Employment and Underemployment in Brazil

1. Introduction

Two are the purposes of this paper: to appraise critically the literature on underemployment and disguised unemployment, in an attempt to cast light on such concepts as are growing round the debates on the subject, and to put forward a clearer description and definition of underemployment and unemployment in Brazil. [1] A review of works dealing with the

[40] GODFREY, Martin. *Measuring the Removable Surplus of Agricultural Labour in Low – Income Countries.* University of Manchester [inédito].

[1] Two previous studies are used for this purpose namely: O'BRIEN, F. S. *The Brazilian Population and Labour Force.* IPEA, March 1969 and SALM, C. L.. *Urban Underemployment.* IPEA, May 1969.

theory of underemployment appears in section 1, while in section 2 data on Brazil are analyzed, and some conclusions drawn which may be of some help for the setting of an employment policy in Brazil.

2. Critical Review of Previous Works on Unemployment

To state that economists started with some lag, to be concerned with the unemployment problem from the Keynesian revolution in the mid of the thirties is a contention which would not be held as entirely wrong.

It is true that the problem has been given some attention in the XIX century, yet said attention was but a by product of the theory of economic cycles. Unemployment was viewed both as a cyclical and temporary phenomenon essentially self correcting through the forces of a competitive market. That the long run unemployment was not held as a serious social problem is evidenced by the fact that the British poor laws were directed towards setting the unemployment dole so unattractive that no physically able person would ever hesitate to report to a job however low his wage might be. It was implicitly assumed that work in *normal* times was always available.

Moreover, the little attention paid to the problem was probably due to the poor statistics available at the time which did not provide a picture apt to give the problem the necessary dimension. It seems that the most revolutionary feature of the keynesian thought is that it proves that unemployment may exist which is not automatically corrected even under conditions of perfect competition in the labour market. To put it differently: even if the working class forces a reduction in wages, such reduction will not make for an increase in total employment, because it may well be that the level of employment increases only through a budget deficit (increase in government demand) or monetary expansion (increase in private demand). Keynes pointed out that in advance industrial communities the rule, rather than the exception, is a somewhat unpleasant level of employment and therefore felt that it would be necessary for the budget deficit to run permanently.

An additional contribution towards a better understanding of the nature of unemployment was put forward by Joan Robinson during the depression of the thirties. She coined the expression *disguised unemployment* to describe the activities of those who, having been laid off well paid occupations of higher productivity scratch up a living by means

of some hand to mouth occupation of less productivity as an alternative for full employment.[2] A classic example of disguised unemployment in developed countries is that of the banker in 1929 who had no alternative short of suicide other than selling apples on the curb. Mrs. Robinson described a clear case of a keynesian type of unemployment: people who have had better occupations were driven to occupations of less productivity by a decline in effective demand. Mrs. Robinson's disguised unemployment is clearly connected with the open keynesian unemployment and is therefore subject to the same remedies: compensatory fiscal policy or monetary expansion.

Somewhat later the attention of the american and european economists started to focus on the less developed countries. It was only too natural that economists should attempt to apply to the problems of the backward areas the concepts and methods they were taught at home. This has not always given rise to a happy mix of theory and reality, a situation which is eloquently criticized by Myrdal in his recently published Asian Drama.[3] One case *conventional wisdon* or transplanted theory as applied to underdevelopment countries which seems hardly happy is the choice of the expression disguised unemployment to describe the conditions of most labour in backward areas. The development of the concerns with the problem of unemployment and underemployment in underdeveloped areas, as well as of number of theoretical and empirical works written on the subject has been as follows: Some occidental economists on tour in underdeveloped areas during the forties or fifties met with essentially rural economies where 80 or 70% of population were engaged in primary activities. Most of the labour force in agriculture seemed to be most of the time markedly underemployed. There was not so much open underemployment as in the developed countries during the worst phasis of the great depression (25% of the labour force was totally unemployed in the United States in the mid of 1930); yet there was, no doubt, more unemployment than in more advanced areas during normal times, particularly in the urban areas of countries where rural exodus has reached a high level. There was also a situation in the urban areas somewhat akin to disguised unemployment – large number of people engaged in cottage industries of the handicraft type and personal services who seem to be underemployed, in terms of productivity, though they spend most of their

[2] ROBINSON, Joan. Disguised Unemployment. *Economic Journal*, June 1936, vol. 46, p. 225-237.
[3] MYRDAL, Gunnar. *Asian Drama*. Twentieth Century Fund, 1968.

time in their work. Economists from developed countries have therefore adopted the term disguised unemployment to describe said conditions prevalent particularly in rural areas.

In point of fact there are many types of underemployment in rural areas of backward countries. It therefore seems advisable to give a clear definition and description of each of said types that we may have a better understanding of what economists really mean when they refer to disguise unemployment.

Following this short digression on the systematization of economic thought let us now revert to the development of the theory on disguise unemployment and the critics that have been raised against it.

The first case is what may be called the underemployment of traditional communities where some people or group of people are iddle because they need not work. Rigorously they are not underemployed. The extreme case is that of some tribal communities where grown up people hunt and fish esporadically but do not engage in other productive occupations leaving for the women the heavier burden of work. This is related to the backward bending supply curve of labour. The argument for that curve runs as follows: In traditional communities people work only with a view to achieving a minimum standard of living and attempts at making work more efficient or raising the compensation for one unit of effort will only result in decreasing the supply of labour. The backward bending supply curve of labour has now fallen to complete discredit. Should some people still be in such a low level of civilization that they would be adicted to such vicious iddleness of disposition, the resulting loss of output per man hour would be so negligible that it would not matter.

