

Summary of Selected Articles

R. S. Eckaus and L. Lefebvre, "Capital Formation: A Theoretical and Empirical Analysis", *Review of Economics and Statistics*, May 1962.

This paper develops a simple non-linear programme for the problem of intertemporal choice in production usually encountered in the analysis of capital formation. It considers the production of a consumption good $[X^1(t)]$ and of a homogeneous capital good $[X^2(t)]$ in each of two discrete time periods ($t=1, 2$) given the quantity of labour in each period and an initial stock of capital.

The objective is to maximize welfare (W) which is some function of the consumption good available in the first period $[X^1(1)]$ and that available in the second period $[X^1(2)]$.

Under a number of constraints—production functions for each good in each period, total supply of labour and capital that may be used, rate of depreciation, initial capital stock and its change due to investment in each period the feasibility surface for production and consumption is found. For any given terminal capital stock, the variation of the arbitrarily chosen W 's of the objective function will trace out a feasibility surface for consumption in the two periods. This surface also describes all alternative investment choices open to society in the two periods.

The selection of any one terminal capital stock, which is the expression of a long-term saving goal for society (barring the extreme case where all investments in each period are for capital goods production) leaves the society with a choice to make: how to allocate productive resources in each of the two period between production of investment and consumption goods in a manner consistent with that goal. For any stipulated terminal capital stock, there exists an infinity of choices denoting combinations of $[X^1(1)]$ and $[X^1(2)]$. The slope of two dimensional surface, indicating alternate combinations of $[X^1(1)]$ and $[X^1(2)]$ (for any given terminal capital stock) denotes the marginal rate of transformation of today's into tomorrow's consumption $(1+r)$ where r can be identified as Irving Fisher's concept of "marginal rate of return over cost".

In this framework, the equilibrium is reached if the marginal rate of transformation of consumption between two periods is brought into equality with the ratio of the arbitrary weights W_1/W_2 . The conditions of maximization are found by solving the system for constraints in the form of

differential inequalities showing the allocation of labour and capital in each of the two periods and the shadow prices of terminal capital and two factors.

The analytical purpose of the above approach is most closely related to Irving Fisher's work. But this approach does not deal with the demand side where Fisher's most important contribution lies. This paper derives alternatives open to society and the optimality conditions on supply side and demand is represented only by relative weights. While the purpose closely agrees with that of Fisher, the analytic framework is rooted in the approach developed by Dorfman, Samuelson and Solow.

Towards the end of the paper, an attempt is made to apply the technique to determine the marginal rates of return over cost in the United States.

(A.R.K.)

R. Findlay, "Capital Theory and Development Planning", *Review of Economic Studies*, February 1962.

Countries which cannot rely on international trade to provide their capital goods requirements should not necessarily expand current production of domestic capital goods to the fullest extent possible. What is possible may not be desirable in the interest of growth. Plants and equipment tend, to a large extent, to become specific to the uses to which they are committed. If the objective is maximizing consumer goods production at a terminal date, it is possible that excessive investment in the capital goods sector in the earlier years may result in a smaller availability of capital stock for consumer goods production at that date. In the models of Mahalanobis and Domar it has been shown that the further away the terminal date, the greater should be the emphasis given to capital goods production.

The conclusion of these models depends on the assumption that labour is "free" in the industrial sector. If this is not so, industry's command over labour will be affected by its ability to produce or procure wage goods. Assuming agriculture to have no demand for manufactured capital goods, the level of industrial employment will depend upon the quantity of manufactured consumer goods sold to the peasants in exchange for food. The relationship between capital and labour in the industrial sector would then be competitive rather than complementary, since industry has to produce not only capital but also purchasing power over labour in the form of con-

sumer goods. More emphasis on the one will mean that it will have less of the other which, in turn, will affect the production possibilities of both in the next period.

Therefore, either the command over labour exercised by the level of consumer goods output in the planned industrial sector or the capacity of the capital goods producing department of that sector can be depicted as the determinant of the rate of growth. A reconciliation of these conflicting determinants is attempted in this article in the framework of a multiperiod general equilibrium model.

