

Summary of Selected Articles

J. Ahrensdorf, "Central Bank Policies and Inflation—A Case Study of Four Less Developed Economies, 1949-57," *International Monetary Fund Staff Papers*, October 1959.

This paper reviews the experiences of four countries (Indonesia, Mexico, Nicaragua, and Paraguay) which were subject to chronic inflation during 1949-57. An attempt has been made to show how far central banks mitigated or contributed to inflationary pressures. The potential scope for a more effective monetary policy and the reasons for failure to implement such a policy are then evaluated.

As the analysis involves only monetary policy, it is assumed that changes in central bank assets in the form of claims on government and foreign assets are autonomous. This limits the discussion to rediscount policy, variable legal reserve requirements and selected credit controls as anti-inflationary instruments.

In Nicaragua and Paraguay, central bank credit furnished more cash to the banks and the private sector than to the Government, while in Indonesia and Mexico the reverse occurred due to the operation of the autonomous factors. On the average, secondary credit expansion by the banking system was relatively most significant in Nicaragua and Mexico; in Indonesia and Paraguay it was insignificant or absent.

Reserve requirements were changed most frequently in Mexico. Central bank rediscount rates were changed only in Nicaragua. However, the restraining tools to check secondary credit expansion were not employed to the technically-possible limit owing to certain institutional limitations. Despite this, monetary measures in Nicaragua and Paraguay have succeeded in preventing continuous inflation. Indonesia and Mexico could have reduced the rate of inflation, but action was not taken for fear of adversely affecting output in the agricultural sector, which relied heavily on bank credit.

More generally, vigorous use of restrictive tools by the monetary authorities was hampered by apprehension regarding the output effects of a reduction in rate of credit expansion. Political factors may also have been responsible.

In all four countries, both the cost of living and the money supply increased almost continuously. The average annual rate of increase in prices was the highest in Paraguay (47 per cent) and in Indonesia (17 per cent); in Mexico it was 8 per cent, and in Nicaragua, 7 per cent. The two countries with the highest rate of inflation showed the closest correspondence between the increase of money and the increase of prices. Also, the ratio of currency to total money supply tended to rise, while in Mexico it declined. However, after 1955 the rate of increase in prices declined in Indonesia and Paraguay, and in Nicaragua prices actually fell.

Government cash deficits and credit expansion to the private sector were the major inflationary factors. This applies particularly to Indonesia. Credit

to the public sector was responsible for monetary expansion in Mexico. In Paraguay and Nicaragua, the money supply increased because of credit expansion to private sector. Increases in foreign assets had, on the average, an expansionary effect in all four countries. The rediscounting operations of the central bank to the private sector also contributed to inflationary pressures.

In Indonesia, Nicaragua, and Paraguay, the central bank attempted to counteract increases in monetary liabilities by imposing or raising advance deposit requirements for importers. However, this proved to be only a stop-gap arrangement and was gradually relaxed by all four countries as it adversely affected output and employment in industries using imported raw materials and equipment.

The effect of any given primary expansion on the money supply will be determined by the credit multiplier, which is a fairly stable *ex ante* co-efficient. For the period 1949-57, this coefficient was largest in Nicaragua and Mexico and smallest in Indonesia and Paraguay. Accordingly, secondary expansion of credit was more significant in the former than in the latter countries.

In Indonesia and Mexico, a stabilizing monetary policy would have required an average annual contraction of central bank credit to the banks and the private sector. In Indonesia the scope of secondary credit expansion was limited as the credit multiplier was unity for the period as a whole, though in most years it was greater than 1 and in 1951 as high as 2.8. In Mexico it was 1.7, and a maximum of 5.4 in 1951; therefore the scope of secondary credit expansion was greater. However, both countries failed to check such expansion to the extent technically possible.

In Paraguay and Nicaragua, as already noted, central bank credit to the banks and the private sector was the primary inflationary factor. Credit ceilings were imposed to control the composition rather than the volume of credit, on the ground that private credit for "productive" purposes is not inflationary. Erratic changes in the credit multiplier, therefore, cannot explain the inability to check credit expansion.

Tracing the reasons for the insufficient implementation of restrictive measures, one finds that the failures may have stemmed from the unwillingness of the monetary authorities to take the necessary action. This reluctance may be attributed to their views on the purposes and criteria of monetary policy, and to their apprehensions regarding the effect on output. They were not sufficiently concerned with the control of the overall volume of credit. Another factor is the standing of the central bank in the community: denial of credit to the private sector would have antagonised the public, and the newly-established central banks could not afford this result.

These observations and experiences suggest that the efficacy of central banking in the less developed countries can be improved by the removal of various obstacles. The unwillingness of the monetary authorities to exercise greater restraint on the private sector appears to be the major obstacle. The lessons of experience may, however, induce changes in the view that an

elastic supply of credit is always conducive to economic development. Less important are structural obstacles, which can easily be eliminated by amendment of the banking legislation. It is also suggested that producers in agriculture and industry should reduce their dependence on bank credit.

The basic objective should be to hammer out a long-term monetary policy concerned with the effects on propensities (to save, to invest and to hold money, securities or real assets) and the structure of financial system. Long-run policy should also aim at reducing income velocity by lengthening the payment periods and encouraging the holding of money.

But it is difficult to enforce severe anti-inflationary measures in the less developed countries. There the goal of economic growth takes priority over that of stability.

(A.Y.S.)

T. Balogh and P.P. Streeten, "Domestic versus Foreign Investment," *Bulletin of the Oxford University Institute of Statistics, Vol. 22, No. 3, August 1960.*

The divergence of private profits and national gains in investment at home and abroad indicates whether or not capital exports should be discouraged and capital imports encouraged. The causes of such divergence are: (1) external economies in disequilibrium; (2) the terms of trade; (3) indirect effects of foreign investment; and (4) the effects of certain policies including taxation.

The case for curbing foreign, and encouraging domestic, investment is based on the assumption of external economies. If external economies are conceived in both technological and "pecuniary" senses, then the resultant benefits can be identified with consumers' and producers' surpluses, and with the outward shift of the production possibility locus. They arise from "finite" additions to plant and equipment and from the "disturbance of equilibrium". It is argued that when capital is exported, the country is deprived of these benefits of external economies.