The second case is that of *beyond the frontier* isolated rural areas which are outside the market because of lack of transportation facilities. The self supporting family works its own land as long as an adequate level of consumption obtains, but does not use all labour available because additional output will avail it nothing.

Such a situation might have existed in the states of the old far west prior to the building of railways in the early years of the XIX century and may still exist today in the underdeveloped areas but in such a small scale that is economically irrelevant. Moreover most of those agricultural

areas are not in some hidden tropical paradise; their inhabitants struggle desperately to obtain from the land a minimum subsistence level.

A third case is that of seasonal unemployment and underemployment in underdeveloped countries; people are engaged in work only during a short period in the year, in the harvest or sowing time. This is no doubt one of the main farm of underemployment in the poorer countries.

Finally a situation may exist in which part of the labour force is actually in excess during the whole year. They live in rural zones, have a share in the agricultural output, and are sometimes engaged in works related to agricultural activities. Said activities however may be better defined as creation of jobs since they actually add nothing to output. Actually it is this group that forms the excess agrarian population; it is this group that is in disguised unemployment.

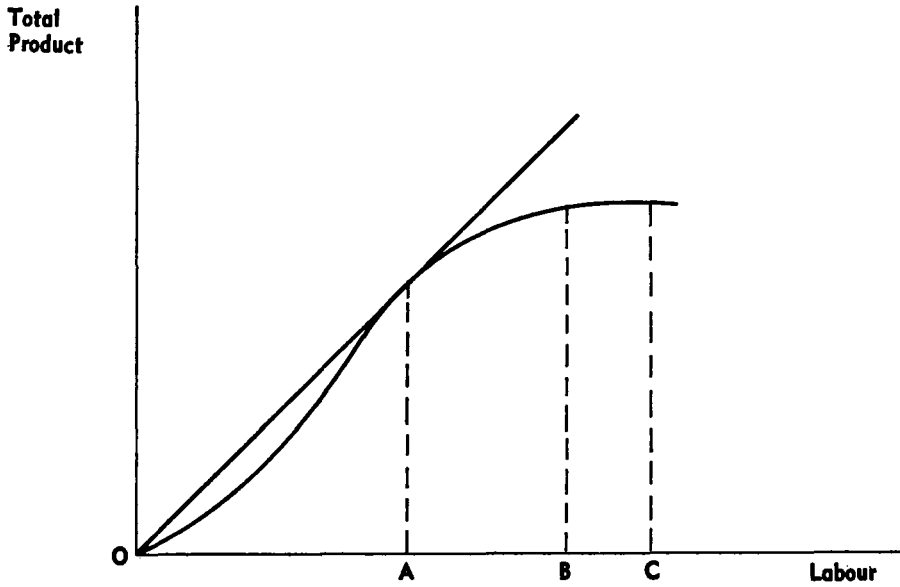
Let us now revert to the development of the theory of disguised unemployment in backwards areas. Rosenstein-Rodan was the first to refer to excess agrarian population in a paper published in 1943 where it is contended that 20 to 25 million out of 100 or 110 million people in Eastern and South Eastern Europe were partially or totally unemployed.[4] Other studies written during and after world war II have reached the same conclusion.[5] In a report submitted to the United Nations in 1951,[6] a group of experts, among whom W. Arthur Lewis and T. W. Schultz are to be found, arrived at the conclusion that in several of the Southern and South Eastern Asia, particularly India and Pakistan the excess agrarian population was at least as high as the average of the Eastern Europe before the war; that is to say about 25% of the rural labour force was entirely superflous. The report defines excess populations or disguised unemployment in agriculture as labour, whose marginal productivity is nil, *given* the amount of other input as land, capital and technological

[4] ROSENSTEIN-RODAN, P. B. Problems of Industrialization of Eastern and South – Eastern Europe. *Economic Journal.* June-September 1943, vol. 53, p. 202-211. It is this paper that gave rise to the common belief that the estimates of excess labour in underdeveloped countries amount to 25%.

[5] WARRINER DOREEN in *Economics of Peasant Farming,* Oxford University Press, 1939, contended that in Eastern Europe before World War II the excess labour ranged from one quarter to one third, while K. MANDELBAUM in *The Industrialization of Backward Areas,* Oxford, 1945, estimated that the excess rural labour in Greece, Yugoslav, Poland, Hungary, Romania and Bulgary ranged from 20 to 27%.

[6] UNITED NATIONS. *Measures for the Economic Development of Underdeveloped Countries.* New York, 1951.

level. Geometrically such a situation is portrayed in figure 1. Marginal output of labour is measured by the tangent to the curve of total output.