In a simple model of a two-sector closed economy, the various combinations of labour and capital available to the industrial sector in the next period may be arrived at, given the transformation curve in industry between the production of capital goods and consumer goods, the offer curve of workers and peasants and the supply function of labour to industry. From this derived locus of factor availabilities in industry, the production possibilities curve for the next period can be obtained. The point of tangency of this production possibilities curve with the 'social indifference curve' used by the industrial planner will give the optimum output of capital goods and consumer goods in the next period. Then, we can trace back to locate on the current-period production possibilities curve that point which corresponds to the optimum position determined for the next period.

The extension of this process over any finite number of periods, however, faces serious obstacles because the offer curve and the labour supply function in period 2 which together with the transformation curve of that period determine the locus of factor availabilities in period 3 cannot be given independently of the choice of output for the initial period. Thus, there will be a family of offer curves and the labour supply curves, one for each point in the period 2 production possibilities curve, introducing an essential indeterminacy into the picture. However, this difficulty can be overcome by deriving a 'composite offer curve' and a 'composite wage rate line' as the loci of the equilibrium points on the various offer curves and supply curves respectively.

The problem of what the current allocation of resources should be between consumer goods and capital goods can then be solved, given the preference function which is to be maximized over any specified number of periods. The solution may not necessarily favour more investment in capital-goods sector with the lengthening of the time horizon, as in the Domar-Mahalanobis model. Rather, we can obtain the paradoxical result that having more capital goods in the future may require production of more consumer goods in the present, the longer is the time horizon.

R. M. Stern, "The Price Responsiveness of Primary Producers", *Review of Economics and Statistics*, May 1962.

This paper is based on a study of acreage adjustment made by Indian and Pakistani growers of jute and other competing crops in response to changes in relative prices. Jute and rice acreage data are expressed in the form of ratios since the main interest lies in finding the substitution effects of relative price changes on production.

Price experiences of Pakistani and Indian jute cultivators before and after the Second World War are separately analysed. The post-War study relates only to East Pakistan and the data used are for the years 1949/50 to 1959/60. The variables used are: ratio of the area of cultivation of jute to that of rice, the average annual price of jute relative to rice lagged one year, and annual percentage change in these series. The analysis does not cover a sufficient number of years to permit any generalization about the magnitude of the response of jute producers to changes in relative price of jute. Nevertheless, except for 1952/53 and the last two years, the area ratio moved in the expected direction in response to price changes. The lack of price response in 1952/53 is apparently due to the sharp fall in international commodity prices following the initial impact of the Korean War; it is reflected in the marked reduction of the area ratio in the following year. Similarly, the area ratio which failed to respond appropriately to price in 1958/59 was significantly reduced in 1959/60 under the influence of continued low, but relatively stable, prices recorded in 1959.

The present practice of annual acreage control may serve to dampen the magnitude of any area-price relationship. Further, scarcity of rice during much of the post-War period may also have dampened this relationship since farmers might have placed greater emphasis upon their subsistence than upon cash crops.

The pre-War study includes the undivided Indian provinces of Bengal, Bihar and Orissa and covers the period 1893/94 to 1938/39. Data pertaining to the areas and ratios of cultivation of jute, rice and ten other crops, and the lagged price of jute relative to rice alone and in combination with ten other crops for the province of Bengal as well as for the combined provinces of Bengal, Bihar and Orissa from 1893/94 to 1938/39 are used. Simple regressions were computed excluding the War years of 1914/15—1919/20: two for jute in relation to rice and two for jute in relation to price plus ten other crops. The results show that the elasticity of jute area ratio with respect to the relative price of jute was approximately .75 for Bengal alone and between .57 and .65 for the combined provinces. While the simple correlation coefficients, which are all significant at .05 level, are not too

high, the evidence does seem to point clearly to a fairly high degree of price responsiveness on the part of Pakistani and Indian jute growers.

The 'expected price approach' developed by Nerlove is also used with the hope of increasing the explanatory power of the regression equations. The lagged jute area ratio was taken as an additional explanatory variable and the technique was applied to the analysis of jute in relation to rice and ten other crops in Bengal only for 1911/12 to 1938/39. The calculations indicated a short-run elasticity of .68 and a long-run elasticity of 1.03 with $R = .65$.