In terms of social desirability, ultimate equilibrium is reached only when successive doses of investment in all industries have eliminated profits everywhere. Investment in one particular industry disturbs the equilibrium of the other industries, which in turn influences the equilibrium of the former. When the economy reaches the final equilibrium position, through this disequilibrium process, the society is said to have invested the optimal amount. The possibility of such a cumulative expansion appears to be the reason why domestic investment is preferred to investing abroad. Of course, cumulative growth resulting from investment abroad may benefit the investing country more than if the capital had been forced to stay at home. This may happen if all the ancillary activities clustering round the centre of growth are conducted by the investing country, and if the productivity of capital is higher abroad. But this appears to be a very extreme possibility.

It is not possible to derive the capital/output ratio for a specific foreign

project from the prevailing capital/output ratios in the foreign country. This is so because changing capital/output ratios are part of the process of expansion. Moreover, if profits are high in particular industries because of imperfect competition, expanding demand, inefficiency of domestic rivals, or market protection, the prevailing marginal productivity of capital may not reflect the profitability of these single ventures.

When considering the effects of foreign investment, it is necessary to make allowance for changing terms of trade resulting from capital export. Investment that reduces the costs of exports at home and export substitutes abroad generates pecuniary external economies abroad, while investment that reduces the costs of the investing country's imports and import substitutes generates external economies at home. Whether or not domestic investment is preferable to foreign investment is difficult to ascertain unless the comparative movement in the terms of trade (resulting from an act of foreign or domestic investment) is properly analysed. But, this is a very complicated problem, and one cannot easily establish any firm view on it.

In the presence of general unemployment, the benefits of domestic investment exceed that of foreign investment by the extent of additional wages. A specific act of investment might raise the average productivity of labour in the economy, and consequently national gains might exceed interest and profits. On the other hand, the unique advantage of investment abroad is that in the event of falling demand, a large firm may reduce costs more effectively by laying off workers, because here employment considerations are not a compelling force. Moreover, foreign investment normally enables the investing country to promote exports in the receiving country.

If the foreign investment is unstable, frequent adjustments in the balance of payments of the receiving country are necessary. The disadvantages to the recipient country are more acute when lending abroad is used as a stability measure by the investing country.

Once the assumptions of perfect competition, divisibility of factors, constant terms of trade and diminishing marginal productivity of capital are abandoned, it is impossible to say whether, from a national point of view, investing abroad is preferable to investing at home. Much depends on the industries and on the conditions in which the investment takes place.

The investment made at home may, of course, derive from foreign sources. In a fully-employed economy, an increase in foreign-owned capital is beneficial if it occurs in a competitive industry, raises the productivity of labour, and diffuses technical knowledge and experience to the economy. Under such assumptions, capital import is desirable.

The proposition that domestic investment is more beneficial to the investing country than investment abroad is based on certain rigid assumptions. There is no universal truth in it. Unless a proper analysis of all the relevant issues are made, it appears to be almost impossible to make a choice between domestic and foreign investment.

J. Bhagwati, "A Skeptical Note on the Adverse Secular Trend in the Terms of Trade of Underdeveloped Countries," *Pakistan Economic Journal* Vol. X No. 4, December, 1960.

There is a general belief that the terms of trade of the underdeveloped countries have experienced a secular decline in the past, and that this trend will continue in the future. But the author points out that the evidence adduced in support of this view has also been used to establish a number of quite distinct hypotheses.

The following hypotheses are claimed to have been proved by historical investigation:

- (1) That the group terms of trade of the rich with the poor countries will improve and that of the poor with the rich countries will deteriorate.
- (2) That the overall terms of trade of the rich countries will improve and the poor countries deteriorate.
- (3) That the overall terms of trade will show a secular trend more favourable to a relatively rich country than to a poorer one.
- (4) That the terms of trade of a country will improve with countries poorer than herself and deteriorate with those richer than herself.
- (5) That the terms of trade of a country will improve more with a country poorer than herself, the poorer the latter is, and will deteriorate more with a richer country, the richer the latter is.

The first hypothesis springs from the United Nations study of the problem ("Relative Prices of Exports and Imports of Underdeveloped Countries," 1949). The conclusions of this study were based on the following assumptions:

- (a) that there was a secular downward trend in the prices of primary goods relative to the prices of manufactured goods;
- (b) that the underdeveloped countries are exporters of primary commodities, while the advanced countries export manufactured goods;
- (c) that the prices of individual commodities move in the same direction as the average indices of the groups to which they belong.

The interruption of the trend in the postwar period and the use of these questionable assumptions imply that this hypothesis may not be acceptable as a valid generalization.

The second hypothesis is not clearly treated by the UN study. The only conditions under which this will hold true are that the trade in primary products between the underdeveloped countries should be small relative to their export of primary products to the developed countries, and the trade

in primary products and manufactured goods between the developed countries should be small relative to their export of manufactured goods to the underdeveloped countries. In other words, the effects of inter-group trade must not be outweighed by those of intra-group trade.

Professor Kindleberger has radically shifted the form of the hypothesis concerning the terms of trade of the underdeveloped and developed countries by making intra-group comparisons as well. The third hypothesis relates the extent of deterioration of the terms of trade with the level of development.

Kindleberger also gives content to the fourth hypothesis, which is rather weak in that it does not state anything beyond what changes are likely to take place in the separate trends of country-to-country terms of trade.

The fifth hypothesis is simply an elaboration of the fourth. It states that the deterioration in the individual country-to-country terms of trade will be accentuated the poorer each country is as compared to the other. It appears that Kindleberger has something like this hypothesis in mind as well.

In the literature on terms of trade, these different hypotheses are loosely combined, and evidence for one has been considered as evidence for the other. This justifies some degree of skepticism about the contention that the historical evidence for certain periods and countries supports the thesis that "the terms of trade turn against the underdeveloped areas."

(A. I.)

S.M. Bhatia, "Tax Exemption in a Developing Economy: A Case Study of Puerto Rico," *National Tax Journal*, December, 1960.

The author examines the industrial tax-exemption programme of Puerto Rico first introduced in 1948 and later intensified in 1954. In conclusion, he suggests a similar policy for other developing countries.

First, the salient features of the Acts of 1948 and 1954 are explained. The Act of 1948 granted an almost complete tax holiday to all new and some old firms until June, 1959, and thereafter partial exemption for the three succeeding years. The Act of 1954 provides a full ten-year tax holiday regardless of the date of establishment and covers a larger number of industries.