Given a labour force OB its marginal productivity is zero. Should more labour be added, let us say an amount of OC, the excess labour which adds nothing to output is represented by line BC (output reaches its maximun at point OB). This excess labour might even cause output to fall because when land available is overcrowded people actually get into each other's way so that no one is in a position to carry out one's work efficiently. To put it differently the curve falls beyond point B. This is highly improbable, and we shall neglect it because the negative slope of the output curve is by no means essential to the argument.[7]

The important point is that excess labour BC may be removed from rural zone to be used elsewhere with no effect upon agricultural output. It is a free factor that could be used to increase total output with no

[7] Negative Marginal Productivity might result from the fact that there are too many people in relation to the land supply. To the extent that more and more people must be fed while real output does not increase, the pre-existing labour which lived close to the subsistence level will loose strenght because of poor diet and will therefore be unable to work efficiently. It follows that additional labour will cause the output of total labour to fall down. In that case its contribution to total output is negative. This kind of negative output is not considered here since it would be very difficult to measure and isolate it from total rural underemployment even if it would be possible to measure said underemployment.

opportunity cost. Stress should be laid on the fact that the above definition of excess labour or disguised unemployment rests upon a *coeteris paribus* assumption. In point of fact should capital be substituted for labour removed from agriculture, the productivity of which is above zero, the same farm output would still obtain with a smaller labour force. This will also hold true should new techniques or cultures be adopted. In view of such deviations from the *coeteris paribus* assumption, a rigorous definition of disguised unemployment turns out to be something difficult to be put forward. Ragnar Nurkse in his well-known book [8] also assumed that there was a large disguised unemployment specially in Asia. Nurkse contends that one of the reasons why yield per workman is so low is that plots are small and widely scatered because the right of inheritance subdivides the land. To put it quite simply, a workman wastes time and looses efficiency by going from one to another widely scattered lots. According to Nurkse the production level would be kept constant should part of the labour force be assigned to new agricultural jobs, because a better organization which would be concomitant with the removal of excess population would obtain by means of the integration of the scattered plots. Since this contention parts with the *coeteris paribus* assumption, the Nurkse model of disguised unemployment gave rise to considerable confusion and controversies.

Many economists among whom Viner, [9] Haberler [10] and Schultz [11] inveight against Nurkse's disguised unemployment. Those economists who have objected to such definition will be grouped under four headings.

1. Why do not producers use more labour and less land and capital intensive techniques, and why do they not sow more labour intensive seeds? An answer was given by Ecklaus in a well-known paper [12] where he contended that, since more labour intensive techniques can be used only by increasing the capital stock, disguised unemployment lingers in underdeveloped countries probably because they do not have enough

[8] NURKSE, Ragnar. *Problems of Capital Formation in Underdeveloped Countries*. Oxford University Press, 1953.

[9] VINER, Jacob. Some Reflections on the Concept of Disguised Unemployment. *Indian Journal of Economics*, July, 1957.

[10] HABERLER, Gottfried. Critical Observations on Some Current Notions in the Theory of Economic Development. *L'Industria*, 1957, n.º 2.

[11] SCHULTZ, Theodore W. The Role of Government in Promoting Economic Growth. In: The State of the Social Sciences, University of Chicago Press, 1956.

[12] ECKLAUS, Richard. Factor Proportions in Underdeveloped Countries. *American Economic Review*, September 1955, vol. 45.

capital to give full occupation to their labour force. To put it differently, there are tecnological limitations in the production functions which reduce factors substitutabilities. If the available constelation of factors does not fit into the existing possibilities, the marginal yield of the superabundant factor would me nil. [13]

The theoretical explanation for the zero marginal productivity in agriculture has been inveighted against by Viner and others. To quote Viner: [14]

"I find it impossible to conceive a farm of any kind on which, other factors of production being held constant in quantity, and even in form as well, it would not be possible, by known methods, to obtain some addition to the crop by using additional labor in more careful selection and planting of the seed, more intensive weeding, cultivation, thinning, and mulching, more painstaking harvesting, gleaning and cleaning of the crop".

The existence of a zero or negative marginal productivity of labour has been criticized on grounds which seem to be rather right than false. In point of fact there is always some work available for excess labour in an agrarian unit. There would be difficult to fancy a situation where no work is available which could add something, however little it might be, to total output. The question may not be relevant should we part with the concept that marginal productivity of labour is nil, to follow Ellis [15] and define excess labour as the labour whose value (marginal productivity) is below its production cost. It should be noticed however that, as far as labour is concerned, the production cost is the subsistence level. Should the marginal productivity of additional labour in the agriculture sector be below the subsistence wage, this additional labour would be economically in *excess*. This is enough to explain the existence of rural underemployment.

[13] There may be some institutional features wich preclude factors and goods substitutions particularly in agriculture. Agriculturor's unawareness of alternative production methods should also be taken into account. The existing financing and marketing system may be so entirely directed towards the production of a single crop that producers who wish diversification will be hardly able to obtain financing, storing, refining, milling and other facilities necessary to their production. There may be a strong incentive to export either less labour intensive commodities such as meat, wool and wheat, or products which use labour intensively only a part of the year, such as sugar and coffee. Foreigner owned plantation producing industrial raw materials to be used by their parent companies abroad may continue to produce the same products and use the same processes although diversification was a profitable alternative.

[14] VINER, op. cit., p. 347.

[15] ELLIS, Howard S. A Note on Unemployment in Underdeveloped Countries. *Zeischrift für Nationalökonomie*, 1966, vol. XXVI.

2. If, however, labour marginal yield falls short of wage, how can it be that this labour is hired? It stands to reason that no entrepreneur seeking to maximize his profits would do it. Only *non economic* motivation, as in the case of peasant agriculture, may explain such a behaviour. The peasant household seeks to maximize *total* output because there are too many people to fed and all of them are allowed to share equally the portion of output assigned to family's consumption.[16] Any member of the family able to add up to output will be put to work since his work will increase the total output to be shared by all. The household will give occupation to all its members even though the yield of the last labour is less than his subsistence cost. The peasant family distributes work to be done among its members as it distributes available output.