The conclusion is reached that the price system seems to work fairly pervasively in the short- and longer-runs even in the less developed countries. The policy implication of this conclusion is that the relatively unhampered operation of the price mechanism can be relied upon to tackle the basic problems of resource allocation and output mix.

(R.A.K.)

L. Randall, "Labour Migration and Mexican Economic Development", *Social and Economic Studies*, March 1962.

Mobility of factors is a precondition as well as a concomitant of economic development. This is demonstrated by examining the response of Mexican labour to economic opportunity as shown by internal and external migration from 1940 to 1959 and by evaluating the effect of this migration on Mexican economic development during this period.

The economic motive of migration from rural to urban areas is illustrated by migration towards the Gulf of Mexico Census region as a result of the development of oil industry in Vera Cruz and shrimp-packing industry in Campeche. In both these industries in 1940 the minimum urban wage was higher than the national average. But due to internal migration, it declined in Vera Cruz from 145 per cent of the national average in 1940 to 114 in 1959 and from 148 per cent of the national average to 93 per cent during the same period in Campeche. Mexico city attracted, by far, the largest number of migrants. There, the urban wage declined from 165 per cent of the national average in 1940 to 140 per cent in 1956. Conversely rural wages increased relatively to urban wages particularly in areas of largest external migration. At the same time, labour migration helped equalize wages between states.

It was observed that relative wages fell in internal-migration areas and rose in external-migration areas. There were, however, some notable region-

al exceptions to this, like that in the North Pacific areas where despite internal migration there was a rise in relative urban wages.

Notwithstanding the deficiency of roads in the hinterland, Mexico displays quite a high interstate migration—5.9 per cent during 1940-50. This is, however, lower than the rate of 8.0 per cent in the United States. This rate of internal movement reflects an extremely rapid rate of urbanization in Mexico. In 1940, 35 per cent Mexicans were urban-dwellers; in 1950 about 50 per cent were urban-dwellers, *i.e.*, a rise of 21.4 per cent. The population of Mexico city alone rose from 1940 to 3 times as much in 1960.

One effect of migration from rural to urban areas is the overall increase of salaries in all sectors, although the average salaries in agriculture may yet be lower than those in other sectors. This means that any move from agriculture on the average results in an increase of salaries of migrants and the gross national product. Migration and rapid urban growth thereby add to the national income.

Mexico has exported surplus labour as a commodity in international trade and has thereby earned foreign exchange. Earnings of Mexican farm labour in the United States—*braceros*—have been equal to 1 or 2 per cent of Mexico's foreign exchange income. The absence of this labour force from Mexico is more than compensated by the reorganization of farming or by the participation of families and friends in agriculture. If farming is reorganized, total product is about constant. On the other hand when families work, total product and product per person increase. Thus, foreign earnings of labour and increased productivity represent a gain to the national economy.

While internal and external migration contribute to the growth of the national income of Mexico the effect of this migration varies by regions. Mexico city benefits the most.

(S.A.A.B.R.)

J. R. Parkinson, "The Balance of Payments and Fiscal Policy in Pakistan,"
Scottish Journal of Political Economy, June 1962.

Pakistan, like other countries in the process of economic development, faces the difficulty of a high demand for imports not accompanied by sufficient foreign exchange earnings to pay for it. The author suggests three alternatives to deal with this disequilibrium and examines their implications in the context of the Pakistan economy.

1) *Devaluation*: The effect of devaluation would be to raise the rupee value of export goods and some increase in production might be expected in response. About eighty per cent of Pakistan's exports consist of jute and cotton either in their raw state or as manufactures. The comparatively inelastic supply conditions of these two products suggest that the increase in foreign exchange earnings that would result from devaluation would not be very significant. Devaluation may, however, help the export of other manufactures but the contribution of those manufactures to the total exports of Pakistan is very small. The main effect of devaluation is, therefore, likely to be a transfer of income from importers to exporters. Insofar as devaluation leads to an increase in the income of jute and cotton growers, the net effect may be inflationary because their propensity to consume is likely to be higher than that of merchants and manufacturers. To avoid the inflationary effect of devaluation a higher level of taxation on consumer goods would be necessary. Devaluation accompanied by the imposition of a corresponding tax on exports would not give rise to inflationary pressures, while it would have the desired effect of increasing import prices. But it would have little or no export-increasing effect.

