



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

PROCEEDINGS OF THE  
TENTH  
INTERNATIONAL CONFERENCE  
OF  
AGRICULTURAL ECONOMISTS

HELD AT THE  
LALITHA MAHAL, MYSORE  
INDIA

24 AUGUST — 3 SEPTEMBER 1958

AGRICULTURE  
AND ITS TERMS OF TRADE

LONDON  
OXFORD UNIVERSITY PRESS  
NEW YORK TORONTO  
1960

# RURAL POPULATION MOVEMENTS IN RELATION TO ECONOMIC DEVELOPMENT

KEITH O. CAMPBELL

*University of Sydney, Australia*

THE proportion of the population engaged in agriculture is one of the best indices of the stage of a country's economic growth, especially if appropriate allowance is made for differences arising from international trade. Speaking generally, the rural labour force in the under-developed countries today often exceeds 70 per cent. of the total working population, whereas in the more advanced countries it is usually well below 15 per cent.

The decline in the relative importance of the rural work force and its counterparts, industrialization and urbanization, have long been recognized as characteristic features of economic progress.<sup>1</sup> In the early thirties A. G. B. Fisher drew attention to the economic significance of movements of population from rural to manufacturing and service industries.<sup>2</sup> Soon afterwards, Colin Clark assembled statistical evidence from many countries showing clearly that a decline in the proportion of the population engaged in agriculture was associated with rising income *per caput*.<sup>3</sup> Such associations can be demonstrated for the same country over time as well as between different countries at a given point in time.<sup>4</sup>

The rate of farm population exodus tends to fluctuate during the course of a country's economic growth. In the early stages of

<sup>1</sup> Kuznets, in a recent study of trends in the industrial distribution of the labour force in 28 countries over periods usually in excess of 40 years, has shown that in every country, with the exception of Yugoslavia and India, the share of the agricultural sector in the labour force declined. See Simon Kuznets, 'Quantitative Aspects of the Economic Growth of Nations. II. Industrial Distribution of National Product and Labour Force', *Economic Development and Cultural Change*, vol. v, No. 4 (July 1957), Supplement, p. 27.

<sup>2</sup> A. G. B. Fisher, *The Clash of Progress and Security*, London: Macmillan & Co., 1935, ch. ii.

<sup>3</sup> Colin Clark, *The Conditions of Economic Progress*, London: Macmillan & Co., 1940, chs. ix and x. These relationships have been amply confirmed by later work, e.g. E. M. Ojala, *Agriculture and Economic Progress*, London: Oxford University Press, 1952, and Kuznets, *op. cit.*

<sup>4</sup> Recent criticisms of the Clark-Fisher thesis, stressing in particular the extent of tertiary industries in under-developed countries, do not abridge the validity of the original thesis as it applies to primary industries. See P. T. Bauer and B. S. Yamey, 'Economic Progress and Occupational Distribution', *The Economic Journal*, vol. lxi, No. 244 (December 1951), pp. 741-55, and S. C. Triantis, 'Economic Progress, Occupational Redistribution and International Terms of Trade', *ibid.*, vol. lxiii, No. 251 (September 1953), pp. 627-37.

economic development such migration cannot be great in proportion to the total population because of the relative insignificance of the non-agricultural sector. As economic growth proceeds, the rate of movement of farm people to non-farm pursuits begins to rise. Eventually, when secondary industries have become firmly established, such migration assumes considerable importance relative to both the agricultural and the total population. Finally, urbanization may proceed to a point where rural-urban transfers become small in absolute volume and in relation to total population.<sup>1</sup>

The movement of people out of agriculture in the process of industrialization is not a one-way traffic. Early in the process particularly, there is a significant flow of people from the cities back to the land. Published statistics of population transfers from rural to urban areas almost invariably represent net movements. This is but one of the many statistical lacunae which beset the study of internal migration. Available evidence suggests that, even in relatively advanced economies, movement into agriculture from urban areas can be significant both in periods of depression (when the inward movement may actually exceed the outward movement), as well as in periods of prosperity.<sup>2</sup> In the advanced countries, agriculture still seems to offer an irresistible attraction to some urban dwellers. Hence the two-way flow is likely to continue indefinitely.

Though rural-urban migration is undoubtedly the most important form of population movement from the standpoint of world economic development today, other types of migration involving farmers have been important in the past. In countries where there have been unexploited land resources (e.g. most of the countries of the New World and Oceania) or where such opportunities still exist (e.g. Brazil), there may be considerable migration within agriculture itself. This type of rural migration can, in fact, be traced right back to the beginnings of history. Movement of agriculturists to new lands usually comes early in the process of economic growth. Later in the process, transfers of this kind are discouraged, primarily because the costs of new settlement increase. This may be attributed to the fact that the best land is already occupied, to the higher capital

<sup>1</sup> Between 1939 and 1951 the rural districts of England and Wales actually gained population relative to the urban areas. See Brinley Thomas, 'The Changing Pattern of Internal Migration in Great Britain, 1921-51', *Proceedings of the World Population Conference*, 1954, vol. ii, p. 662.

<sup>2</sup> Bellerby has presented some interesting evidence of the simultaneous ingress and egress of rural population, especially in the Canadian prairie provinces. He concludes that the misfortune of Canadian farmers is not lack of mobility out of farming but rather excess of mobility into farming when the trend is landwards. See J. R. Bellerby, *Agriculture and Industry: Relative Income*, London: Macmillan & Co., 1956, p. 140.

requirements associated with improving technology, and to the scarcity of rural labour arising from increasing industrial opportunities. Moreover, settlers in later years are usually not prepared to undergo the hardships of the pioneers of an earlier generation.

Reinforcing the movement of agriculturists to new farming regions and the movement from rural to urban areas within a country during the course of economic development are the parallel international migrations of a similar kind. As part of the great international population movements of the nineteenth and early twentieth centuries, many depressed farmers from western Europe moved to North America, Oceania, and South Africa to continue in their existing occupations or to enter secondary or tertiary industries. There have been similar but smaller population transfers in other parts of the world. In most cases these movements probably did not result in any significant improvement in the economic conditions of agriculture in the countries of emigration, but the migrants usually improved their own lot substantially.<sup>1</sup> The population exodus did ultimately tend to worsen the lot of European farmers as the terms of trade became unfavourable because of the increased flow of cheap food resulting from the expansion of agricultural settlement and the accompanying technical progress in the countries of immigration.<sup>2</sup>

Even though there are opportunities (albeit more circumscribed ones) for further agricultural development in these countries today, it is significant that, at the stage of economic development now reached, immigrants after World War II have gone predominantly to non-agricultural occupations, even though in a great many cases they have come from rural areas in their countries of origin. This has happened in Canada and Australia, despite a positive government policy of recruiting migrants for rural work.<sup>3</sup> In view of the limited scope for new agricultural settlement today and the prevailing national attitudes towards international population redistribution, the discussion which follows is confined to internal rural-urban population transfers.

