulative effect of the movement from the over-occupied to the under-occupied sector will eventually require a smaller real wage difference manifesting itself in declining urban wage rates. However, this decline will typically be forestalled, if only in part, by various actions which limit entry on the part of new arrivals or potential arrivals in the under-occupied sector. This is particularly manifest in those occupations which require more than minimal investment in the human agent. There comes to be a traditionally expected relative level of reward associated with a particular skill or profession. With the expansion of educational investment in the process of development and the resulting greater supply of such skilled persons, a number of stratagems come into play which operate to prevent a diminution of wage rates if not of wage income. While these stratagems may not always meet with success, the point is that they may have the effect of either (a) reducing the flow of persons from the over-occupied to the under-occupied sector or (b) of retarding the absorption of newly arrived migrants from the over-occupied sector into the under-occupied labour force. Perhaps this may be characterized in the Indian case by what is known as the Calcutta syndrome.

It seems that the characteristic of under-employment is not confined to countries of extremely low per capita income such as India and other South Asian countries, but there is considerable evidence of this existence in more developed countries like Japan and the United States. However, the existence of large numbers of unemployed persons in an urban centre such as Calcutta may be simply the visible part of the iceberg of the under-employment problem inasmuch as it becomes revealed in unemployment statistics. The invisible portion, often referred to as "disguised" unemployment, never comes to the policy maker's attention in explicit, measurable terms but simply as a vague entity, often regarded as "disguised."

Regardless of the limitations that may be described in neo-Keynesian analysis with respect to basic supply inelasticities in under-developed countries, its emphasis and concern focus on the urban conception of unemployment. It conceptualizes the steps by which persons would move from the over-occupied to the under-occupied sector in the following fashion. It implies that a very large portion of new job openings in the urban sector would have been pre-empted by those persons already in the urban area. This implication does not preclude movement between urban areas, nor does it preclude absorption of some person who had newly arrived from the over-occupied sector. However, the important thing is that there was and continues to be a natural priority of emphasis coming from the fact of proximity coupled with more perfect knowledge of labour market conditions. The effect of this is taken with the somewhat traditional and perhaps combinatory aspects of urban labour markets for certain skills. Only when there had been a considerable absorption of the unemployed labour in the urban sector would one expect to see appropriate signals for still greater movement from the over-occupied sector. Thus we may suggest that there is another significant drawback to the unsophisticated use of the Keynesian model particularly with respect to the under-developed countries; in addition to supply inelasticities with respect to many commodity markets, is the relatively small portion of the total economy which is affected by unemployment in the conventional Keynesian conception. In fact, in many highly agricultural countries less than a third of the labour force would be in the under-occupied sector and measurements based upon this group would lead to the formulation of policy for the country as a whole. To the extent that the wage rate diffe-

rence between the two sectors is larger than necessary we may, with some provisos to be later examined, suggest that this may be the most apparent manifestation of under-employment. Thus, measurement of these differences would give a first order approximation of the magnitude of reduced national income and reduced rates of growth in countries importantly affected by the phenomenon of under-employment.

REAL INCOME DIFFERENCES BETWEEN THE OVER-OCCUPIED AND THE UNDER-OCCUPIED SECTOR—THE PROBLEM OF DOWNWARDLY INFLEXIBLE WAGE RATES

Continuing to use Ohkawa's conception of the over-occupied and the under-occupied sectors,³ we see that a developing economy always has the problem of dealing with its more educated classes even in the process of increased capital investment in education and training. There is a tendency for a traditional maintenance often reinforced by social norms affecting income levels, in particular occupations. Thus, real incomes in these professions and occupations is kept at an artificially high level so that the gap between the under-occupied sector and the over-occupied sector is magnified and leads to solutions which are not in conformity with the called-for movements of the labour factor. In order words, instead of their being a downward movement of earnings in, let us say, the legal profession in India, there is a tendency for unemployment to appear for at least wage rates, if not annual incomes, to maintain themselves. This, in part at least, accounts for the in-movement, excessive it will seem, into professions which are at existing wage and income levels over-occupied. However, in terms of the equilibrating wage mechanism it would be expected that this movement would tend to move wages in the under-occupied toward a rough equality with wages in the over-occupied sector, necessarily subject to an appropriate return on the additional capital invested in the more highly educated human agents and perhaps some rental as payment for the use of relatively restricted and scarce assets in the form of more highly educable persons.