2) *Additional taxes on imports*: The excess demand for imports could also be eliminated by additional taxes on imports. The high rate of return to capital in Pakistan would indicate that such a tax might not lead to a reduction of output and increases in consumer prices. From the fiscal point of view the major effect of the import surcharge, under the circumstances, would be to make it more difficult to earn profits on imported materials and to reduce profit by the amount that the surcharge brought into the government treasury. One advantage of such import surcharge is that it increases government revenue without increasing prices.

3) *Auction of foreign exchange*: It has an advantage over import surcharge in that it is more flexible and avoids the practical difficulty of fixing a tax rate which is just sufficient to eliminate excess demand for imports. If the currency is put up for auction the rate will be determined by market pressures. Inflationary tendencies will lead to a rise in the auction price of foreign exchange and government revenues will be augmented correspondingly. It has, thus, some of the features of a built-in stabilizer. The Export Bonus Scheme of Pakistan is such a measure. But the major disadvantage of the auction system is that, because of the price mechanism through which it works, the need to allocate scarce foreign exchange resources is minimized from administrative point of view and insufficient attention is likely to be paid to the need to give adequate incentive to exports.

The choice of the method to deal with balance-of-payments problems will depend on the obstacles that stand in the way of development. If short-

age of foreign exchange appears to be the obstacle, and the demand and supply conditions are favourable, there may be a case for devaluation. But if the obstacle to development appears to be a shortage of resources of a kind that could be consumed at home or sold for export, there is a strong case for some type of import surcharge.

(A.N.M.A.R.)

F. G. Hill, "Regional Aspects of Economic Development," *Land Economics*, May 1962.

This paper deals with regional factors in economic development and tries to show how regional development helps to shape and is shaped by national development and the need for adopting policies to regional conditions.

A historical study of American economic development shows that during the colonial period regional specialization took hold along the seacoast. As transportation improved, specialized production and trade gradually moved westward. With the coming of steamboat and railway routes this regional specialization became increasingly pronounced during the 19th century. Until World War I, American economic development was of an 'extensive' character, *i.e.*, during this period additional areas were settled, new railroads were built and immigration continued. But after 1914, development was mainly 'intensive' involving primarily the further exploitation of known resources. In recent years, urbanization and industrialization, as well as internal migration have been intensified. Employment in agriculture has declined persistently while that in services and manufacturing industries has increased.

Although reduced agricultural employment, out-migration from low-income areas, urbanization and industrialization have helped in reducing regional income differentials, many structural maladjustments in agriculture and industry, as well as in rural and urban areas, are still there. The southeast is still characterized by low-productivity, low-income, rural congestion and underemployment. Although out-migration has been heavy in recent years, migrants being selective, the region's population, has a larger population of dependents than is true nationally. On the other hand, the rural exodus and agricultural change have been responsible for urban growth. Large metropolitan areas are now faced with problems of absorbing large number of in-migrants, and older industrial cities face huge problems of 'urban blight' as slums encircle the central business district and industrial plants become obsolete.

The extensive phase of economic development was responsible for creating large differences in income levels as well as economic activities, e.g., the southern and western regions were characterized by specialization in primary products while north-eastern regions were notable for industrialization and urbanization. This situation gave very favourable terms of trade to the north-eastern regions, and unfavourable terms of trade to the southern and western regions. The rate of development in the northern regions was more rapid than that in southern regions. The subsequent decline in the differentials is mainly responsible to the intensive development which has shifted the industrial and employment patterns by opening up new economic opportunities through urban-industrial development, migration and agricultural readjustments. These structural changes took place more effectively during prosperous periods and World War II greatly augmented this process. Governmental policies have also played a major role in narrowing income differentials since 1930's. Given regional income differences and concentration of industry, Federal income taxes have significant differential effect among regions. The same is true of many regionally selective programmes.

So a clear understanding of regional implications is an essential prerequisite for planning and decision-making for national economic growth. Agriculture should still be modernized and number of persons now employed in agriculture should be reduced further. Better training, technical aids and credit facilities should be sufficiently provided in low-income rural areas of the southeast. Out-migration from such areas should be encouraged. Federal aid for education should also be enhanced for these low-income areas. The additional problems created in urban areas by rural out-migration may be tackled by urban-renewals, transportation improvements, industrial redevelopment projects, retraining and unemployment benefits.