The necessity for labour to move out of agriculture to other sectors of a developing economy can be attributed to three basic forces (1) population growth, (2) the relatively low price and income elasticities of demand for food (which mean that the growth in demand for food is largely limited to that required by population

<sup>1</sup> In Ireland, however, there was a definite improvement. See Brinley Thomas, *Migration and Economic Growth*, Cambridge: Cambridge University Press, 1954, p. 77.

<sup>2</sup> *Ibid.*, p. 197.

<sup>3</sup> D. Corbett, 'The Economic Objectives and Achievements of Immigration Policy in Canada since 1946', *Proceedings of the World Population Conference*, 1954, vol. ii, p. 349.

growth), and (3) technological progress in agriculture. In the more advanced economies, where the rate of increase of agricultural productivity is high relative to the rate of growth of the aggregate demand for farm products, these forces inevitably tend to reduce farm prices, to cause agriculture's terms of trade to become more adverse and to reduce the earnings of resources employed in agriculture.

The burden of adjustment falls upon the rural work force, where it is reflected in depressed earnings to agricultural workers as compared with earnings in other sectors of the economy.<sup>1</sup> The problem has been intensified in many countries by the fact that the form of technical advance has generally meant increasing substitution of capital for labour, a process which has been further stimulated as a result of farm wages being relatively higher than the costs of other farm inputs. These forces tending to produce low labour returns in agriculture, to foster farm depopulation, and to reduce the relative importance of the agricultural sector have been just as active in the large agricultural exporting countries as in the so-called industrial countries.

Despite the clear need for a relative reduction of the rural population as a concomitant of economic development, it has been general experience that the appropriate population adjustments have rarely proceeded fast enough to enable labour in agriculture to achieve incomes comparable with those available in other occupations. The very substantial differentials which have appeared between earnings in rural and non-rural occupations, whether measured in terms of income *per caput* or wage rates, tend to persist even in the long run. The nature of the barriers which impede migration out of agriculture and foster the persistence of these income differentials is discussed in Professor Bićanić's paper.

The exact course of the differentials over time varies widely between countries but there is some evidence that rural-urban income and wage differentials tend to narrow in the course of economic growth.<sup>2</sup> On the other hand, Kuznets, after examining available

<sup>1</sup> The terms of trade are but one of a number of factors affecting *per caput* earnings and the marginal productivity of labour. But it is the relative earnings of factors employed rather than the terms of exchange of the commodities produced in the different sectors which are the relevant criterion for structural adjustments in the course of economic growth. Consequently attention is focused on relative earnings in this paper. On this point, see J. N. Lewis, 'Trends in Agriculture's Terms of Trade', *Australian Journal of Agricultural Economics*, vol. ii, No. 1.

<sup>2</sup> See Bellerby, *op. cit.*, ch. xiv, and Kuznets, *op. cit.*, p. 37. Kuznets would seem to have reversed his position on this point since 1955. Cf. Simon Kuznets, 'Economic Growth and Income Inequality', *American Economic Review*, vol. xlv, No. 1 (March 1955), pp. 7-8.

statistical evidence from some eighteen countries during the first half of the twentieth century, has concluded, more generally, that there is no simple and consistent relation between the rates of growth in income *per caput* and inequality among sectoral levels of income per worker or *per caput*.<sup>1</sup> He suggests that 'in some phases of development and in some countries high rates of economic growth may be accompanied by a great reduction in such inequality; in other phases and countries, high rates of growth may be associated with maintenance or even increase in inter-sectoral inequality'.

Cross-sectional studies, not unexpectedly, reveal great diversity between countries in the degree to which agricultural income per worker is depressed below income per worker in other sectors of the economy<sup>2</sup>. For instance, in the United States, the differential has been wide; in France it has been very much narrower. However, even with perfect mobility, exact equality of earnings *per caput* in different sectors of the economy would not be expected. For instance, there may be a higher cost of living under urban conditions, and there may be intangible satisfactions associated with rural living.<sup>3</sup> The hypothesis that the income differential may be associated with significant differences in the skills required in different occupations has received little support from empirical studies.<sup>4</sup>

Bellerby has attempted to throw some light on the size of the equilibrium differential in countries at different stages of development and at different phases of the trade cycle.<sup>5</sup> He has concluded that in 1938 the average 'incentive income' in agriculture was of the order of 60 per cent. of urban income and that rarely did the ratio exceed 75 per cent. Even in an under-developed economy there may be a substantial gap between wages in industry and earnings in subsistence agriculture.<sup>6</sup>

<sup>1</sup> Kuznets, 'Quantitative Aspects of the Economic Growth of Nations', op. cit., p. 55.

<sup>2</sup> e.g. *ibid.*, pp. 48-49, and T. W. Schultz, *The Economic Organization of Agriculture*, New York: McGraw Hill, 1953, pp. 288-93. See also J. D. Black, 'The Problem of Surplus Agricultural Population,' *International Journal of Agrarian Affairs*, vol. i, No. 1 (October 1939), pp. 16-19.

<sup>3</sup> Nathan Koffsky, 'Farm and Urban Purchasing Power', in *Studies in Income and Wealth*, vol. xi (1949), pp. 153-79, and discussion, pp. 179-219; and Bellerby, op. cit., ch. xv.

<sup>4</sup> See D. G. Johnson, 'Comparability of Labor Capacities of Farm and Non-Farm Labor', *American Economic Review*, vol. xliii, No. 3 (June 1953), pp. 296-313, and J. R. Bellerby, 'Comparisons of Skill, Endurance, and Experience Required in Agriculture and Industry', *Farm Economist*, vol. vii, No. 1 (1952), pp. 7-15.

<sup>5</sup> Bellerby, *Agriculture and Industry: Relative Income*, op. cit., ch. xvi.

<sup>6</sup> W. A. Lewis, 'Economic Development with Unlimited Supplies of Labour', *Manchester School of Economic and Social Studies*, vol. xxii, No. 2 (May 1954), p. 150.

Rarely does the process of population readjustment to the dictates of economic progress occur uniformly over an entire country. In the relatively advanced countries such as the United States, Canada, and the United Kingdom, rural areas are to be found where the standard of living falls appreciably below that of the national average.<sup>1</sup> There is evidence that such disparities in interregional adjustment increase as economic development proceeds.<sup>2</sup> Moreover, the rate of population egress from agriculture is often faster in areas where earnings *per caput* are higher than in the poorer areas. Australia and New Zealand are probably unique as regards the relative absence of marked regional divergences in agricultural progress. The precise reasons why this has happened have never been adequately explored, but I suspect that in Australia it is connected with the rate of industrial development in relation to population growth.<sup>3</sup> Ordinarily, the problem of depressed rural incomes resulting from the inadequate redistribution of rural population is as important an issue of agricultural policy in the advanced countries as in the less developed countries.