3. Why do these labourers not leave their families to seek occupations elsewhere, as for example in the industrial sector or in the agriculture sector producing for sale, so as to force wages down to the same level of the marginal productivity of the peasant agriculture?

A partial answer to the question is that actually the labourers leave the rural areas where underemployment prevails-urban migration is quite common in all underdeveloped areas — and it is this growing mass of people seeking occupation in urban areas that keep wages of non qualified labour down. Wages however cannot fall down to the level of the marginal productivity of the peasant family because as it has already mentioned, its members receive the average and not the marginal yield of labour. It is this average yield that sets the minimum below which wages in the market cannot fall. The sector of agriculture producing for sale (plantation) for example, which is very important in many poor countries, would be ready to hire more labour to the point that it would add almost nothing to its production cost. It cannot however do it because the labourer can always go back to his family and share the average yield of labour. It therefore follows that the agriculture sector producing for sale is led to limit the use of labour, invest more capital per labour, adopt a more modern technology and use other means to increase labour produc-

[16] It would profit the household to maximize the average output, that is to say to attain the employment level corresponding to OA in graph 1 (reference is made to the production function of a single enterprise not of the economy as a whole). If the peasant household planned the *production* of its labour force it would stop having children as soon as point A was attained. The whole analysis however implicitly assumes that the rural family has already surpassed point A. It has already too many children; average output is already below its highest level. The question is whether or not these *too many* children must be put to work. The answer is yes.

tivity at least up to the level set by the average productivity of the *traditional* agriculture. It is clear that all this narrows the employment opportunities in the modern sector of agriculture.

It should be noticed that the average productivity in the subsistence sector of agriculture may set not only the *minimus* but the *highest* wage as well.

If urban wages of non qualified labour is above the average yield in agriculture (plus a difference to outweight the transport cost, the higher cost of living in urban areas and other disadvantages of urban medium) the outcome would be a growing flow of migration to urban areas which would tend to keep the wages at the original level.

This is precisely what lies on the core of W. Arthur Lewis thesis: Economic Development with unlimited supply of labour. [17]

Lewis contends that marginal productivity of labour in the industrial sector is *higher* than the average productivity in *traditional* agriculture but that labour is available at a lower wage because of the competition among the excess workmen for occupations in the urban industrial centers. Low wages give rise to high profits which may be reinvested in the *modern* sector to allow a high rate of growth.

Upon the other hand, it may happen that many agrarian labourers are so much tied to the land that it would be difficult or even impossible for them to leave it no matter how low their income level might be. This is a typical feature of the *small holders — big landowners complex* prevailing in most Latin American areas. The persistence of underemployment may be not only the result but an essential condition for the maintenance of an agrarian structure where small holders and big landowners prevail.

Within this framework the piece of land given to the labourer to work for his subsistence may be considered as a form of wage. This piece of land will require less labour than available and will not yield a return high enough for the subsistence of the family. [18] The small holder depends

[17] LEWIS, W. Arthur. *Economic Development with Unlimited Supplies of Labour.* Manchester, School of Economics and Social Studies, May 1954.

[18] "La modalidad más comun para ligar el campesino a la explotación es cederle una pequeña parcela para habitación y huerto". BARRACLOUGH, Solon. *La Estrutura Agraria en Siete Países de America Latina.*

therefore upon the big landowner to complement his income and this depedency is usually accompanied by other obligations stemming from his eternal indebtness. It is this dependency that gives meaning to the so-called small holder big landowner complex and helps us to understand the role of unemployment in the maintenance of said complex. To the extent that the piece of land owned by the small holder is no alternative which strenghtens the bargaining power of labour (as in the case of the family unit), the underemployment of the small holder together with his constant indebtness is the big landowner's guarantee that he will have cheap labour. This may be one of the reasons why low productive techniques are still used in agriculture *at large* in underdeveloped areas.

It should also be mentioned that there may exist strong institutional traditions that would not allow excess labour to be expelled from the land owned by a big landowner. That is to say the big landlord cannot hire only workmen whose marginal productivity equals the subsistence wage, because in that case the remaining labourers would starve to death. [19]

4. Finally there are some who contend that the problem in low income countries has to do with seasonal unemployment rather than with disguised unemployment. To put it differently it would not be possible to subtract a portion of the labour force in agriculture and still have the same output since agriculture or rather *certain cultures* always have peak periods when full employment obtains and when there may be even shortage of labour. [20]

Though there is no doubt that this is a problem not only of low productivity agriculture but of other agricultures as well, we shall dwell on it only as far as the former is concerned. There are several reasons for our doing so. The first one is that it stands to reason that the greater the specialization upon one single annual crop the more serious the

[19] LEIBENSTEIN suggested that this behaviour would not be deprived of *rationality*. Assuming that at very low levels the marginal productivity is a function of wages, a large output obtains when the whole available labour is employed at the subsistence wage. See LEIBENSTEIN H. *Economic Backwardness and Economic Growth.*

[20] It must be borne in mind that the whole issue is related to comparative statics, and therefore no dynamic consideration should be entered into the picture lest confusions should arise. If dynamic considerations were entered into our analysis the rural exodus (although the rural population still increases in absolute figure in most of the underdeveloped areas) as well as the slow increase in total output should be taken into account. The increase of total output through time arises from the increase of titled acreage, and capital stock, as well as technological progress and increase in the labour force. Those factors however are not consistent with the *coeteris paribus* assumption implicit in the disguised unemployment model.

problem. It is also easily seen that the problem will be minimized to the extent that the agrarian activities are diversified so as to produce on the same land different cultures with crops distributed among several seasons. At first sight it would appear that the possibilities of diversification are more numerous in underdeveloped countries because the tropical climate prevailing in them allows longer sowing times, multiple harvest (as rice in Asia) and greater diversification of crops as compared with the temperate climate of advanced countries with less reinfall and greater restrictions on sowing due to long winters.