The writer then gives the rates of various taxes to show the significance of the tax exemption programme and proceeds to appraise the tax-holiday policy. He points out that the annual rate of growth of gross product was 6.6 per cent from 1940 to 1949 and 5.6 per cent from 1949 to 1958. The yearly rate of increase of per capita gross product was 3.9 per cent from 1940 to 1949 and 4.8 per cent from 1949 to 1958. Higher per capita gross product was achieved through increased productivity and a shift in the structure of the economy.

Industrial output registered a rise from \$81 million in 1949 to \$231

million 1958, an increase of 185 per cent as against an 81 per cent increase in the national income. Of the total increase in industrial output, the tax-exempt firms alone accounted for 69 per cent. Higher manufacturing income was accompanied by greater employment and increased productivity. Tax-exempt firms absorbed 44 per cent of the industrial labour force; and average productivity in these firms was estimated as \$3215 in 1958, a higher figure than that achieved by the industrial sector as a whole.

Private investment in tax-exempt firms stood at 8 per cent of total investment during the first six years of the period under review; and it was 21 per cent from 1954 to 1958, United States investors account for 84 per cent of private capital invested in the tax-exempt firms, and the balance is of domestic origin. Capital intensity is becoming more and more prominent in the tax-exempt firms.

After recounting the accomplishments of the tax-exemption programme, the author turns to some of the important criticisms offered against the policy and refutes them one by one. First, he shows that the tax exemption provided in the Industrial Incentive Act of 1954 is by no means insignificant, since it allows an almost complete tax holiday. Second, he asserts that the tax exemption is conditional, so that Government does retain control. Third, he points out that the policy has resulted neither in wasteful use of Government resources nor in unnecessary loss of Government revenue; studies show that the ratios of benefit to cost and Government revenue to cost have both been rising. Fourth, he admits that a tax-exemption programme is difficult to administer, yet he feels that Puerto Rico has survived the initial administrative stresses and strains. Fifth, in reply to the criticism that tax exemption interferes with optimum allocation of resources, he states that the concept itself is vague. Finally, he identifies the object of a tax-exemption programme with that of penalising the inefficient firms and encouraging the efficient ones.

In conclusion, the writer offers some advice to the developing countries in the light of the Puerto Rican experience. He maintains that the tax-exemption programme of Puerto Rico was a potent force in attracting external capital. Most of the achievements in the fields of capital formation, national income, higher wages and greater employment opportunities are fruits of the tax-holiday policy. The author, therefore, recommends a similar policy for the developing countries of Asia and Africa where growth of private enterprise is a national goal. In this connection, he advocates taxation of dividends paid to non-residents where the capital-exporting country gives credit for the taxes paid in the country where the income is generated. He holds that tax exemptions should be allowed only to industries earning foreign exchange and offering relatively high income and employment. He favours a non-discriminatory policy in which all firms producing a particular product are treated equally. He emphasises the importance of a sufficiently long period of tax exemption and reiterates that a tax-exemption programme can be greatly strengthened by measures which publicise investment opportunities. He suggests that a tax-exemption programme should be part of a broader development plan; and finally, that developing countries should act cautiously and cooperatively while inviting limited international capital.

A.K. Cairncross, "International Trade and Economic Development," *Kyklos* Vol. XIII, Fasc 4, 1960.

This paper presents a critical appraisal of Professor Nurkse's Wicksell lectures about growth transmission through international trade, in the light of some international trade statistics published since Nurkse's death, and compares his views with those of Professor Haberler.

The gist of the argument of Nurkse's lectures is that the 19th century "engine of growth" through foreign trade does not operate powerfully enough to allow the primary producing countries to make full use of their expanding resources without a special effort to develop their domestic markets. Trade is not only international specialisation, but also a means of growth transmission through rising import demand for primary commodities. The 20th Century has witnessed a lag between growth in industrial countries and their intake of raw materials. Hence the primary producing countries face sluggish export markets, and they must employ their expanding capital and labour resources outside the export sector. Their only recourse, then, is to develop the home market by industrialization and improvement of agricultural output. This is the familiar theory of balanced growth restated so as to mean the promotion of "increases in output that are diversified in accordance with domestic income elasticities of demand so as to provide markets for each other locally." Nurkse emphasises that the various patterns of advance can be easily combined, the combinations varying according to the circumstances of each country.

Section I of this article poses some questions about the validity of Nurkse's thesis. The first problem is to know whether the "mechanism of growth transmission" applies exclusively to the recently settled, predominantly rich countries, or to the poor, less developed countries as well. Also, the evidence that demand rather than supply factors have limited the growth of primary exports is rather doubtful. Industrialization, population growth, changes in domestic levels of consumption, have all played a role in diversifying the trend of exports of the less developed countries. Conclusions based on some unrepresentative aggregates, which exclude a number of countries important in the primary exports sector can hardly be satisfactory guides for policy in any one of them. The choice of the base period for purposes of comparison means a lot as conclusions about comparative trends of primary products and manufactures depend on the precise span of time used for the comparison, since pre-war and post-war trends are in strong opposition. Also, it matters whether the comparisons are made in terms of volume or value, since large changes in relative prices have taken place. Nurkse's comparisons are based on *Trends in International Trade* (GATT), while recent publications like Mr. Lamartine Yates' *Forty Years of Foreign Trade* indicate rather different long-term trends.

Nurkse lists six factors in support of his argument that exports of poor countries have lagged during this period. It is not a very convincing list, however; what Nurkse seems to leave out is the price factor. The 19th century high volume of exports from primary producing countries was due to their advantage of low-cost production, coupled with a dynamic and progressive trend in international specialisation. It is the disappearance of this factor which accounts for the subsequent decline in the rate of growth.

It is obvious that specialisation in the form of an interchange between primary products and manufactures could not increase indefinitely. The 20th century has witnessed the dominance of such competitive primary producers as the United States, which are not in the weak competitive position of the United Kingdom a century ago. But it is difficult to find low-cost sources of supply in the 20th century as compared with the 19th. The development of the poor primary producers has to be slower than that of the rich, since they have a limited range of produce and face competition among themselves.

One of the interesting comparisons in international specialisation is that between exports of primary produce from the non-industrial countries and exports from the industrial countries. Unpublished calculations by Mr. Maizles of the National Institute of Economic and Social Research show a continuous rise in the share of the non-industrial countries in world trade in primary produce; though this share has declined in relative terms since 1937. Also, a wide and continuing divergence since 1937 has been found in unit export values for the two groups of countries.