The overall pattern of population growth of a country has an important effect on the rate of migration out of agriculture. In a historical context, it is difficult to disentangle this variable from the effects of industrialization. The proportion of the population engaged in agriculture and the rate of movement out of the industry is highly correlated with the stage at which a country finds itself in the demographic cycle initiated by falling death rates and subsequent falling fertility rates; and this process itself seems to be determined by the rate of urban-industrial progress.<sup>4</sup>

It does appear that, with notable exceptions such as in India and Egypt, the forces operating to reduce death and fertility rates from the levels characteristic of pre-industrial societies, work more slowly in a rural than in an urban environment. The differential between rural and urban birth rates tends to persist into relatively advanced economies, being usually exaggerated in those regions which are

<sup>1</sup> See Schultz, *op. cit.*, chs. 10 and 18, and D. G. Johnson, 'Functioning of the Labor Market', *Journal of Farm Economics*, vol. xxxiii, No. 1 (February 1951), pp. 75-85.

<sup>2</sup> Schultz, *op. cit.*, p. 159, and G. Myrdal, *Economic Theory and Under-Developed Regions*, London: Duckworth, 1957, p. 30.

<sup>3</sup> It is significant that Australian economic historians are now suggesting that Australian economic growth even in the second half of the nineteenth century should be reinterpreted in terms of urbanization rather than in the customary terms of rural development. See N. G. Butlin, 'The Shape of the Australian Economy, 1861-1900', *Economic Record*, vol. xxxiv, No. 67 (April 1958), pp. 10-29.

<sup>4</sup> See, e.g., F. W. Notestein, 'Economic Problems of Population Change', *Proceedings of the Eighth International Conference of Agricultural Economists* (1952), pp. 13-31.



relatively depressed.<sup>1</sup> As a consequence of this fertility differential, the overall effect of population growth is usually to worsen the relative position of the agriculturist, and to intensify the need to move people off farms.

Until the post-war upsurge in fertility rates occurred in the advanced economies,<sup>2</sup> stress was frequently placed on agriculture's role as a source of population for urban areas, where the birth rate was frequently insufficient to ensure replacement of the existing population. A differential birth-rate itself can, of course, necessitate inter-sectoral migration, irrespective of economic progress. Any situation which casts agriculture in the role of a population reservoir for other sectors of the economy, imposes an added burden on the farming community through the immobilization and eventual loss of capital invested in the upbringing of children, who later enter non-agricultural occupations.

Though the secular economic forces already described are the mainspring of rural-urban migration, the rate of such migration at any given period of time can be profoundly affected by short-term economic fluctuations, by wars or threats of wars, and by shifts in the balance of world trade. Moreover, this migration can be hastened by governmental intervention (such as the fostering of secondary industries by tariffs and quantitative import controls in Australia); or the process can be retarded through various devices of agricultural protectionism (such as the American policy of high support prices) or through direct discouragement by metropolitan countries.

The pattern of population transfers between the rural and urban sectors in the course of the business cycle is of particular significance. The movement of workers from agriculture is usually greatly impeded and often reversed in periods of depression as a result of the appearance of unemployment and the retardation of growth in the industrial sector.<sup>3</sup> In prosperity, on the other hand, the rate of rural

<sup>1</sup> Demographers sometimes assert that fertility differences between the rural and urban sections of the population diminish over time, but the evidence is conflicting. See *Proceedings of the World Population Conference, 1954*, Summary Report, p. 44. There is, as yet, no evidence of any narrowing of the fertility differential in Australia.

<sup>2</sup> See J. S. Davis, 'The Population Upsurge and the American Economy 1945-80', *Journal of Political Economy*, vol. lxi, No. 5 (October 1953), pp. 369-89.

<sup>3</sup> In an open economy, as a depression proceeds, industrial development is sometimes encouraged as a result of a fall in wages and lower prices of raw materials, assisted in some cases by governmental intervention. This has, for instance, been the experience in Australia and New Zealand. Industrial growth of this type doubtless helped the movement of people out of Australian agriculture in the late thirties. See H. Burton, 'The Growth of the Australian Economy', in C. H. Grattan (ed.), *Australia*, Berkeley: University of California Press, 1947, p. 166, and C. G. F. Simkin, *The Instability of a Dependent Economy*, Oxford: Oxford University Press, 1951, p. 63.

depopulation usually accelerates. Even when the terms of trade move decidedly in favour of agriculture, and there is little or no evidence of the presence of excess workers in the industry (as was true of Australia in the early fifties), the rural sector may have great difficulty even in retaining its existing work force.<sup>1</sup>

There has been a great deal of discussion as to whether such rural-urban population transfers as do occur are activated by the push of conditions in agriculture or the pull of alternative occupations.<sup>2</sup> But the fact that the income differentials are frequently so wide, coupled with the observed trend of rural population movements in prosperity and depression, suggests that such population movements are primarily a function of industrial opportunities. This is not to say that in some circumstances the push factors, such as mechanization, drought, and oppressive tenure conditions, do not operate to foster rural mobility; but I do not think they are as important in this area as in other types of human migration.

A policy of reducing the number of farmers as a means of improving the relative incomes of those that remain, is destined to be frustrated unless concurrent attention is given to the creation of industrial and other opportunities.<sup>3</sup> This may be necessary even when a state of full employment prevails. The presence of industrial opportunities close to areas of surplus farm population doubtless facilitates mobility. Schultz, in particular, has stressed the locational matrix as a factor in economic development.<sup>4</sup> But in some countries, such as Australia, with a few highly concentrated industrial areas, population transfers out of agriculture do not seem to have been unduly hampered on this account. Social and cultural factors are probably more important than economic ones in explaining varying experiences in this area.

We may conclude that adjustment of the rural population to the secular economic forces implicit in economic growth is generally too slow to enable any orthodox equilibrium between rural and urban earnings to become established. However, if it were not for the population transfers that do take place, agricultural earnings and agriculture's terms of trade would clearly be relatively worse in most

<sup>1</sup> K. O. Campbell, 'Current Agricultural Development', *Economic Record*, vol. xxxii, No. 62 (May 1956), pp. 129-34.

<sup>2</sup> e.g. United Nations, *The Determinants and Consequences of Population Trends*, New York, 1953, pp. 124-5, and J. D. Black, 'Factors Conditioning Innovations in Agriculture', *Mechanical Engineering*, vol. 67, No. 3 (March 1945), pp. 181-2.

<sup>3</sup> One is reminded here of P. H. Johnstone's provocative article entitled 'Somewhere Else', *Land Policy Review*, vol. ii, No. 6 (1939), pp. 1-9, dealing with the situation in the United States at that time.