It should be noted however that technology may outweight to some extent the climatic disadvantages. Tropical soils are not always fertile and may exhaust when used intensively. The tenure systems in advance countries may lead to more diversification than in underdeveloped countries particularly when the system of plantations and the small holder-big landowner complex prevails.[21] The second reason for our limiting, our concern only to low productive agriculture is that the larger the capital stock in agriculture the smaller its dependency upon labour. The demand for labour falls down during the peack periods and capital may be substituted for labour throughout the year. Moreover, some labour must be absorbed in the maintenance of equipment during the periods of low level of activities. The third reason is that the existence in advance countries of rural industries or of industries located in small towns in the hinterland may provide for alternative employment outlets for the agrarian labour during the in-between periods. In other words the differences between town and country in underdeveloped countries (particularly in Latin America) is more striking than in advance countries. In the former, once labourer goes to town he usually never comes back.

Even if the bulk of unemployment were seasonal this excess labour would represent a pratically free resource which could be used to increase national product. Given the static assumptions of the model it might not be possible to drive a significant number of underemployed agrarian labour to town. But it would be quite possible to use it during part of the year to build up capital such as roads, bridges, irrigation system (well digging),

[21] "European peasant farming has shown a high propensity to adopt cropping schemes and livestock enterprises which ensure a relatively even spread of the labour load accross the year". DOVRING, Folke. Unemployment in Traditional Agriculture. In: *Economic Development and Cultural Change*. January 1967, vol. 15, n.º 2, part I.

repair of (fences) and equipment, building of houses and so forth [22] in rural areas.

The question wheter the agrarian underemployment is seasonal or permanent, that is to say the question whether the excess in agriculture is in work hours or in number of workmen is a revelant question particularly when we wish to quantify the level of employment and set political measures to remedy it. The empirical studies that dwell on the matter deal with the general question of whether or not there is an agrarian underemployment and if so whether is is seasonal or not. We shall therefore give a brief resume of said studies.

Most empirical studies dealing with disguised unemployment fall under two categories which may be called the microeconomic approach (production function) and macroeconomic approach (demand for labour). The first method is usually direct and based on primary data collected through samples. The second one is based on secondary data.

The study on Thailand made by Mellor and Stevens is an example of the first approach. [23] The study is based on an analysis of the performance of 100 rice farms under the assumption that all they have the same production function. Labour productivity was estimated through a linear regression by least square of the form: total output $=$ a $+$ b (work input measured by number of men) where *a* and *b* are parameters. The statistical results disclosed that *b*, marginal productivity of labour, was not significantly different from zero. The approach is valid, provided the assumptions that labour is homogeneous and the production function uniform held true. The study was questioned precisely because of said assumptions.

In the second approach the demand for labour in agriculture during a given period expressed in homogeneous units is subtracted from labour available in agriculture expressed in same units. [24] The demand for labour

[22] Activities such as are included in the *communities development programs* are entered into the plans of many underdeveloped countries; Nevertheless these schemes imply some minimum capital per worker, high level of management, government policy, and a proper use of incentives.

[23] MELLOR, John & STEVENS, Robert. The Average and Marginal Product of Farm Labour in Underdeveloped Countries. *Jornal of Farm Economics*, August 1956.

[24] Available labour may be defined as the number of rural inhabitants less the number of those are either too yong or old for the rural work or who are otherwise prevented from working (housewifes, students and so forth). Assuming the working day of the adult male to be basic unit, the working day of females and children are estimated as a function of said basic unit. The available labour is then multiplied by the number of working days available during the period under analysis.

may be estimated from samples or calculated from estimates of the demand per acres or per unit of output times the number of cultivated acres, or per volume of output.

The total required labour is estimated from studies dealing with the agrarian productivity. But the required labour is a function of several variables such as quality of soil, type and age of equipment, size of the samples and so forth.

Excess labour is then equal to available men/hours minus required men/hours. It is clear that in such studies a number of arbitrary decisions must be taken. The researcher must decide what age groups should be excluded because people in the group are too young or old to work in agriculture and which group is engaged in *non productive* activities. The major problem here is to estimate the number of females who are engaged in home activities; this will depend to a large extent on whether such activities as feeding chickens, milking cows or cultivating kitchen garden are considered home or productive activities. The number of hours available per labourer will partly depend on the habits, health and other variables as number of hours of daylight and so forth.

As far as some activities are concerned females should be considered to be different from children and males, while for others the difference matters not.

Finally the total number of working days per annum must be estimated.