(M.R.K.)

W. R. Allen, "Domestic Investment, the Foreign Trade Balance, and the World Bank," *Kyklos*, Fasc. 2, 1962.

Domestic investment can lead to balance-of-payments problems even if the entire investment is financed domestically because an autonomous rise in a country's investment will probably induce an increase in imports. The author determines the value of the "expansion ratio", i.e., the ratio of the increase in investment to the increase in imports under four different sets of assumptions and suggests certain implications for the lending policy of the World Bank.

1) *No Project Imports*: If the investment project itself does not involve any imports directly, the income multiplier equals the reciprocal of the sum of the marginal propensities to save and import. The change in the equilibrium level of imports is given by the change in income multiplied by the marginal propensity to import. Hence, the ratio of change in investment to change in imports is equal to the sum of marginal propensity to save and import divided by the marginal propensity to import. If the marginal propensity to save is zero (*i.e.*, if imports are the only leakage to offset the investment injection) the expansion ratio is unity. With a marginal propensity to save greater than zero, induced imports are less than autonomous investment, and the expansion ratio is greater than unity.

2) *Project Imports*: If the investment project itself has an import component, there will be autonomous as well as induced imports. Here the expansion ratio will be determined by the sum of the marginal propensities to save and import divided by the sum of the marginal propensity to import and the proportion of the import content of the total investment times the marginal propensity to save. With import content zero, the expansion ratio will be the same as in case 1. But, if the proportion of imports is more than zero the expansion ratio here will be smaller than that in case 1 unless the marginal propensity to save is zero, in which case the expansion ratio is unity whether or not the proportion of imports is greater than zero. If the entire expenditure on investment is directed to imports, income will be unaffected and with no change in income, there will not be any inducement to import so that the expansion ratio will be unity.

Typical values for the relevant ratios and propensities suggest that induced imports may be equal to around one-third of the total investment expenditure and about equal to the whole of autonomous imports.

3) *Further Possible Autonomous Changes*: It is possible that saving may autonomously rise in conjunction with the autonomous rise in investment, in which case there will be an accompanying autonomous fall of an equal value in consumption plus imports. The expansion ratio will now be larger than that in case 2.

4) *Taxation and Control of Trade Balance*: It is wholly unlikely that manipulation of marginal tax rates can prevent total imports from rising since the required marginal value for the tax rate is greater than one and reaches infinity at a critical value for the import proportion of investment in relation to the marginal propensity to import. Even to confine the rise in imports to the amount of the autonomous expansion of imports requires that tax collections increase by the amount by which income rises.

In the absence of direct import controls, there will be some induced increase in imports, giving rise to a drain of foreign exchange not directly required by the investment project itself.

Implications for the Lending Policy of the World Bank: The basic lending policy of the World Bank, with a few exceptions, has been to confine its financing to autonomous imports. While discrimination between autonomous and induced imports may be explicable on the ground of administrative convenience, the Bank's explicit defence of this policy has not been convincing. In particular, there is no reason for the Bank's general policy of not financing the whole cost of any undertaking to be applied in such a way as to favour financing autonomous imports rather than induced. Indeed, it appears that the policy of contributing to the financing of only autonomous imports, tends to narrow investment alternatives and, possibly, to misallocate investment resources.

(M.I.K.)

R. S. Bhambri, "Enterprise, Initiative and Economic Policy," *Kyklos*, Fasc. 2, 1962.

The paper examines the entrepreneurial theory of development. Starting off from Schumpeter's discussion of the role of the entrepreneur in sparking and accelerating economic growth, the author tries to define the concept of entrepreneurial ability more precisely than has been done in the current literature. The notion that entrepreneur is merely a businessman is rejected; underdeveloped countries, which are notorious for their lack of entrepreneurial ability, certainly have no dearth of businessmen. The point of view that links the entrepreneur to the bearing of risk and uncertainty is also criticized since uncertainty is a pervasive characteristic of any economy affecting all human decisions. "Innovation" remains then as the main function of an entrepreneur.