If the under-employment problem were a matter simply of the professional classes, such as the lawyer and the unemployed intellectual, it would perhaps not have such a serious significance for adjustments in the agricultural labour force. However, there is evidence to suggest that job entry is limited for many of the less skilled occupations in many of the under-developed countries. The problem then takes on a considerable magnitude and frequently leads to a situation in which inflationary techniques may be called for in an effort to try to eliminate the difference between the two sectors. The possibility of shrinking the wage differential to appropriate dimensions is often remote because of the typical inferior political organization of persons in the agricultural or over-occupied sector. This may well be true even in those countries in which the agricultural labour force by far outnumbers the non-agricultural labour force. In some countries it appears quite obvious that a small group, for example the tin miners in Bolivia, is in a position to exact unusual benefits from persons in the over-occupied sector.

It is not known precisely what the magnitude of the wage differential should be to attract and utilize sufficient numbers of persons to the urban sectors. However the lesson from almost all of the developing economies seems to suggest that

3. *Op. cit.*

there is a considerable lag in the process by which the agricultural sector may be brought reasonably close to their returns in the other sectors. In fact, regional analyses suggest that differentials may be widening between areas of agricultural emphasis and areas within the same countries which have not emphasized agricultural development. In some cases there may tend to be a more rapid rise in regional income as expressed in percentage terms in those regions which are relatively more over-occupied. However, frequently this differential in rates may not amount to a narrowing of the absolute income gap.

Be that as it may, the problem of downward inflexibility of urban wage rates is one with which the typical under-developed economy and often the so-called developed one cannot cope. Partly this is a matter of political articulation, partly it is a matter of the difficult aspect of downward wage movement, partly it is a function of the possibilities for unified or collective action.

THE SPECIAL CASE OF AN OVER-OCCUPIED SECTOR IN WHICH MARGINAL PRODUCTIVITY IS BELOW SUBSISTENCE

Georgescu-Roegen⁴ has suggested that a market economy may be a premature development in that type of economy which has been characterized by peasant or feudal holdings. It is quite possible that this situation describes much of the over-occupied sectors of India and other places in South Asia and elsewhere in the world. Georgescu's basic idea is that even though marginal labour productivity may be below subsistence the average product will be above. In such a situation traditional and institutionalized forms are employed to establish a minimum living level for those persons in the feudal sector. Everyone is provided for in some manner and a floor, so to speak, is established for even the lowest income producers in the society. The persons in the elite or governing bodies may receive larger proportions but their share is influenced by what is distributed to the lower orders. Despite their higher incomes, they may be residual claimants. Now this type of organization does not generally seem to apply in the urban sectors. There, it appears that movements are generally responsive to marginal productivity considerations. Moreover, the marginal productivity of the individual agricultural worker need not presently be below subsistence for the presistence of institutional forms may exhibit a life long beyond that called for by marginal productivities of a very low order. However, this suggests that there may be a larger gap between marginal labour productivity in agriculture and marginal labour productivity in the urban sectors than between average labour productivity in agriculture and marginal labour productivity in non-agriculture.