Two of the best known studies of this kind are those of Resenstein-Rodan for Italy and of Papelasis and Yotopoulus for Grece.[25] Roseistein-Rodan's study based on a number of assumptions related to the above mentioned problems (270 working days per annum, economically active population from 14 to 65 years old, different coeficients of labour productivity for each type of culture and so forth) suggested that there are two types of static unemployment in the Southern Italian agriculture:

a) Pure disguised unemployment which may be eliminated.
b) Partial disguised unemployment-labour hours which are *not* used during the year — the total amount of which however is not

[25] ROSENSTEIN-RODAN, Paul N. Disguised Unemployment and Underemployment in Agriculture. *Monthly Bulletin of Agricultural Economics and Statistics*, July-August 1957, vol. 6. PEPELASIS, Adam & YOTOPOULOS, Pan. A. *Surplus Labour in Greek Agriculture, 1953-1960*. Atenas, Center of Economic Research, 1962. Others studies included SAM CHÔ, Yong. *Disguised Unemployment in South Korean Agriculture*. University of California Press, 1963.

enough to compound a labour unit so that if any person in this category is withdrawn from agricultural the total output would suffer.

c) Seasonal underemployment.

Unemployment of type *a* was estimated to amount to 5% of the available manpower. The sum of *a* and *b*, the labour units of those who are required to work for 50 or less day were estimated to be 10 or 12%.

Attempts at drawing a distinction between excess labour which may be absorbed and disguised unemployment was also made by Pepelasis and Yotopoulos in their study on Grecian Agriculture. In this study a comparison was made between available and required secondary data. Assumptions were made similar to Rosenstein-Rodan's and requirements were calculated specifically for agriculture, livestock, mining, fishery and rural transport: A conclusion was reached that in Grecian agriculture there was no significant excess labour of type *a* and that underemployment was of seasonal character and that during peak periods labour was usually in want.

Generally, the conclusions arrived at in said studies are that pure static disguised unemployment in the rural sector is a matter of no importance; it is not possible to remove a significant number of labourers from the agricultural sector without a concomitant fall in output. Most idleness consists of fractions of working year of several different people. Nevertheless, as already seen the total time during which labourers are idle may be eliminated in agriculture provided they are not spatially removed, that is to say provided they are engaged in work related to local projects. It should be recalled that said policy requires a minimum of local initiatives or orientation by local governments as well as some capital formation.

3. Analysis of the Available Data on Brazil

We shall now part with the theory of underemployment and the difficulties met with by the empirical studies of said concepts to compare the data available in Brazil, in an attempt to measure the size of unemployment. The only information at aggregate level, or level of employment and underemployment in Brazil are to be found in the National Research as per a Sample of Households (P.N.A.D.) which started to publish data

on population and manpower as from 1968.[26] The research gathered information in 17 states and regions in the Northeast, East and South which in 1960 accounted for more or less 92% of total population. Information started to be collected as from the last quarter of 1968.

The estates are grouped into 5 regions; to wit:

Region I — Rio de Janeiro and Guanabara

Region II — São Paulo

Region III — Paraná, Santa Catarina and Rio Grande do Sul

Region IV — Minas Gerais and Espírito Santo

Region V — Bahia, Sergipe, Alagoas, Pernambuco, Paraíba, Rio Grande do Norte, Ceará, Piauí and Maranhão.

The data which will be discussed in what follows concern the third quarter (July-September) of 1968. The first ones cover all regions. Though the previous theorical discussion dwelled on agriculture we shall deal first with the non agrarian labour[27] because the information available for it is more detailed.

Table 1 shows the rate of open unemployment of non agrarian labour. Open unemployed labour is to be understood as covering people not engaged in work during the week in reference (the week before the one during which the P.N.A.D. data were collected) and who had not secured a steady occupation from which they were temporarely absent-

Table 1

Non Rural Unemployment
1968

REGION	I	II	III	IV	V	TOTAL
Open unemployment	.28	2,9	4.5	4.7	5.4	4.0

[26] See O'Brien, F. S. *The Brazilian Population and Labour Force in 1968*, for a detailed analysis of the P.N.A.D. data.

[27] Non rural activities include forestry, mining, hunting, fishery, manufactures, building, public utilities, commerce, service, transport, communications, social services, public administration and so forth. There is no exact correspondence between these groups and the urban labour. Nevertheless, since the first three activities which are basically rural account for only a small fraction of rural labour, these groups measure the urban labour force with enough accuracy.

ed because of vacations, leave of absence, strikes, bad weather etc., and who had made serious efforts to secure occupation in the last two months.

It is to be noticed that the rate of non agrarian underemployment is very low as compared with the rate prevailing in the United States during the last years of intensive economic activities and significantly lower than the rates disclosed by other studies on underdeveloped countries.[28] Why is the Brazilian unemployment rate so low? We shall point out only some possible causes. The first and perhaps most important cause is that in Brazil the services sector is greatly flexible as far as absorption of labour is concerned; many people find working opportunities in small transactions or services, as shoes polishing, orange and shaving blads selling and so on. It might happen that we in Brazil have a large disguised *urban* unemployment and a reduced open unemployment.[29] The second cause is that unemployed labour in Brazil is strongly induced to engage in work in the tertiary sector even when the compensation is low, because there is no well organized system of unemployment assistance to the unemployed[30] nor any efficient agency to seek occupations for him.[31] To put it differently it is not to the advantage of any one to declare that one is unemployed. Since there is no advantage in telling the truth, it might happen that one would declare, for pride or security sake, that one is engaged in some kind of work rather than to tell candidly that one is unemployed.

In an attempt to measure more accurately the under utilization of non agrarian manpower we may include an additional category which may be called visible underemployment covering both, those who are engaged in part time jobs (less than 40 hours per week) despite the fact that they would rather be engaged in full time jobs, and those usually

[28] The unemployment rate in developed countries is estimated to range from 10 to 15%. See DZIADEK, Fred. *Unemployment in the Less Developed Countries.* USAID, December, 1966.