Section II of the paper deals with the very different treatment of growth transmission by Professor Haberler in his Cairo lectures on *International Trade and Economic Development*. Nurkse's argument seems to imply a limited mechanism of growth in the 19th century. Economic growth can be transmitted directly through trade, and indirectly through experience, ideas, attitudes and institutions. Haberler lists *four* such indirect benefits, which are likely to be much greater in the less advanced than in the industrial countries. If the indirect benefits also manifest themselves in a general rise in productivity, market forces may be adequate to convert a small growth in exports into a large growth in national income. Nurkse emphasised, in his balanced growth theory, that improvement in agriculture would increase national income and expand the market for industrial products, providing a firmer basis for the launching of new industries. This process, called "spear-heading", seems much more typical in such cases than advance on a broad front.

Section III provides a concluding comparison of the views of Professors Haberler and Nurkse. Both believe that the relationship between developed and underdeveloped countries is one from which the latter gain much and lose little, and which narrows the divergence in their rates of growth, rather than widens it. But the author doubts this on the ground that the underdeveloped countries as late starters, face many handicaps in their "take off". The difference between the two writers arises in regard to the historical perspective in which they see the impact of development in one group of countries on the development of the others. Haberler believes that output is held back in underdeveloped countries by the low productivity of the entire labour force; while Nurkse considers employment capable of responding elastically to demand under given circumstances. Moreover Nurkse believes that additional resources should be employed in accordance with "incremental" comparative advantage rather than absorbed in production for traditional exports that are in inelastic demand; while Haberler makes no such distinction and trusts to comparative costs to allocate total resources, increments and all, accepting the possibility of applying some import tariffs and protection.

The author feels that neither analyst has settled the primary issue: how far a shortage of foreign exchange limits economic development, having in mind the fact that the majority of underdeveloped countries are "monocultures" with highly inelastic export earnings and a strong import demand for plant and machinery. The problem of accelerating economic development with limited foreign exchange resources is yet to be thoroughly studied.

(N.S.)

D. H. Garnick "On the Economic Feasibility of a Middle Eastern Common Market" *The Middle Eastern Journal*, Vol. 14, No. 3, Summer, 1960.

This paper considers the likely results of a common market among four economic entities of the Middle East: Turkey, Iraq, Israel and Egypt. These four countries are chosen for study because of their differing present conditions and their unequal potential for further development.

The benefits of an economic union are determined by its prospects of trade creation or trade diversion. Trade creation means an improved allocation of international resources while trade diversion implies the reverse.

Thus an increase in economic welfare of the region through the formation of such a union would depend on how far it eliminated trade barriers and took advantage of the complementarities of the contracting parties. It would also depend on the operation of "agglomeration economies" (economies of scale, economies of juxtaposition and other external economies) in the union along with the widening of market. This would lead to the development of new industries and would raise the marginal product of labour through more gainful employment.

The union would benefit further if its share of total world production, consumption and trade was larger and if its original trading relations were based on differences in the relative factor endowment. This would leave less scope for trade diversion and more for trade creation.

In fact, the potential economic gains from a union are limited in the Middle East. Its trade represents a tiny portion of total world trade. As such, there is a greater scope for trade diversion within the union and smaller scope for trade creation in the world economy. The gain is further narrowed by the Inter-Arab agreements for the easing of trade restrictions; to a large extent, the benefits that would accrue through economic union might have already been obtained through direct agreements.

However, the scope for trade creation increases to the extent that trade policies with regard to the world at large are restricted while the scope for additional trade diversion decreases. This is to say, substantial trade can be created by relaying such restrictions; and at the same time, little trade can be diverted if the restrictions are already great.

A study of the relative importance of various sectors in the four states reveals that in general the broad economic sectors in Egypt, Iraq and Turkey

are roughly similar, while the structure of Israel's economy differs in that agriculture is less and manufacturing more important. This would seem to indicate some complementarity as between Israel's economy and the other three, as well as competitiveness among the other three. Unlike developed countries, the sectoral similarity does not give rise to intra-sectoral trade in these Middle Eastern states because of the monocultural nature of their economies. It is this monoculture which makes the commodity trade rigid and narrow, and which it is hoped to offset through economic development. On the other hand, the development programmes will increase the competitiveness among these countries.

Individually pursued, development in each of these states would not derive the benefits of an international division of labour; for each state would be duplicating the efforts of its neighbours. None would gain the advantage of "agglomeration economies" which might be obtained in a larger market framework.

However, a collective development programme might show considerable deviation from the path followed in each state. By substantially increasing the cropped area, this region could collectively supply more than sufficient agricultural produce to its population. The existence of a wider market would induce domestic investment for the reallocation of resources while foreign investment in this area might be attracted by the prospect of profits. The establishment of a common market could provide the impetus to break the vicious circle of underdevelopment. The broadened market could also serve to increase productivity of the sectors, and to so diversify output as to encourage intra-sectoral trade. Such trade would further increase the division of labour and raise productivity. Economic union, therefore, has the prime advantage of promoting a balanced sectoral development—much more so than each country could do individually.

This model by no means excludes the other entities of the region. Indeed, it tends to argue for the broadest inclusion of states, since the larger the economic area included in the union, the greater the potential trade-creating effects and the less the potential trade-diverting effects, the more substantial the probable reallocation of resources, and the greater the net increase in economic welfare.

(M.H.)

L. M. Goreux, "Income and Food Consumption" *Monthly Bulletin of Agricultural Economics and Statistics*, Vol. IX, No. 10, October, 1960.

To prepare demand projections for economic planning the Food and Agriculture Organisation undertook a systematic analysis of the behavioristic relationship between income and food consumption. The results were derived from household surveys and time-series averages for a number of countries. This article gives a brief description of the methods used and the main findings of the study.

Various types of consumption function were examined critically. A selection was made on the basis of statistical fittings and economic interpretation of the function in the framework of consumption theory. In the analysis of consumption surveys, wherever possible, households were stratified into homogenous groups in order to obtain a *ceteris paribus* situation within each stratum. In the case of time-series, additional explanatory variables other than income were often introduced.