<sup>4</sup> Schultz, op. cit., ch. 9.

countries than they are today.<sup>1</sup> It is also clear that relative prices do not effectively redistribute the work force between rural and urban occupations. The key to the transfer problem lies in the reduction of barriers to mobility and the availability of industrial opportunities. In so far as agricultural productivity rises faster than demand, agricultural adjustment problems seem to be the inevitable end-product. Yet, were it not for substantial rises in agricultural productivity, economic progress on a broader plane would be greatly retarded.

The fact remains that rural population adjustments have been achieved more easily in some countries than in others. Experience suggests that the facility with which the size of the rural work force is adjusted in conformity with the demands of economic progress is largely determined by the relationship between the rate of population growth and the rates of growth of the various industrial sectors. If an appropriate balance is achieved, the changes in the employment structure can be achieved not by moving adult workers out of agriculture, but simply by shifts by new generations of workers. In such circumstances, the absolute number of rural workers may rise whilst the proportion of rural workers in the total work force is falling. Such was the fortunate experience of the United States up till 1910 and Australia up till World War II.<sup>2</sup> When the absolute number of agricultural workers ultimately ceases to rise, the agricultural industry may be left with an unbalanced age structure. This, again, has been Australian experience in the past decade.

The difficult social and political problems arise when the transference of large numbers of mature workers and their families out of agriculture becomes necessary. This may occur in an advanced economy if population growth is much slower than the rate of rise of income *per caput*. It may also occur in a relatively under-developed country if the rate of economic growth is very rapid.

The foregoing remarks have been mainly concerned with rural population movements in countries which are at a relatively advanced

<sup>1</sup> Heady has recently emphasized that, in the short run at least, removal of surplus farm population in the United States might well increase output and worsen the relative position of the remaining farmers. See E. O. Heady, 'Progress in Adjusting Agriculture to Economic Change', *Journal of Farm Economics*, vol. xxxix, No. 5 (December 1957), pp. 1339-43.

<sup>2</sup> In the agricultural exporting countries, under some conditions of economic growth, further expansion of the agricultural sector may become desirable. Thus in Australia during the early 'fifties, rapid population growth and rapid economic expansion brought balance-of-payments problems the solution of which depended mainly on an increase in rural exports. However, any necessity to increase the rural work force was obviated by substantial, but largely fortuitous, increases in agricultural productivity.

stage of economic growth. Even in these countries, there continue to be vast gaps in statistical knowledge of the processes of internal migration, and there are no worthwhile records of any kind available for the crucial early periods when these countries moved from the pre-industrial to the industrial phase of their growth. For those countries currently passing through such a period, the records are often unreliable and sometimes conflicting. Consequently our knowledge of the process of economic development in world perspective is scanty and biased.

It is difficult to be at all certain of the extent to which the essentially Western experience as regards the shift away from agriculture to non-agricultural pursuits can serve to guide the present under-developed countries along the path of economic progress. Some observers are confident that it can, usually pointing to recent Japanese experience in support. I count myself among the more sceptical. I am impressed by the evidence that the present under-developed countries are embarking on industrialization at a much earlier stage in economic development (i.e. where product levels *per caput* are relatively lower) than the present industrialized countries ever did.<sup>1</sup> Moreover, the initial size of the population in most of the under-developed countries, particularly in relation to agricultural and other resources, is infinitely greater. Perhaps also they may be subject to greater social restraints arising from their particular historical heritages.

How much emphasis should the under-developed countries place on the movement of population out of agriculture? A case for accelerated transfers from agriculture to industry is often based on the historical experience of the Western countries. It is wrongly argued, for instance, that Western countries owe their present high *per caput* incomes primarily to their degree of industrialization. An alternative argument hinges on western evidence of relative income elasticities of demand, even though actual elasticities and income distributions in the under-developed countries are vastly different. Again, a questionable presumption that the terms of trade will continue to favour manufactures, as they have over most of the past century, is sometimes used as a justification for the rapid diversification of under-developed economies. Other grounds include the possibility of external economies and the 'infant industry' argument.

Perhaps the most pertinent argument in the present context stems

<sup>1</sup> Simon Kuznets, 'Problems in Comparisons of Economic Trends, in Kuznets, Moore and Spengler (ed.), *Economic Growth: Brazil, India, Japan*, Durham: Duke University Press, 1955, p. 15.

from the alleged existence of rural under-employment or disguised unemployment in the under-developed countries. This 'surplus' work force is often regarded as the key to the initiation of economic growth.<sup>1</sup> It is stated that a significant proportion of the rural work force could be removed in these circumstances without affecting output and that the released manpower could be effectively used in real capital formation.<sup>2</sup>

There seems to be considerable disagreement as to whether genuine under-employment does or does not exist in these countries. I do not feel competent to decide this issue. Both Schultz and Viner, however, have recently offered convincing arguments that the marginal productivity of labour in agriculture in most of the under-developed countries, though low, is not zero and that it is in equilibrium with the marginal productivities of labour in other occupations.<sup>3</sup> Consequently, it is argued, there is no great disequilibrium in labour utilization (similar to that which exists in western countries) upon which a programme of economic expansion can be based. However, it may be immaterial, for many practical purposes, whether the initial marginal productivity of labour in agriculture is zero or not, especially if the productivity of the people who remain in agriculture is raised. But even if genuine under-employment exists, reorganization of agriculture rather than transference of the surplus labour to industry may often be the more economic policy.

The primary emphasis in economic development in under-developed countries, I believe, should not be on the movement of rural labour to alternative occupations or on the acquisition of industrial capital. Rather, the emphasis should be upon raising the level of the skills of the population and introducing new technology, not always by mere transference from the advanced countries, where economic proportioning of factors is different, but by their development in relation to the country's peculiar needs. Efforts should be made to raise productivity in all phases of the country's economic activities.<sup>4</sup>

<sup>1</sup> Some estimates place the surplus as high as 25 per cent. of the agricultural population in some countries. See United Nations, *Measures for the Economic Development of Under-Developed Countries*, New York, 1951, p. 9.

<sup>2</sup> e.g. Ragnar Nurkse, *Problems of Capital Formation in Underdeveloped Countries*, Oxford: Blackwell, 1955, pp. 32-40.

<sup>3</sup> T. W. Schultz, 'The Role of Government in Promoting Economic Growth', in L. D. White (ed.), *The State of the Social Sciences*, Chicago: University of Chicago Press, 1956, p. 375, and J. Viner, 'Some Reflections on the Concept of Disguised Unemployment,' *The Indian Journal of Economics*, vol. xxxviii, No. 148 (July, 1957), pp. 17-24.