In other words, those persons who are equipped to earn a wage above subsistence in the urban economy may be attracted there. Usually these persons will be those who are better equipped in terms of natural endowments and perhaps in education. In other words, once labour productivity becomes rewarded in terms of marginal rather than average productivities, that the more productive classifications—young, literate male adults—will be the first to leave because they have nothing to lose and something to gain. On the other hand, those whose marginal productivity is low, (even below subsistence)—like Georgescu's gleaners—have

4. Nicholas Georgescu-Roegen, "Economic Theory and Agrarian Economics," *Oxford Economic Papers*, N. S. Vol. 12, February 1960, pp. 1-40.

nothing to gain by leaving the over-occupied sector in which they are rewarded in average productivity terms. If wage rates in the urban sector are inflexibly high, the new migrants will have responded to erroneous stimuli. In any case there may be an unfortunate subtraction of persons from the under-employed over-occupied sector to the urban so-called under-occupied sector. The effect to this would be to remove from a country's active productivity the increment that the idle and squatting population in the urban centres represented in the form of foregone production in the agricultural sector. It is true that this production, marginal though it might be, still would add a positive increment to the country's agricultural sector and therefore to the country's gross national product. Of course, the foregone production in the under-occupied sector would be even larger.

The transition from a concentration upon average productivity and minimum subsistence living standards characterizing the more traditional rural areas to the concentration upon market wages in the urban sectors is one that can never be smooth. However, the presence of large number of unemployed persons in the urban centres suggests an unnecessary cost which may be crucial in a country's development. For these reasons, under-employment estimation and measurement efforts are important to the developmental process.

ALTERNATIVE MEASUREMENTS OF UNDER-EMPLOYMENT

One way of measuring under-employment is through a standardized man-equivalent method. This is to say, to compare the real wages accumulating to persons in the over-occupied sector *vis-a-vis* the real wages to persons of apparently equivalent skill in the under-occupied sector. Ideally these are adjusted for education, for age and similar variables related to productivity. Thus that portion by which the agricultural labour force reward fails to come up to the urban sector wage constitutes a measure of the degree of under-employment and is expressed in some man-equivalent based on the urban unit. Each individual increment necessarily is less than one. This, minus some buffer, perhaps arbitrary, is intended to represent the needed difference rather than the actual difference between the wage and income rewards in the under-occupied and over-occupied sectors. This basic method has been developed at greatest length by Robert Glasgow⁵ in the United States Department of Agriculture and he has applied it primarily to the U.S. agricultural labour force. The application of this method does not appear to be particularly affected by the general problem of less-than-subsistence marginal labour productivity in the over-occupied sector. The real problem arises in terms of the established level in the under-occupied sector in that this established level may be higher than that called for in an intermediate equilibrium sense required for adjustment. In such a case there may be a significant over-statement of the degree of under-employment. Perhaps it would be better to characterize such a situation by some term such as over-payment, while trying to establish a more flexible basis for the determination of what such a wage conceptually should be in the urban sector. The conceptual and empirical difficulty in trying to establish such a level appears formidable. Even leaving out the possibility that wages in the under-occupied sector are unduly high, the problem of computing man-equivalents

5. See for example: Robert B. Glasgow, "The Income Position of the South in the National Setting," *Proceedings*, Association of Southern Agricultural Workers, 1963, as well as publications of the Economic Research Service, U. S. Department of Agriculture.

especially in a low income country in which data with respect to wages, education, and age distributions are meagre, and in which much income is received in kind is also a difficult problem.

A simpler variant uses a rather arbitrary calculation of under-employment in United States over-occupied sectors.⁶ This has been to establish a crude measure of the employable rural labour force, that is to say, the fully employable labour force and to establish an arbitrary annual income level below which all persons are to be regarded as under-employed. The resulting estimate is almost necessarily to be greater than the measure forthcoming for a man-equivalent basis because it measures the number of under-employed and not the man-equivalent level of presumed foregone economic production through under-employment. That is to say, this measure yields an estimate of the number of persons who are affected by under-employment and who would have to be reached by any remedial steps but it certainly overstates the quantity of sub-utilization of the labour force as suggested by the man-equivalent relationship. Neither measure is explicitly comparable with unemployment measures which are typically based upon unemployment during a time period much shorter than a year.