Innovation is a matter of pragmatic experimentation. The entrepreneur develops new ways of doing things primarily through the process of trial and error rather than through any uncanny intuition or unerring judgment. The greater the opportunities for experimentation and research the greater are the possibilities for fruitful innovations. Government intervention is a help, rather than a hindrance, in this process of innovation and in the encouragement of entrepreneurial ability insofar as the government is instrumental in opening up fresh opportunities for the private sector and in undertaking the production of new commodities. The failure of many public corporations cannot be taken as an index of the inefficiency of

public enterprise; the rate of failure is also high among private corporations. On the other hand, the ability and willingness of the government to move into new investment fields in which the private sector is reluctant to move in the initial stages is an index of healthy government initiative and should act as a spur to entrepreneurial talent in the country.

The author concludes by advocating a pragmatic approach to the question of allocation of responsibility to the public and private sectors on the basis of the relative efficiency of each sector. He disparages the usual doctrinaire views on this basic issue and urges that each country should decide the matter in the light of its own peculiar circumstances.

(K.H.)

S. R. Bose, "Regional Disparities of Agricultural Income in India," *Indian Journal of Agricultural Economics*, April-June 1962.

In this study, an attempt is made to examine the variations in agricultural income between Indian states and to segregate the effects of some of the important factors responsible for these variations. The gross and net agricultural income per acre of (gross) cropped area as well as the net agricultural income per head of the estimated population in each state is calculated for 1955/56.

The net agricultural income in each of the 14 Indian states shows wide disparity; Kerala, West Bengal and Assam have two to three times the average all-India net income per acre (Rs. 92); Rajasthan has less than one-half and Madhya Pradesh, Orissa and Bombay have only two-thirds the average all-India income. Per capita agricultural income varies inversely with the density of agricultural population per acre of cropped area. Variations in agricultural income per acre are associated with differences in the cropping pattern, yield rates, and the price per unit of each crop.

States which devote a large part of their acreage to the cultivation of high value crops have a higher net agricultural income per acre than states with a relatively larger area under low value (per acre) crops. The cropping patterns in Rajasthan and Bombay are inferior to the average all-India pattern as they have a relatively larger area under low-value crops, while Assam, Kerala, and West Bengal have cropping patterns superior to the average all-India cropping pattern. The effects of interstate variations in the prices of similar crops upon the net agricultural incomes per acre of the states are studied by comparing the value of each state's agricultural output at the prices prevailing in the state with the value obtained by using average

all-India prices for each crop. Interstate variations in prices of the same crop do not affect the agricultural incomes of the states to any large extent except in Orissa, West Bengal and Kerala. Prices in Orissa are lower and prices in the other two states are higher than the average all-India prices.

The productive efficiency in different states is compared with the average all-India level. Madras shows the highest efficiency of production, followed by the Punjab, Kerala, West Bengal, Andhra and Assam. All remaining states show less than the average all-India efficiency in crop production.

In the light of the study it becomes evident that West Bengal, Assam, and Kerala have relatively high gross agricultural incomes per acre relative to the average all-India level because three factors, namely, the cropping pattern, level of prices and efficiency of crop production in these states is superior to the all-India average level. In the case of Bombay, all three factors are unfavourable, while in Rajasthan two of the factors are unfavourable, while the efficiency of crop production is at the average all-India level.

It is pointed out that if the productive efficiency of the below-average states could be raised to the all-India average level, agricultural production would be raised by 8 per cent, while, if the efficiency of production of all states could be raised to the maximum reached by any state (Madras), agricultural production would go up by 54 per cent.

(S.Q.)

D. R. Khatkhate, "Some Notes on the Real Effects of Foreign Surplus Disposal in Underdeveloped Economies," *Quarterly Journal of Economics*, May 1962.

Two potentially harmful results of the use of surplus agricultural commodities in underdeveloped countries are: 1) that commodity imports adversely affect production, investment and saving in the agricultural sector through downward pressure on prices; and, 2) that the use of local currency holdings generated through surplus disposal is inflationary.