<sup>4</sup> Gutman has recently shown that, under conditions found in under-developed countries, excessive preoccupation with raising productivity in the agricultural sector

Eventually, movement of population out of agriculture to other sectors will become a necessary condition of continuing economic growth. But given the known resource endowment of the present under-developed countries, their difficulty in assembling the necessary capital resources for industrialization on a Western scale, the curtailment of international labour mobility, and the limited opportunities for expansion of external markets, it is conceivable that, even in the longer run, these countries may move towards an inter-sectoral equilibrium, in which agriculture occupies a relatively more significant place than in the most advanced countries today.

E. F. NASH, *University of Wales, Aberystwyth, United Kingdom*

There was once an English schoolgirl who was asked to write an essay on agriculture. She began with the sentence: 'Several hundred years ago agriculture was the most important industry in Great Britain, but today it is almost entirely confined to the rural areas.' As everyone knows, the fraction of Great Britain which is still rural is much smaller than it used to be, and the proportion of the working population in agriculture—5 per cent.—is lower than in any other large country. Moreover it is still falling. There was an increase in the agricultural labour force during the war and post-war years, but the downward trend has now reasserted itself, although the proportion of the total food supply which is obtained from home production is greater than it was before the war. Professor Campbell's statement that in a highly industrialized country rural-urban transfers of labour become small both in absolute volume and in relation to total population is of course an arithmetical truism, but I doubt whether British experience or for that matter the experience of the United States lends any support to the belief that the proportion of the working population engaged in agriculture tends to become stabilized when the process of development has proceeded far enough. I am inclined therefore to challenge Professor Campbell's attempt to relate the proportional reduction to particular stages of economic development, and to view with suspicion any suggestion that there is a particular proportion which represents a final or equilibrium figure which we can expect to see established when a country has reached full economic maturity. In Great Britain at least recent changes have been related on the one hand to the particular type of

may affect the distribution of the labour force and income distribution in such a way as to impede economic growth. See G. O. Gutman, 'A Note on Economic Development with Subsistence Agriculture', *Oxford Economic Papers*, vol. 9, No. 3 (October 1957), pp. 323-9.

economic organization existing in British agriculture, and on the other to the economic policies of British governments, and I am not enough of a determinist to believe that we can explain either of these things solely in terms of economic growth or development. One of the economic peculiarities of British agriculture is that in modern times it has always had a much larger proportion of hired wage-paid labour than is found in most other countries, and the labour of farmers themselves and of members of their families has represented a correspondingly smaller element in the total labour force. Wage-paid labour is much more mobile than farmer labour or than farm family labour, and is susceptible to the influence of the 'push' forces as to whose importance Professor Campbell seems to be rather doubtful. Wage rates may be so flexible, of course, as to absorb the effects of falls in the prices of agricultural products, but they may be rendered relatively inflexible either by active competition of other industries for labour, or by effective trade union or government action. Trade union action in agriculture is not usually important, but there have been periods when I should judge the other two influences to have played a significant part in accelerating the exodus of agricultural labour, namely the depression period of the later nineteenth century when competition for labour from mining and other non-agricultural industries was the operative influence, and the inter-war period when, in England and Wales at least, agricultural wages were protected by legal minima instituted in 1924. It is notable that the decline of the agricultural labour force proceeded at a rapid rate between the wars in spite of severe depression in many branches of British industry. The maintenance of farm wage rates by statutory regulations in face of the falling price levels of agricultural products from the late 1920's made labour considerably more costly in terms of farm outputs than it would otherwise have been, and must have had some influence in forcing farmers to economize in its use.

This leads to another point on which I should like to challenge one of Professor Campbell's statements, at least so far as Great Britain is concerned. He suggests that inter-regional disparities in real income levels tend to increase as economic development proceeds. This may have been true in Great Britain during the nineteenth century, and perhaps what has been happening there more recently does not count as economic development in Professor Campbell's sense. But one of the most important results of the wage legislation I have referred to has been to make agricultural workers' earnings substantially uniform throughout the country, whereas before 1914 there were extremely wide regional differences. Regional differences in the prices of

agricultural products have also been considerably narrowed by some of the recent forms of market regulation. This again is a matter of policy, of course, rather than an automatic result of the process of development, but I must give emphasis to my opinion that in a country like Great Britain any interpretation of current developments which does not take into account the influence of policy can lead to conclusions of a misleading character.

During the most recent period the effects of minimum wage legislation in encouraging the outflow of agricultural labour has been of smaller importance, I think, because the Government has been simultaneously supporting the prices of agricultural products in a partial and selective way before the war and much more comprehensively during the war and since its close. Both this action and the enforcement of minimum wages have largely had the object of minimizing the disparity in income between agriculture and the rest of the community, but whereas minimum wage legislation has the economic virtue of obliging farmers to bring the marginal product of their labour into closer conformity with its marginal product in other employment, price supports not only negate this desirable result but almost inevitably have the effect of bribing farmers to produce output which the community does not really want and of which it sometimes has considerable difficulty in disposing. They also serve to discourage any tendency which might otherwise have made itself felt for farmers themselves to leave agriculture for other occupations. Mr. Bellerby, whose work has frequently been referred to at this Conference, has recently analysed the British population census figures for various dates back to 1851 and has shown that the number of farmers recorded in Great Britain in the census of 1951 differed by only 1,000, that is to say by about one-third of one per cent., from the numbers so recorded a hundred years earlier. This remarkable stability is due, of course, to causes much more deep-seated than the policy of the British Government during the last twenty or twenty-five years, and it raises problems which are among the most difficult and also the most important of all those with which British agricultural policy is now faced. But price support measures and other aspects of British post-war policy, including that relating to land tenure, must have made the structure of British agriculture less flexible than it would otherwise have been. My judgement is that whereas pre-war policy up to, say, the mid-1930's probably tended to encourage the movement of labour out of agriculture, post-war policy must have worked in the other direction. The renewed fall in the agricultural labour force during the last five or six years therefore



reinforces my scepticism as to the existence of any definite minimum percentage at which the proportion engaged in agriculture can be expected to stabilize itself if things are left to work themselves out.

These remarks, I regret to say, have very little relation to what is probably to many of those present the most interesting part of Professor Campbell's paper, namely his concluding paragraphs dealing with the relevance of the experience of relatively advanced countries to the problems of those seeking to initiate the process of development. I find myself inclined to agree with some of the things he has said in his concluding section and to disagree with others, but I am conscious that my knowledge is probably insufficient to entitle me to either opinion. He says that it is wrong to suppose that western countries owe their high average incomes to industrialization, but does he deny that their income would be much lower if their industries did not exist? Nor can I readily visualize the possible equilibrium which he suggests may exist for under-developed countries in which agriculture would occupy a more significant place than it now does in the more advanced countries, unless this equilibrium is to be one that is attained at a relatively low standard of real income. The law of demand for food is by itself surely of sufficient universality to make it practically certain that a country which does not reduce the proportion of its labour force in agriculture below the level usual in under-developed countries is also a country whose real income per head will remain low.