[29] This urban underemployment is very similar to the one detected by JOAN ROBINSON in England in the thirties. Nevertheless it may happen that this is essentially a *structural* problem of underdeveloped countries rather than a cyclical phenomenon. In that case the remedy would not be the keynesian compensatory fiscal policy.

[30] Most of the urban labourers are new comers and had no experience with urban work where they have the rights of the *Fundo de Garantia de Tempo de Serviço.*

[31] In 1968 the 19 Agencies of the Ministry of Labour helped only 40.000 unemployed while P.N.D.A. estimated an average of 700.000 unemployed in the five regions for the third quarter of 1968. In the Northeast where the highest unemployment rate prevails the Ministry had only one agency, SALM, Cláudio. Op. cit., p. 2.

engaged in full time jobs but who were during the week in reference engaged in par time job for *economic reasons.*[32] Table 2 discloses the percentages of visible underemployment (the above mentionel category as related to non agrarian manpower).

Table 2

Non Rural Underemployment
1968

REGION	I	II	III	IV	V	TOTAL
Visible underemployment	3.4	3.6	7.6	7.1	12.6	7.0
Visible under and unemployment	6.2	6.5	12.1	11.9	18.0	11.0

Those figures give a clearer picture both, of the degree of under-utilization of manpower in non agrarian sector, and of the regional differences. While the national unemployment rate varied on average between 70 to 135%, the rate of unemployment coupled with visible underemployment varied on average between 56 to 164%.

Stress should be laid on the fact that no internally consistent measure of underutilization of man power has been developed. Labourers out of work were added to those engaged in part time jobs, despite their wish to work more time at the going wage. When underemployed is added to unemployed labour the total of wasted working time is overestimated. Only the number of underused *labourers* was measured. No account has been taken of those who, although engaged in full time or over time occupations, yield a low marginal output perhaps lower than the sub-sistence minimum. Those are labourers who are closer to the pure disguised unemployment situation discussed above.

No entirely satisfactory measure of said low productivity labour is available for the non agrarian sector, but attempt may be made to reach a rough aproximation on the basis of data collected by P.N.A.D. P.N.A.D. discloses informations on wages and it is therefore possible to

[32] The P.N.A.D. seems to take for *economic motive* the fact that no additional work is wanted.

isolate the lower income classes in the group of self employers and individual business comprising those who earned less than Cr$ 50 per month, as representing the disguised non agrarian unemployment.[33] This low income group is related to the total number of *self employers* in table 3.

Table 3

Non Rural — Disguised Unemployment 1968

REGION	I	II	III	IV	V	TOTAL
Employeres and autonomous labourers earling less than Cr$ 50,00	8.3	7.1	10.4	24.9	41.8	23.4
Total						

It is admitted that said measure of low productivity occupations of this class of labourer is far from accurate. It tends to overemphasize the problem in the Northeast and is likely to underemphasize it in the East and South. Nevertheless it will be added to the open unemployment and visible underemployment with a view to extending as far as possible the scope of the measure of the underutilization of manpower in Brazil.[34]

[33] We are forced to use this arbitrary figure because P.N.A.D. uses thes same income classification for all regions; the first class covers monthly incomes up to Cr$ 49.99, the second covers incomes from Cr$ 50.00 to 149.99 which would lead us well above the limits of works of very low productivity. It is clear that Cr$ 50.00 stands for different living standards in the Northeast and Central South. Moreover, the fact that there is in the Northeast a larger number of autonomous labourers earning less than said income should not be a surprise. Nevertheless Cr$ 50.00 amounts to half the average minimum wage prevailing in the country in 1968 (the minimum wage ranged from Cr$ 76.80 to 129.60 and therefore the median of half the minimum wage was Cr$ 51.00).

[34] The coupling of the last group with the visible underemployment may involve double counting. To put it differently, autonomous labourers earning less than Cr$ 50.00 a month may be engaged in part time jobs. For simplicity's sake let it be assumed that all autonomous labourers engaged in part time jobs earned less than Cr$ 50.00 a month. In region III, the two groups are roughly equal and this explains why table 4 discloses the same results as table 2 for said region. Double counting could also be avoided and the autonomous labourers problem circumvented, if only workmen unable to secure full time occupation and autonomous labourers earning less than Cr$ 50.00 a month were accounted for.

The results are shown in table 4.

Table 4

Open Unemployment, Visible Underemployment and Disguised Unemployment in non Rural Sectors

REGION	I	II	III	IV	V	TOTAL
Unemployed + Part tima + Autonomous labour earling less than Cr$ 50,00 / Non rural labour force	6.5	6.8	12.1	14.8	26.6	13.6

It should be noticed that table 4 shows no estimate of disguise unemployment (low output per man hour engaged in full time work) either for the group *employees* or for the group *non earning members of family*. [35] The last group accounts for only 3,5% of non agrarian labour, but may have a significant content of disguised unemployment. [36]

Nevertheless even if the degree of arbitrariness existing in the percentages appearing in table 4, which in some instances overestimate and in other underestimate the actual conditions, is taken into account, and even if allowance is made for the fact that the categorias appearing in P.N.A.D. do not fully agree with the theoric concepts discussed above, it still remains that an estimate of 13,6% is, as first approximation, a better indicator of the relevance of the problem of the underutilization of urban manpower than the initial rate of 4%.