Another estimating procedure could be developed from an emphasis upon labour inputs by farm units after making a type of farming classification. Such a method would consider the required number of workers with a given technology against the actual number employed, which would usually be larger. The difference in whole or fractional manpower units, would be taken to constitute the extent of under-employment. This process would be admittedly crude but would serve to focus upon the labour factor in the process of economic development, agrarian reform, and related problems. It might be used in conjunction with the other two estimates to develop regional estimates of the degree of under-employment. Implicit in this, of course, is the presumption that the marginal productivity equilibrium rate for the agricultural labour force would itself be above subsistence. The measurement of under-employment in an agricultural sector in which the marginal real wage is below subsistence could be used to estimate potential under-employment but in terms of the existing resource base would appear not to be actual under-employment. This approach has been suggested in connection with land reform problems in Latin America and perhaps elsewhere. While this approach to the method of sub-utilization of agricultural manpower does not completely do away with the inherent problems of land classification, or in the market evaluation of the land input, it does suggest that there is a more homogeneous factor—despite all its non-homogeneity in the human agent. The human agent has, of course, an infinite degree of variation in one sense, but in the other in that he may be the measure of economic development in a consumption sense this measure suggests a very real homogeneity—and not only for under-employment estimation.

IMPLICATIONS OF INADEQUATE UNDER-EMPLOYMENT MEASUREMENT FOR MACRO-ECONOMIC POLICY

The ideas of Lord Maynard Keynes relating to the general problem of fiscal and monetary expansionary techniques to insure full resource utilization have

6. See for example: Frank T. Bachmura, "The Manpower Development and Training Act of 1962—Its Significance for Rural Areas," *Journal of Farm Economics*, XLV, February 1963, pp. 61-72 and "Manpower Retraining in the South's Rural Population—An Opportunity for Development: *Iowa Business Digest*, 34, August 1963, pp. 3-13.

usually been determined in terms of the degree of under-employment as registered in the urban sectors. The concept of the dynamic process of population movement from the over-occupied to the under-occupied sector appears to have been neglected. This constitutes an unfortunate influence forthcoming from the rather myopic preoccupation with the problems of the more developed countries with the result that unemployment rates as typically or conventionally defined have been used as a basis for policy decisions in under-developed countries to the neglect of the importance of under-employment. It is true, of course, that considerations of seasonal unemployment are sometimes made, but even this aspect is still subordinate to the problem of under-employment. To the extent that commodity supply functions are sufficiently elastic, the sole or undue reliance for policy purposes upon the employment rate may lead to inadequate dosages of an expansionary nature. The focus upon urban unemployment *per se* may lead to a neglect of important aspects of development policy. The degree of under-representation of the employment sub-utilization problem will tend to be inversely related to the proportion of the total population in the urban sector. It may be that a significant part of the development process lies concealed from the view of economists and policy makers by the utilization of unemployment rates and a limited number of urban centres and that the Keynesian full employment emphasis may not be the most relevant emphasis. In other words, this analysis suggests that the magnitude of available labour supply may be seriously under-estimated. In particular, it may suggest that the types of policies conforming to the propositions of W. A. Lewis,⁷ Georgescu-Roegen,⁸ and Nicholls⁹ have not been fully explored with respect to their potential impact upon economic growth and development policies in the under-developed world.

The basic proposition and burden of this article is to suggest that less than perfect accommodation to the sectoral income distribution and growth problems has resulted from an undue reliance upon unemployment estimates alone rather than upon unemployment and under-employment estimates together. The suggestion is that for many of the lower income countries it would be better to focus upon even rough measures of under-employment rather than upon the conventional measure of under-employment which seems to be a technique borrowed from the more urbanized and more highly developed countries in other regions and therefore more suited to their problems than to those of the less developed world.

7. W. Arthur Lewis, "Economic Development with Unlimited Supplies of Labor," *The Manchester School*, May 1954, pp. 139-191.

8. *Op. cit.*

9. W. H. Nicholls, "An 'Agricultural Surplus as a Factor' in Economic Development," *Journal of Political Economy*, LXXI, February 1963, pp. 1-29.