On the other hand, a substantial proportion of non-agricultural producers obviously cannot exist unless agriculture is productive enough to feed them, and it is useless merely to throw people out of agriculture without giving them other productive employment, especially in countries in which provision has to be made not only for development but for the needs of a rapidly growing total population. The question to be answered in such countries is whether or not a rising level of real income per head can in fact be attained, not whether its achievement will necessitate a reduction in the proportion of the working population engaged in agriculture. The fact that economic advancement is to all intents and purposes synonymous with the relative economic decline of agriculture does not in itself tell us anything at all about the possibility of achieving economic advancement or the steps that need to be taken to start the process moving. This is a very important question, but I think it is separate from the one we have been discussing.

KARUNA MUKERJI, *Visva-Bharati University, Santiniketan, West Bengal, India*

I submit that the problem of disguised unemployment is not an alleged problem; it has been established to a degree by regional researches recently carried out in India, for instance. Certainly, I do not agree with Professor Campbell that the primary emphasis should not be on the movement of rural labour to alternative occupations or on the acquisition of industrial capital. My opinion is just the opposite. The alleged improvement in the terms of trade of the food growers and farmers would suggest that the solution of the problem of disguised unemployed should be found up to a point in the rural and agricultural sector itself. There is, for example, the mixed farming approach, the idea that the solution may be found by taking more and more to mixed farming in the place of cereal farming alone. But in an over-populated country like India I have great doubt if there is any considerable scope for extending mixed farming when the competition for food among human beings is so intense. In the main, therefore, the solution must be found outside the agricultural sector. We in India are adopting the 'public works' approach by using surplus food from America to some extent. We know that it is only a temporary solution—a counterpart of 'pump-priming' in a depression-ridden area. The real solution is industrialization. In India, for instance, it is difficult to transfer population from the rural sector because of inertia and sociological and institutional barriers. But our most important difficulty is the slow pace of industrialization. There is not enough induced investment in the industrial sector, and not enough saving in the rural sector. Further, such savings as there are in our rural sector are not being invested in the industrial sector. Again, too often the industries are capital-intensive, especially in the public sector. Hence, there is limited scope for absorbing surplus hands from agriculture. The vast net increase in population which is aggravating the problem is mainly due, as is well known, to better public health and the falling off of the death rate. In India we have seen the death rate fall from 39 per 1,000 to 29, to 18, and in West Bengal even to 8 per 1,000. The net increase in births over deaths may also be due in fact to better nutrition. What is the solution? Apart from the generous foreign aid that we are receiving, I think the long-term solution lies in population control, and under the First and Second Five-year Plans we have taken to what is called family planning. Secondly, there must be a balanced growth of both labour-intensive and capital-intensive industries. And obviously, investment in the agricultural sector must maintain its pace. Recently, an investigation

that I made in West Bengal showed that, at least in terms of fertilizers, there has been an increase from two per cent. of the cultivated area covered by fertilizers to six per cent. in the period 1951-1954. Secondly, there must be increasing scope for investment in the private sector of industry. But more important in an under-developed country like India is the need for autonomous investment in the State sector, and here we note the relevancy of Dobb's well-known curve describing the dog pursuing the master asymptotically all the way rather than moving diagonally so as to catch up with the objective in the shortest possible distance. Here the 'dog', of course, refers to private investment in an unplanned economy. Lastly, our hope lies in the mobilization of resources in terms of, among other things, the idle hoards of gold, amounting to about 3,000 crores of rupees or from 6,000 to 7,000 million dollars.

KAZUSHI OHKAWA, *Hitotsubashi University, Kunitachi, Tokyo, Japan*

Professor Campbell doubts whether Western experience can be taken as a guide for less developed countries, and he has considered Japanese experience to be essentially of the Western pattern. However, this is not entirely so. We have had less than a century of modern economic growth. During the initial period of industrialization in Japan, the economic level was almost the same as that of the least developed countries in Asia at the present day. Japan was also grossly over-populated. Since the beginning of industrialization, the economy has developed at the rate of about 4 per cent. per annum. This was very speedy compared with Western experience, and resulted in absorbing into the non-agricultural sector all the natural increase of the rural areas. Even so this was not enough because it did not reduce the absolute numbers of the rural population. Within the agricultural sector young people succeeded their parents, and the number of households was almost unchanged throughout the whole period, although the proportion of the labour force engaged in the agricultural sector has been falling up to the present. This is a somewhat different pattern from the so-called Western type.

Coming to the theoretical problem of so-called under-employment or disguised unemployment in under-developed countries, Western scholars often consider the problem from the standpoint of transfer of labour from agriculture for the sake of industrialization. Speaking from Japanese experience, the problem of marginal productivity of labour seems to me less important in this context than is usually assumed, because in the process of industrialization the labour was supplied by the natural increase within the agricultural

sector. We developed many small-scale establishments in the secondary and tertiary sectors, thus absorbing the increased labour force in agriculture and developing small-scale farming systems and increasing their productivity. It would be useful to analyse Japanese experience more carefully because it seems to combine the Western type of industrialization with the Asian type of agriculture, and may well provide some useful pointers for under-developed countries in Asia with similar problems.

B. MISRA, *Utkal University, India*

There are some tendencies in rural and urban migration in this country which may be worth mentioning. It is generally agreed that the proportion of population engaged in agriculture is unduly high, but the migration of population from the rural to the urban areas sometimes results in reducing rather than increasing the productivity of labour in agriculture. This is because it is the abler and more energetic section of the population that leaves the rural areas. It would be a good thing if some measures could be adopted to prevent this qualitative deterioration in the rural population in the process of migration. Another point is that our rural unemployment is seasonal. In some places the entire population is engaged in the peak period and there is a shortage of labour. I find that in one of our States there are government measures to discourage the movement of labour into industrial areas in peak seasons. This applies in Madhya Pradesh in connexion with tobacco manufacturing. Here the question is of *continuous* employment in the agricultural sector, and I think some measures could be suggested to do away with this seasonal unemployment. A further point is that persons who go from rural to urban areas continue to regard themselves as rural folk for several generations. This is due to the institution of land ownership and the way urban workers maintain their contacts with the villages. For example, the people in our jute and cotton industries have been in the urban areas for several years, but they continue to own their land in the villages. They are not permanently settled in urban areas and are not accepted as permanently urban population. It should be possible to have some institutional arrangements by which people who come to the urban areas may regard themselves as urban.