To fit the consumption function, households were classified into income brackets; and the average of total expenditure for each group was considered as the explanatory variable. Further, in the case of stratified samples, consumption functions were fitted separately for each of the strata as well as for all strata combined. To obtain the most efficient estimates of the regression coefficients, an analysis of covariance was made.

Wherever requisite data were available, they were used to fit different consumption functions for the agricultural and non-agricultural populations. Within the non-agricultural population, separate consumption functions, for various sociological, professional or vocational groups were not found to be worthwhile. It was also noted that within the observable range of household sizes, there were "economies of scale" in the sense that expenditures fell as household size increased.

The average values of the elasticity coefficients, calculated for about 50 surveys conducted in various parts of the world, indicate that in cities the elasticity of total food expenditure diminishes gradually from about 0.8 in the lower-income countries to 0.4 in the more developed countries; as income increases, the rate of decline of income elasticity is more pronounced among the farm population (from .8 to .25) than among the non-farm population; for meat, milk and milk products, and sugar and sugar products, expenditure elasticity is very high for low-income groups but diminishes rapidly particularly for milk, as income rises; expenditure elasticity for cereal products decreases from 0.7 in India to 0.15 in high-income countries; expenditure elasticity for beverages, particularly alcoholic beverages, and for meals and drinks or snacks taken outside the home, is very high (generally greater than unity) and does not seem to diminish as income increases.

In high-income countries there is a marked difference in expenditure elasticities for food valued at the retail and farm levels. To get an idea of the influence of increased purchasing power in gross farm income the quantity elasticity computed for the major agricultural commodities produced in each country was weighted according to its respective share in the country's gross farm income. The result of the computations made for seven European countries and the United States indicates that the difference between the food coefficients of elasticity at retail and farm prices increases with income. For instance, in Italy these coefficients are respectively equal to 0.66 and 0.50, while in the United States they are 0.41 and 0.16.

For time-series (based on the period 1950-58), the Log-inverse consumption function was chosen. The regression coefficients were analysed country by country and year by year.

The elasticity coefficients calculated from comparisons between years and between countries were generally close to one another. However, in the case of fat, liquid milk, cereals, coffee, and sugar, the two types of estimate were significantly different.

In order to measure the effect of an increase in consumers' income, the quantities of each agricultural product consumed were weighted by the corresponding average of European farm prices. For animal products, the elasticity obtained in this way was close to the figure yielded by the household survey. On the other hand, elasticity of crop products for consumption was lower than those revealed by Engel curves.

The demand elasticity of food is about 0.1 for calories, 0.3 for fats, 0.35 for all animal proteins, and 0.6 for protein contained in meat and egg and fish. For fats and animal proteins, the elasticity estimate is lower when based on time-series than when derived from international comparisons. For total meat and eggs consumption, there was a remarkable agreement between the elasticity estimates based on consumption surveys (expenditure elasticity) and those derived from time-series (quantity elasticity). For beef and veal consumption the quantity elasticity is somewhat higher for time-series than for consumption surveys.

Despite the questionable reliability of some of the basic statistics and the many biases that could not be completely eliminated, some general tendencies, as indicated above, can be discerned from these regression coefficients. The elasticity coefficients calculated in this study are better adapted to projecting demand over medium and long-term periods than over short-term periods. Demand projections in particular are conditioned by population and income growth.

(A.R.)

L. Hollerman, "Industrial Structure and Economic Planning in Japan" *Pacific Affairs*, September, 1960.

This article attempts to examine some aspects of Japan's New Long-Range Economic Plan for 1958-62. The objectives of the Plan are twofold: (1) the welfare aim of raising real per capita income; and (2) altering the industrial structure so as to enhance the role of heavy industry as well as rationalising all industries so that "the dual character of the nation's economic structure (may be) liquidated".

The Plan assumes a system of basically free enterprise and free markets. "Free enterprise" includes direct and indirect assistance by the Government to industry. Economic growth is being "purchased", not compelled, by the Government: it has not only facilitated and financed the rationalization and planned shift in the composition of industry, but has also made its own purchases of goods and services representing 20 per cent of the gross national product.

Exports comprise only 16 per cent of the national income projected for the target year (1962), as compared with 22 per cent in the base year (1934-36).

This low ratio has been projected because Japanese firms prefer to sell in the domestic, as against the foreign market. The export target is held to be realistic on the ground that high domestic demand for goods and services is assured by government intervention.

But problems arise in regard to the reduced reliance on imports under the Plan. Historically, pressure on the real resources of the economy has resulted in an imbalance in trade. Tight-money measures were implemented in 1957; this brought increased production and a relative decline in imports. However, the reduced dependence on imports is not likely to continue. Input-output studies of the Japanese Government reveal that, during the period 1955-57, the average propensity to import increased in relation to investment, exports and consumption. Taking the depressed figures of average propensity to import in 1958, it is found that these three major categories would require an import content amounting to 82 per cent of total imports projected for 1962.

Thus, it is evident that the projected import figures are too low. And if special procurements are terminated by 1962, Japan's ability to finance the required level of imports will be seriously jeopardized.

This gap is a very serious one. Even though business firms may cooperate in making the structural shift, the desired reduction in import dependence may not be achieved. The Plan argues that, with increasing emphasis on heavy and chemical industries, and with the introduction of machinery, import dependence will decline. But government data show that the structural effect has tended to swamp the desired reduction in import dependence. According to the Plan, natural fibre imports will be displaced by domestic chemical fibre output, which should eventually reduce the ratio of imports to production of textiles. But the figures indicate that there has been no such decline since 1955. Nor has import dependence been reduced in the case of chemicals; while the ratio for machinery has actually risen.

The data also indicate that the structural change envisaged by the Plan is not taking place throughout the Japanese economy. Although a shift has occurred since 1955 in terms of textiles and machinery, there has been little change with respect to chemicals and ferrous metals. All things considered, the import target of the Plan is inadequate and inconsistent with the growth envisaged.

During 1955-58, approximately half of total exports have been sold in low-income markets, and half in high-income markets; in the former case the exports have been capital-intensive, and in the latter labour-intensive. Two observations may be made on this dichotomy. Firstly, the capital-intensive sector is reluctant to compete abroad because of its inadequate efficiency. Secondly, if efforts to maintain balanced diversified sales to high-income as compared with low-income markets are successful, they will tend to reinforce the dual type of economy that Japan seeks to liquidate. Further, the relative weakness of international competitive power in the heavy and chemical industries may perpetuate bilateral trade arrangements, whereas the low-wage textile industry would benefit from unrestricted multilateral trade.