In agrarian economies (e.g., India) downward changes in agricultural prices may not cause agricultural production, saving and investment to decline as might be expected to happen in more advanced countries. Subsistence farmers in underdeveloped areas are constrained to sell a portion of their produce to meet certain fixed land charges and to provide a minimum of clothing and household goods even if their families are forced to go hungry part of the time. Under these assumptions farmers may be expected

to react to price changes by selling more when prices are low and less when prices are high in order to obtain a fixed cash sum. Total acreage and production is assumed to remain unaffected because a subsistence farmer will produce the maximum permitted by the available land, labour and capital resources. This theory is supported by reliable empirical estimates relating to the distribution of marketed surplus by size groups of holdings in India for 1950/51.

Increases in agricultural prices are, therefore, not likely to affect the savings of the subsistence sector. However, big landlords should be expected to increase their marketings with a rise in prices and vice versa. On the whole, a rise in agricultural prices may cause savings of the agricultural sector to increase, but this is likely to be offset by a decrease in the savings of the non-agricultural sector (as a result of higher food prices). Considering the lower private reinvestment coefficient in agriculture the aggregate savings-income ratio of the whole economy may actually decline.

Not only may price rise result in a decrease in the physical quantum of marketed surplus from the small landholders but the big landholders in anticipation of a further price rise may also stockpile supplies. This will further accentuate the rise in food prices, forcing money wages in the industrial sector to increase. These pressures would affect the rate of growth negatively. Since relative price stability rather than relative rise in agricultural prices provides the basic incentive for agricultural development, commodity imports if they achieve this objective are likely to ensure an increased flow of marketed surplus thereby facilitating the maintenance of a large investment programme without inflationary pressures.

With respect to the argument that the expenditure of counterpart currency holdings generated through surplus disposal are inflationary it is explained that this argument is valid only in certain situations and depends on the way in which these funds are used.

(I.A.)

L. Brakel. "A Comparison of Productivity and Recent Productivity Trends in Various Countries", *Review of Economics and Statistics*, May 1962.

This article considers several questions of method and principle in the comparison of productivity and productivity trends in some West European countries and the United States of America. It also seeks to explain the reasons for the differences in the average productivities in these countries and in their relative rates of growth.

It is contended that measures of average labour productivity become meaningful when these are estimated by using the economically active population rather than the total population as the divisor of the gross national product. For purposes of valid international comparison it is also

necessary to correct the official rates of exchange, in case of differences in internal purchasing power of different currencies. It is further claimed that the comparison of productivity becomes more relevant if there is great similarity between the economic structures of the countries compared, and between the statistical methods of registering the respective data involved in its estimation. It is found that the relative positions of the member countries of the Organization of European Economic Cooperation (OEEC) in respect of average productivity become significantly different when this is estimated per head of economically active population rather than that of total population.

Following this method of estimation, the author tries to ascertain the average growth of productivity in some West European countries and their relative trends for the period between 1948 and 1957. The latter is done by expressing the average productivity in each country as a per cent of that in the Netherlands. It is found that, with the exception of Italy, average productivity in West European countries were rather close to each other. Average productivity in the United States, however, was much greater than that in Western Europe. It is also found that the annual average rate of growth of productivity was highest in France (4.5 per cent), and lowest in the United Kingdom (1.9 per cent). Though average productivity was very low, its rate of growth was quite high in Italy (3.8 per cent). Finally, in relation average productivity in Belgium, the United Kingdom, Norway, Denmark and the United States fell, while rising in France, West Germany and Italy during the period 1945-1957.

The author then seeks to explain the differences in the levels and rates of growth of average productivity in terms of *a*) the capital-intensity of production, *b*) the movement of labour from low productivity to high productivity sectors, and *c*) the improvement of the production process through specialization and rationalization. The low 2.6 per cent annual rate of growth of Belgian productivity, it is argued, was due to the fact that the growth of gross investment in machinery and equipment cannot be considered high in view of the country's high capital-intensity of production. The high capital-intensity of production, however, accounts for the high level of Belgian productivity. The high rate of growth of productivity in Norway is similarly explained by the rate of growth of investment. The high 3.2 per cent rate of growth in Dutch productivity is explained by the movement of workers from agriculture to industry, and by the deepening of capital. The unfavourable position of the United Kingdom with respect to the growth of productivity was mainly due to the fact that the process of production did not change much in the British industry. The growth of productivity in France, West Germany, Denmark and the United States are also explained by the growth of working population *vis-a-vis* the growth of investment in machinery and equipment.