G. BELTRAN, *Ministry of Agriculture, Caracas, Venezuela*

As Mr. Campbell suggests, measurable economic factors do not fully explain observed population movements nor offer a totally

satisfactory basis for projections. None the less, these projections necessarily underlie economic development policy. To improve them, I believe we must give more attention to the inherent lure of the city. The tendency for rural people to move to the city appears to be largely independent of economics. People prefer the city; and that is all there is to it. Relative employment and income opportunities are not primary determinants of migration in the sense that a migration rate can be projected from personal income differentials and related economic data. The truth is that the intangibles and amenities which the city makes available at no direct cost rank very high in the typical value system, and the potential of the satisfactions to be derived therefrom more than offset the uncertainties with respect to direct income which face the newcomer to the city. There are very few under-developed countries in which the capital city, and perhaps others, do not offer a supply of the gadgets and symbols of the mid-twentieth-century life as it is lived in developed economies—television, radio, telephone, paved roads, mass transport, specialized medical and educational services, minimum wages, low-cost entertainment and so on. In contrast the countryside and the life of the peasant continue in all major respects as they were several centuries ago.

The policy implications of this thesis are many. For example, the case for industrialization may be stronger than it would otherwise be, if it can be assumed that the urban labour supply is a determinant of the level of wages. The productivity of an agricultural extension service may be less than it otherwise would be, in that a lesser proportion of the specialized 'know-how' which the service creates will continue in agricultural activity than would be the case were the lure of the city not operative. Similarly, the productivity of machine capital in agriculture will tend to be enhanced. And, on the political side, it should be noted that an urban mass is a much more explosive force than is a rural population twice its numerical size.

P. S. NARASIMHAN, *Asian Field Office of the International Labour Organization, Bangalore, India*

Professor Campbell has done well to emphasize the need for more accurate information on the extent to which under-employment and unemployment actually exist in under-developed countries. In this connexion delegates may have seen the very interesting study on India which appears in the Commemoration volume published by the Indian Society of Agricultural Economics. Such systematic studies are needed for more countries in the area. Perhaps some new

techniques are also needed for field surveys and for measuring the extent of under-employment and unemployment in agriculture. The last Conference of Labour Statisticians convened by the International Labour Organization in Geneva recommended certain concrete definitions of under-employment and techniques for measuring it to which the I.L.O. is trying to give effect in practical field studies in Indonesia and elsewhere under the United Nations technical assistance programme.

Secondly, Professor Campbell has done well to underline the overriding importance of raising productivity in agriculture. Intensive studies with a view to finding out the most effective methods of doing particular jobs may not be relevant or necessary at the present stage of Asian agriculture when there is a large amount of surplus agricultural labour. Also, there is a tendency to assume that there is little scope for improving the actual work methods of the farmer as these have been learnt through long experience. But it may be impossible to raise the level of incomes in rural areas unless the productivity of labour is raised first. Again, the available data indicate that a considerable amount of under-employment and unemployment can exist in the rural areas side by side with actual shortage of labour at times of peak demand such as transplanting and harvesting. In the more commercialized sector of Asian agriculture at least, and particularly in the plantations, there may be considerable scope for raising productivity by appropriate method studies. A team of I. L. O. experts has recently been helping the government in Kuala Lumpur to carry out a demonstration project in productivity. While a lot of research has been done by the Malayan rubber industry in evolving new and improved strains of rubber, the methods adopted to tap the rubber has remained practically unchanged for the past forty years and could be considerably improved.

Thirdly, in most Asian countries there is a more or less aimless drift of labour from rural urban areas. Under these conditions the employment services and vocational training institutions have a very special role to play. In addition to their conventional placement function, the employment services should also provide, for those moving from the rural areas to the towns, accurate and up-to-date employment market information on the types of jobs available and types of skills required. Concurrently steps should also be taken to develop suitable systems of vocational training. In India, for example, more and more small machines such as irrigation pumps are being used in the fields, and there is a considerable shortage of good mechanics to maintain them. The I.L.O. is providing technical assis-

tance in both these ways to a number of countries including India, Indonesia, Thailand, Pakistan and Ceylon.

Lastly, if the more or less aimless drifting labour from villages to urban areas and often back again is to be stopped, the labour force in the urban areas must be stabilized. One method of doing this is to improve working conditions in industry. A number of countries have already adopted appropriate labour legislation. Better living conditions, especially housing, are important.

H. C. M. CASE, *University of Illinois, U.S.A.*

It occurs to me, in comparing the trend in the proportions of population engaged in farming and other employments, that there are wide differences in climatic conditions. Many countries can produce vegetables and fruits at all seasons. Where there are distinct summer and winter seasons with no growth during the winter the problem of food supply takes on a different aspect. In my own country where we have distinct summer and winter periods, part of our food supplies must either be transported over considerable distances or processed for future use.

Some people may misunderstand conditions in my country. For example, only about 10 per cent. of our working population is actually engaged on farms, but about 50 per cent. of the population of the United States is engaged either in farming or in processing and handling foods or in making the equipment which enables our people to produce a larger output of food products per farm worker. Many production processes carried on on farms fifty years ago have now been shifted to the city. When making comparisons between countries, therefore, and in studying trends, these points should be understood and kept in mind.

J. R. MOTHERAL, *Planning Commission, Karachi, Pakistan*

Professor Campbell has pointed out two fields of prime and universal interest to this Conference. The first is a very general and enthusiastic derogation of the U.S. agricultural policies. On this there seems to be wide agreement.

In the second field there appears to be a great deal of controversy and confusion and I suggest that Professor Campbell might extend his views on it. The question is whether, on the basis of the available evidence, agriculture in the under-developed countries is likely in years ahead to have to bear a disproportionate share of the cost of economic growth. We have had arguments I believe on both sides of this question, and those of us who are dealing with the authorities

and policies in the under-developed countries would like to hear the views of this Conference.

I was impressed with Professor Campbell's word of caution about the relevance of the experience of advanced countries to under-developed countries with particular reference to population adjustments. One of the neglected areas of study, for instance, has been the enormous growth of metropolitan areas, notably since World War II. It appears that this influx of people to these great cities has run well beyond the expansion of employment opportunities in the cities. I can only suppose that the explanation of this is partly that now, unlike the corresponding period in the development of advanced countries, these cities provide certain non-employment attractions, such as housing and food subsidies and various types of welfare programmes. This is a good example of the way in which generalizations about development in advanced countries may not apply to under-developed countries at all and may even be dangerous to apply.

Although I accept many of the criticisms offered here on U.S. policy I think one important point has not been established. I refer to the impact of agricultural policy in that country on internal population adjustments. This was introduced in Professor Campbell's paper when he referred briefly to a retardation of rural migration in the United States owing to that country's agricultural policies. This is something of a moot point but I think there is at least as much proof on one side as on the other.

In the United States the farm population in some regions has declined by as much as 50 per cent. in ten years. For the most part, this movement has stemmed from low-income areas and represents a healthy adjustment. There were other forces at work to be sure, but the burden of proof is on those who make the assertion that agricultural policy measures have been a retarding factor. Indeed, the metropolitan areas of the United States scarcely could have absorbed a greater number of farm-to-city migrants since 1941.