Besides Japan's foreign-trade dependence, there are such institutional problems as the revival of business cartels and control association. These are, of course, in conflict with the principle of "free enterprise and free markets."

Industrialisation provides a common ground for the interests of the nation and of specific industries within it. But industrialisation achieved by contraction of the pre-modern sector means that unemployment cannot be passed backwards from the modern sector.

The author concludes that the current Japanese prosperity does not warrant an optimistic view of the outlook for the Long-Range Economic Plan.

(A.S.)

A. E. Holmans "The Quantity of Money, Gross National Product, and the Price Level: Some International Comparisons". *Scottish Journal of Political Economy*, Vol. VIII, No. 1, February, 1961.

This article attempts to provide some empirical evidence for the Radcliffe Committee's contention that the whole liquidity position, and not just the quantity of money as conventionally defined, is important for monetary policy.

Monetary policy operates on the level of aggregate demand and through influencing the volume of monetary expenditure. The Committee believes that the concept of velocity gives no insight into spending decisions. To support this view, the author provides some statistics on the rate of change of income velocity between 1948 and 1957 (broken into 3 periods: 1948-50, 1950-53 and 1953-57) for twelve countries.

During this period, the ratio of money balances to income fell substantially in eight countries. One possible explanation is that the decline reflected a process of adjustment of war-swollen balances to a more 'normal' ratio between money balances and income. This could have been so for the period 1948-50. But the relevance of that explanation for 1953-57 is very doubtful: first, by 1953 much of the effect of wartime creation of money had worn off in many countries; secondly, if this process was at work, the rate of change of velocity would have declined, not increased, as equilibrium was approached.

Nor the rise in velocity between 1953 and 1957 can be explained in terms of a change in the desired normal ratio. One possible effect of such a change would be a substitution of non-monetary financial assets for money—the ratio of money stock to income falling and the ratio of money plus other financial assets to income remaining the same. But the statistics show that in those countries where the ratio of money stock to GNP at current prices fell between 1953-57, the ratio of money plus 'quasi-money' to GNP at current prices also declined.

Furthermore, a reduction in the desired ratio of money balances to income is supposed to lead to a reduced ratio of saving to disposable income; but again, the statics show that in four of six countries, with the increase in income velocity, the saving ratio also rose—in two countries very markedly. The saving ratio fell in the two countries where the rise in velocity was smallest.

The author concludes that there appear to be strong grounds for the Radcliffe Committee's view that the velocity of circulation is a concept that tells us nothing directly of the motivation that influences the level of total demand. This suggests that the connection between changes in the quantity of money and in the volume of expenditure is a loose one.

A graphical representation of changes in the quantity of money and in G.N.P. at current prices over the periods 1948-50, 1950-53 and 1953-57 also shows that there is a loose association between these two variables. The simple correlation coefficient is +0.64. The regression equation of the increase in G.N.P. (X) on the increase in the quantity of money (Y) is $X = 20.5 + 0.44Y$. The same relationship is found when two estimates of the quantity of money for 1953-57 are considered separately. Using these two estimates, the simple correlation coefficients are +0.55 and +0.59.

Furthermore, the association between the "excess increase in the quantity of money" (percentage change in the quantity of money minus percentage change in G.N.P. at current prices) and the change in the price level is even looser. This is borne out by the fact that the simple correlation coefficient for the excess increase in the quantity of money and the increase in the quantity of money in 1953-57 is negative (-0.39 by using one estimate and -0.33 by another).

The quantity of money can exert a decisive influence on the level of expenditure only if there is a very close link between the quantity of money and the amount of credit of all types extended. But there is some degree of independence between the quantity of money and the volume of all credit. This is shown by United States figures for 1954 through 1959; in the years in which demand was rising, such as 1955-56 and 1959, the volume of credit increased rapidly, although the quantity of money rose but slowly compared with other years. This means that the extension of non-bank credit by financial intermediaries is an important means by which an increase in monetary expenditure can be financed without any rise in the quantity of money as conventionally defined.

Thus it appears that the connection between changes in the quantity of money and changes in aggregate monetary expenditure and prices are very hazy. Income velocity of circulation is highly unstable, and the variations do not seem to be explicable in motivational terms.

B. F. Hoselitz, "Small Industry in Underdeveloped Countries," *Journal of Economic History*, March 1959.

In studies dealing with the historical background of industrialization, much attention is usually paid to the development of large-scale industry, and small industry is introduced merely as the starting point of large industrial enterprises. The large industry also dominated the earliest postwar discussions on the economic development of underdeveloped countries; it is in this period that many of the often-criticised schemes for giant steel plants and other large industrial establishments have their origin.

However, during the last few years increasing attention has been paid to small-scale and even cottage industries. This has been especially pronounced in the countries of South and Southeast Asia, as shown by various research studies and by Conferences of the Economic Commission on Asia and the Far East and other organisations associated with the United Nations.

Before analysing the role of small industry in economic development, the author defines it precisely in order to avoid the problems arising from differences in industrial organizations of countries at different levels of economic advancement. All firms employing fewer than fifty persons are small-scale industry, and firms employing fifty persons and more are medium, and large-scale plants. Within small industry, there is a further sub-group of dwarf enterprises which provide employment for not more than five persons, and they are classed as "dwarf industries" or "handicraft shops".

In Postwar European countries we find that small industry still plays a rather vital role, though its importance varies from one industry to another. In general, the proportion of the labour force in small industry is significantly higher than the national average in the food processing, leather, construction, metal fabrication and machinery industries; and significantly lower in the textile, mining, basic metal, paper and chemical industries. The trend of development is indicated by data on small industry assembled for France in 1906, two estimates for Austria in 1930 and 1954, two series of estimates for Germany spanning nearly 70 years, and data on Japan covering 35 years. In the earliest years for which figures are available, handicrafts or cottage industry employed about half the persons active in Japanese and German industry. This proportion declined more rapidly in Japan than in Germany—to an amount slightly above 10 per cent of the total industrial labour force. The same general trend is shown by the Austrian series.