Let now a brief analysis of the data relating to unemployment and underemployment in Brazilian agriculture be made. Table 5 slows the open unemployment rates as per the P.N.A.D. research which has been

[35] No similar comparison may be made for the group *employers* because the first class of income for said group covers incomes up to Cr$ 130.00 a month and would cover all those earning up to one minimum wage in the whole country excepting Rio and São Paulo.

[36] In the above quoted study CLÁUDIO SALM considered 50% of the number of the "membres of a family" who earned no income at all to be a rough estimate of the level of disguised unemployment and entered that number into the estimates of underemployed. For this reason as well as other minor discrepancies, the results obtained by him are somewhat higher than those appearing in this paper. For example he estimated unemployment in the Northeast to be 28,1% instead of 26,6%.

estimated according to the same criteria as used in connection with non agrarian unemployment.

Table 5

Rural Unemployment

REGION	I	II	III	IV	V	TOTAL
Rural unemployment Rural labour force	0.5	1.0	0.5	0.6	0.4	0.5

These rates show that there is practically no open rural nemployment in Brazil. Is that really true? It might be that all underutilization of labour in agriculture assumes the form of visible or disguised underemployment as defined above. It might also happen that there was a significant seasonal unemployment in periods other than the third quarter of the year (July-September) which is a period of more intensive activities. Furthermore it might be that there was a seasonal unemployment in all periods, but that unemployed labour was not reckoned as pertaining to the labour force because they had not reported to occupations in depressed periods since they knew there was no work available.[37] Unfortunately nothing can be said about those possibilities since the P.N.A.D. does not give the necessary information; P.N.A.D. however gives an additional information on rural unemployment; the number of working hours.

Table 6 shows the percentage of agrarian labour that works less than 35 hours per week.

Table 6

Rural Labour Working Less Than 36 Hours a Week

REGION	I	II	III	IV	V	TOTAL
Percentages	6.2	8.6	13.5	9.4	17.7	13.8

[37] It must be borne in mind that only persons who actively sought an occupation during the two preceeding month were included in said category. This may exclude rural labour which was unemployed during long periods of the year.

Since this table does not intend to measure the size of underemployment, the data appearing in it are not coupled with those of table 5 to have an estimate of the rate of agregate underutilization of labour in agriculture. First of all the reasons why those people worked less than 35 hours per week are unknown. Nothing is known about whether they were engaged in other activities that is to say whether they were attending school, taking care of the home, and so on. Nor it is known whether or not they were voluntarily engaged in part time jobs, and therefore nothing can be said about whether they would be willing to work more at the going wages. Moreover nothing is known about the marginal productivity of the people who were engaged in part and full time jobs.

This lack of information notwithstanding, the fact that part time work varies to such an extent from one region to another, and that it is so significant, particularly in the Northeast, suggests that part time work is not entirely voluntary and must be related to the economic conditions of excess labour. [38]

CIDA report [39] tried to follow the macroeconomic approach (labour required) in an attempt to estimate the level of disguised unemployment in Brazilian agriculture. Assuming that disguised unemployment exists, the ratio held as desirable was not that of 4,23 ha per man, which was the average for the family size farm as disclosed by the 1950 census, but that of 8,46 ha per man. It was found that, whereas family size farms and lands owned by small landholders appeared to have an excess labour of 2,884 thousand labourers, medium farms and land owned by big landlords could absorb 18,521 thousand workmen. If data of 1960 census were used in the same way CIDA report used the data of the previous census, if would be seen that conditions have worsened. The excess labour would apparently amount to 2,898 thousand of labourers in lands owned by small landowners and to 2,493 thousands in family size farms. Thus whereas in 1960 more than 5 million labourers did not own enough land to provide them will full employment opportunities the medium size farms could absorb only 6,200 thousands additional workmen and the big landlords 13,737.

[38] One indicator of said condition is the large relative share of small landholders in the Northeast as compared with the rest of Brazil. The 1960 census disclosed that 54% of the rural labour force worked in plots with less than 5 ha, while the percentage for the rest of Brazil was 11%. Plots with less than 10 ha were considered to be small landholdings as far as the states of Amazon, Mato Grosso, Acre and Territories of Roraima and Amapá were concerned.

[39] *Posse e Uso da Terra e Desenvolvimento Sócio-econômico do Setor Agrícola.* CIDA, p. 409.

4. Conclution

These data are given only as a means of illuminating the subject issue. This should not be held as an attempt to back any Land Reform Project. This paper's only purpose is to analyse the Brazilian labour market conditions on the light of such theoretic models as have been developed and used in other countries. Should theory coupled with facts fail to back a good analysis, the failure would be due to the theory shortcomings or, what is more important, to lack of relevant information in Brazil. No employment policy may be carried into effect unless more facts are known about the existing types of labour underutilization in Brazil.

It should be finally emphasized that although the static model submitted here may appear less important than a dynamic model embodying changes in technology and capital, and although the static features of the model may appear less relevant thant other features, the fact still remains that disguised unemployment is a reality.

It is true that in a dynamic sense we are all underemployed – we could all work more – and that in the future we shall all produce more to the extent that we are provided with more capital and knowledge.

Nevertheless Nurks revolutionary thesis does not rest on the contention that much labour would be shifted from country to city should government invest with a view to changing the existing agrarian techniques. This would be obvious. Quite on the contrary, Nurkse's contention is that this shift can be put into effect with no investment at all and that the existing static excess labour means potential disguised savings. [40]

[40] GODFREY, Martin. *Measuring the Removable Surplus of Agricultural Labour in Low – Income Countries*. University of Manchester [unpublished].