P. M. SCOLA, *Department of Agriculture for Scotland, Edinburgh, Scotland*

I think many will be sorry that Dr. Joseph Duncan, a pillar of this Conference, is not able to be with us today, but I should like to touch on a subject which would have interested him and which has been raised both by Professor Campbell and by Professor Bićanić. This is the age structure of the farming population. Professor Bićanić had us rather worried by telling us that in Texas nearly one-half of the cowboys are over the age of 65. It seems a rather dangerous occupation for them. Professor Campbell made the general point that when



the employed population in agriculture is either stationary or declining there is a tendency towards lack of balance in the age structure. This was so in Scotland twenty years ago. The employed population consisted largely of boys and old boys, and there were comparatively few people in between. Workers tended to leave farming soon after the age of twenty-five. But this is not the situation now. The age structure of the agricultural population—farmers and workers—is much the same as that of the employed population generally. I wonder if this is the experience of other highly developed countries. Judging by Professor Campbell's remarks it is not. I can only assume that the Scottish situation is due partly to the system of minimum wages, which has been in force now for a number of years, and which reduces the difference which would otherwise obtain between earnings in agriculture and in other industries, and partly to the provision in rural areas of amenities formerly restricted to towns. In most country districts we can now get electricity, television, public transport, and decent water supplies.

K. JANLEKHA, *College of Agriculture, Kasetsart University, Bangkok, Thailand*

I should like to draw Professor Campbell's attention to one point which I think is important especially in the part of south-east Asia where rice mono-culture is practised. I refer to the question of seasonal fluctuations of labour demand in the central plain of Thailand which covers about a quarter of the country. I should also like to have his comments on the effect of social organization, especially the family system, on the movement of rural population to and from the cities. This is relevant not only to Asia but also to the Western part of the world. In the United States of America I understand that it is the female members who most often leave the farm for the city. In western Europe it is just the opposite. In Thailand, according to a community study conducted near Bangkok, it is usually the women who go to the cities, where they easily obtain employment as housemaids.

K. O. CAMPBELL (*in reply*)

In the time available it is obvious that I cannot reply to all the points that have been raised. From Professor Nash's comments it would appear that my paper has unfortunately given the impression that I believe that rural-urban movement ultimately reaches some kind of stable equilibrium. This was not really what I was trying to convey. In matters like this it is much better to think in terms of

rates of movement than in terms of a specific equilibrium point. There is evidence that the rate of population movement does tend to slow up over time and it was this slowing up of the rate of movement to which I was referring.

Professor Nash also mentioned the fact that economic policy can have as great if not a greater effect on rural population movement than factors associated with economic development itself. I entirely agree with him. I did make this point in my paper when I referred, by way of example, to the effects of tariffs in my own country and the effects of American price-support policies. I would agree that there are many other aspects of state intervention which might be discussed in this context and it was valuable to have his assessment of the British experience. Despite what Professor Nash has said, I believe there is plenty of empirical evidence to support the view that inter-regional differentials in real income tend to increase as economic development proceeds. It may be that one cannot generalize on this point but certainly the work of Schultz and Myrdal (to mention two people who have analysed very contrasting situations) lends support to the proposition I advanced.

Professor Nash also referred to the final paragraph of my paper which I must admit I inserted in order to provoke a little discussion. I still adhere to the view that it is wrong to regard industrialization as a necessary condition for the achievement of high income per head. There are certain countries in the world, such as New Zealand, which have a very high income per head but which are primarily agricultural countries. I think that the under-developed countries should have some regard for this experience as well as the experience of relatively advanced industrial countries like the United States.

Professor Mukerji asserted that the existence of disguised unemployment in his country had been established as a result of research. I still have a rather open mind on this matter arising mainly from the fact that my experience in the under-developed countries is limited. But I do agree with several of the speakers that this is an area in which we need to be much clearer than we are as regards definitions and that it is an area in which a great deal more research needs to be done to measure the extent of this phenomenon. Dr. Rosenstein-Rodan and the F.A.O. have, of course, already done some work on this problem. As Mr. Narasimhan pointed out, there have also been some studies done in recent years in India and work is currently proceeding in Indonesia. But I think one very important point with regard to the alleged existence of under-employment is the fact of seasonal unemployment. It is my impression that many writers in discussing

this matter do not sufficiently take cognizance of this seasonal factor. Dr. Misra suggested that it is possible to have under-employment in rural areas and at the same time have a shortage of labour at harvest time.

Professor Mukerji also raised the question of the need for greater industrialization in countries such as his own. Again I think this is a question of relative emphasis—a question of the relative weight which should be placed on industrialization as against improvement of productivity in agriculture and other industries. My point was that perhaps it is unwise to place as much emphasis on industrialization as some under-developed countries have done in the recent past.

Professor Ohkawa referred to differences between experience in Japan and in the West. It was very useful to have his comments on this point. He drew attention to the fact that although the percentage of the population engaged in agriculture had declined in Japan, the absolute number of persons employed had increased. This, as I pointed out in my paper, is not peculiar to Japan. This is what happened, for instance, in Australia and the United States in earlier periods.

Dr. Misra made an interesting point about the effect of rural-urban migration on agricultural productivity. This speaker, as well as several others, laid emphasis on non-economic factors in rural migration. I recognize their importance in relation to migration but I did not discuss them in my paper because I felt that they fell within the scope of Professor Bićanić's paper.

Professor Case's observation regarding the employment of people in industries servicing agriculture is a pertinent one. Certainly, when we come to consider those countries where the percentage of the work force employed in agriculture as such is of the order of 15 per cent. or less, we need to take account of the number of people engaged in these ancillary industries.

I was interested in the point made by Dr. Motheral regarding the effect of U.S. price-support policy on rural migration. If, as he says, this is still a matter of debate among Americans, I do not think it is my place to make any final judgement upon it at this time. With regard to his other question, it seems to me that agriculture will have to bear a heavy proportion of the costs of economic growth in the under-developed countries except where there is oil or some other mineral wealth available for exploitation.

Mr. Scola spoke about the age structure of the rural population in Scotland at the present time compared with twenty years ago. When I spoke about unbalanced age structure in farming I did not mean to

infer that this condition would persist. Such a situation seems to me particularly likely to arise with a rapid movement of labour from agriculture to industry. In the Australian case, the absolute decline in the rural work force during World War II did have its effect on age structure. However, with the passage of time the differences in age distribution may not be nearly so evident.

Finally, Mr. Janlekha stressed the effect of a monocultural system upon the seasonal demand for labour. He inferred that I should have discussed the influence of the family system on labour mobility, but as I have already pointed out, this was not part of my terms of reference.