Now the questions arise as to how the larger share of small industry in Japan, as compared with European countries, can be explained in the face of a decline in Japanese cottage industry commensurate with that of Europe, and what the trend of development for Japan suggests for the place of cottage and small industries in the underdeveloped countries of South and Southeast Asia. The handicrafts and cottage industries have been unable to face the competition of larger, normally more mechanised establishments and hence have been able to maintain themselves only in those few branches where either special skills (usually of an artistic nature) or special customer services (such as repair services or custom-made commodities) are important. It is the decline of the handicrafts and cottage industries that accounts

primarily for the reduced share of the industrial labour force in enterprises providing work for less than 50 persons. In part, this decline may be attributed to the general shift in the composition of industrial output in countries experiencing economic development: there has been a gradual secular decline in the share of consumers' goods (light) industries and an increase in producers' goods (heavy) industries.

In Japan, however, the share of the industrial labour force in small firms has risen to over 40 per cent by 1955. Japanese industry, as it stands today, shows the rather unusual feature of small plants growing faster than large ones in a period of increasing economic prosperity. Both Marxian and non-Marxian economists in Japan have put forward explanations for the vigour of Japanese small industry. The former attribute it to the only half-accomplished bourgeois revolution under the Meiji; the latter to the lack of a stable, large and uniform demand for many commodities turned out by Japanese industry, which makes investment in large-scale plant and machinery too risky. Neither explanation appears satisfactory. The indispensable factor that has permitted the continued survival of small industry is a characteristic of the Japanese social structure deriving from the pre-industrial era. This feature has been called the "boss-henchman system", in which the central position is occupied by a person who performs all the co-ordinating functions for the many small entrepreneurs in a given industry in any one area. Ultimately, the integration of small industry into the overall process of Japanese industrial production depends upon sub-contracting. The middlemen who boss the small industrialists are, in the turn, dependent upon larger enterprises which often maintain same boss-henchman relationship with these middlemen.

This system appears to be unique not only with reference to Western countries, but also with reference to other Asian countries. But the latter share one condition with Japan which also tends to favour small industry namely the high density of population. Small industry is usually much more labour-intensive than large industry. In addition, incremental capital coefficients appear to be somewhat lower in small than in large enterprises. In view, of the relative abundance of labour and the relative scarcity of capital in Asia, it is natural that the average industrial enterprise should be smaller there than in the more advanced Western countries. Moreover, small enterprises have lower average wage costs than large enterprises.

The establishment of small industries in newly developing countries results in a manufacturing sector which, in terms of wages, productivity of labour, and capital structure, is divided into two branches. One branch encompasses the large modern factory establishments, and the other embraces small plants often using highly labour-intensive methods and showing a level of productivity much lower than that of large industry.

It is also a fact that productivity in agriculture is lower than in industry and services; and that this differential tends to narrow as per capita national income increases. The differences in productivity between small and large industry are subject to the same trend as found in the case of agriculture and industry. As per capita income rises, production in small enterprises tends to become more mechanized and the gap in technology becomes less pronounced.

For underdeveloped countries in general, it may be desirable to work out a form of co-operatives small-industry organisation similar to the Japanese system. The crucial feature of small industry in Asia and Africa is that it is an integrated sector of the economy as a whole, not a bundle of individual enterprises each with its own resources and prospects. Special attention should be paid to its advancement in terms of broad technological progress.

(N.H.N.)

H. Leibenstein, "Technical Progress, the Production Function and Dualism,"
Banca Nazionale del Lavoro, Rome No. 55, December 1960.

The phenomenon of dualism within an economy—the co-existence of advanced and backward sectors or regions—has been explained mainly in terms of the lack of mobility of factors of production and other elements contributing to the imperfections in the market mechanism. This article does not dispute the relevance of such arguments, but tries to find a reason for these disparities in the choice of techniques available in the two sectors. The author suggests that, viewed in this context, the problem can be analysed not on the basis of comparative statistics, but in dynamic terms.

The level of investment in an economy is commonly regarded as a function of the propensity to save and the inducement to invest. This paper concentrates on the inducement to invest and attempts to show how it is affected in the backward sector by the relations between the production function and technical progress. It is in terms of the relative opportunities to invest that the author seeks to explain the differential rates of growth in the two sectors.

The assumption that the production function is continuous is generally made more out of mathematical convenience than out of realism. One of the main contentions of this article is that not only is the production function discontinuous, but its discontinuities, affect the two sectors differentially and they are more restrictive in the sector with a lower capital-labour ratio, *i.e.*, the backward sector.

A shift along the production function towards higher capital—labour ratios is necessary if output per man employed, which may be treated as an index of growth, is to be increased. Such a shift, however, cannot easily be made if the production function is discontinuous over a considerable range. If there exist substantial factor indivisibilities in the form of lack of availability of techniques corresponding to a wide range of capital-labour ratios, the substitution of capital for labour may not be possible, even if there is inducement for such substitution.

That part of the production function which is relevant to the advanced sector is such that even small inducements to factor substitution—in the form of a relative rise of wages to capital cost—are effective and result in the adoption of more capital-intensive techniques. In the backward sector, the inducement to substitute capital for labour is frustrated by the lack of appropriate techniques. Diagrammatically, this is depicted by a production

isoquant which is highly discontinuous in the lower ranges (low capital-labour ratios or the backward sector) and relatively continuous in the higher ranges (high capital-labour ratios or the advanced sector).

The implication of such a production function for the economy as a whole is that the differential in the growth of the two sectors widens, as most of the investment funds are attracted to the advanced sector. In the advanced sector there is an expectation that wages will rise, and in order to sustain these wage increases more capital-intensive techniques are adopted, leading to an expansion in output. In the backward sector, however, the spectrum of choice of techniques is such that capital intensity can be increased either through very large doses of investment or not at all. Consequently, the backward sector stagnates and, unlike the advanced sector, no sustained gradual growth sequence is possible, even though it would be possible to initiate such a sequence if techniques of the right degree of capital intensity were available.

The effect of technical progress or inventions on a production isoquant is generally assumed to be a rightward shift of all the points on the curve. The author casts doubt on this assumption and asserts that, in fact, only those parts of the curve are affected which represent a high cost ratio of labour to capital. In other words, the locus of inventions is such that the degree of capital intensity is increased in the advanced sector but is left unaffected in the backward sector. The argument holds with greater force in the case of inventions of a gradual kind, as the spectacular type may affect "all, or at least a great many, points on the production isoquant", though not equally. This is so because the gradual kind of inventions depend for their adoption on a broad division of labour and the inventive skill of a specialised operator; these are more likely to exist in the advanced sector.

The advanced sector also has advantages in adopting the spectacular kind of inventions. Firms are generally larger in that sector; and it contains such complementary inputs as skilled workers and spare parts, which are necessary for the adoption of some type of new capital goods. Also, because its labour force is better educated, it is able to produce inventions particularly suited to its own needs, often to the disadvantage of the backward sector.

All these factors operate in favour of the advanced sector and against the backward sector in the adoption of new inventions. However, they help to explain the greater discontinuities in that part of the production function which is relevant to the backward sector.

The backward sector is often said to be lacking in entrepreneurial ability. Whether or not this is true at the beginning, the phenomenon of dualism will definitely work against the backward sector. As the inducement to invest is greater in the advanced sector, this will draw off entrepreneurial talent from the backward sector to the advanced sector in search of more and better opportunities for investment.

The article does not aim at providing a complete answer to the problem of "closing the gap" between the two sectors. But it does envisage a tendency

towards equalisation: more and more industries, with economies of scale large enough to offset transportation costs, will come to have national markets; this will induce the establishment of such industries in the backward sector where wages are relatively low.

(S.M.N.)

G. D. A. MacDougall, "The Benefits and Costs of Private Investment from Abroad: A Theoretical Approach," *Bulletin of the Oxford University Institute of Statistics*, Aug. 1960.

This paper suggests one possible method of analysing some general aspects of the problem of benefits and costs of private foreign investment in relation to Australia. It is a theoretical approach using the conventional diagrammatic techniques of marginal analysis. The author attempts, in static terms, to assess the change in Australia's real income due to a relatively small increase in the stock of foreign-owned private-capital—assuming that relevant economic forces have worked themselves out. Short-run implications are not considered.

The analysis begins with drastic assumptions (which are dropped later): Government maintains full employment without inflation; no taxation; no external economies; constant returns to scale; perfect competition; changes in foreign-owned capital stock do not affect the size of the labour force and the Australian-owned capital stock, the terms of trade and the balance of payments position, and do not require any change in government policy.

Under such conditions, an increase in foreign investment raises total output but lowers the rate of profit (equal to the marginal product of capital). Total foreign profits rise if the demand for capital (*i.e.*, the marginal productivity curve) is elastic. But such increase is less than the increase in total output. Hence the country has a gain which is approximately equal to the increase in the real wage bill multiplied by the ratio of foreign to total capital stock. If this ratio is small, and the elasticity of demand for capital is high, such gain is very small and the bulk of extra output will go to foreign capitalists.

If there is taxation, the gain is higher by the product of the increase in foreign profits and the rate of tax.

Again, if immigration raises population by, say, 1 per cent when increased foreign investment raises total capital stock by 1 per cent, total output, total profits and total wages rise by 1 per cent. But Australian income will rise by less than 1 per cent, since Australian-owned capital and its profits are unchanged, and with an unchanged tax rate foreign profits will rise by more than 1 per cent. But if the increase in foreign profits after tax is equal to or greater than the increase in output, there is obviously no gain. Thus increased immigration resulting from greater foreign investment is very likely, but not absolutely certain, to increase Australia's income. Without assuming any fixed capital-labour ratio, it is shown that further gain will accrue if $e > c(1-t)$, where e = elasticity of demand for labour, c = ratio of foreign capital to total capital, and t = tax rate on foreign profits.

Still further gain may result if nationally-owned capital increases via greater savings out of increased national income caused by increased foreign investment. But if domestically-financed investment falls as a result, future Australian income will be lower.

Increased foreign investment, if it generates external economies by breaking bottlenecks and introducing know-how,—may bring extra gain to the country. The extra gain (which may be negative) = change in wage bill + change in Australian profits + tax on change in profits on previously existing foreign capital. If such external economies have a labour-saving bias, a higher total output may be accompanied by a lower wage bill; and if labour's loss is even nearly equal to capital's (foreign and national) gain, the country will lose.

The existence of economies of scale is more likely to bring further gain to the country when foreign capital is increased, since any net loss due to a labour-saving bias of such economies is most improbable.

This analysis cannot satisfactorily cope with a situation of imperfect competition. In the extreme case, the growth of foreign firms to a position of monopolistic exploitation of domestic buyers would involve a loss to the country.

Despite the pressure of transfer of foreign profits, and the inflow and outflow of foreign capital, there will be no significant gain or loss via terms of trade so long as the balance of payments can be adjusted smoothly.

The impact on the balance of payments can be more important. The external balance is likely to be favourably affected by increased foreign investment and its possible import-saving or export-creating effects, despite increased outflow of foreign profits. But if such investment is import-creating, the external balance is adversely affected and this loss has to be deducted from other gains. If the growth of transferable income from foreign investment is not higher than the growth of foreign trade, the country will not usually face a crisis. But large fluctuations in the net inflow of foreign capital are likely to cause crises, and the higher the average flow the more serious is the danger.

Attempts to attract foreign capital by policy measures like guarantee of repatriation and tax concessions generally involve some costs. Conversely, measures to secure minimum national participation in the equity of foreign firms may reduce foreign investment but may bring other economic and political benefits.

Even after removing the original assumptions, the analysis remains highly simple, as it considers only labour and capital, does not distinguish between different types of foreign investments, and leaves out government borrowing from abroad.

It is suggested, in conclusion, that with modifications this Australian case can be adapted to underdeveloped countries where heavy under-employment exists and the marginal product of labour in the economy as a whole is far less than the wage rate and marginal product in the organised

sector. Assuming that the highest possible employment at a given real wage rate exists in the organised sector, it can be argued that increased foreign investment would make possible a greater transfer of labourers from the unorganised to the organised sector.

(S.R.B.)

R. R. Nelson, "Growth Models And The Escape From The Low-Level Equilibrium Trap: The Case of Japan", *Economic Development and Cultural Change*, July 1960.

This paper restates the requirements suggested by the equilibrium growth model for the escape from the low-level equilibrium trap. It is suggested by the model that innovation rather than high rate of capital formation is the crucial factor in the process of economic growth. The term "innovation" has been used as a catch-all to explain any increase in output that is generated from a given population and capital stock. It has been shown that the growth of the Japanese economy from 1868 is the type of the model mentioned above.

The Tokugawa family established unchallenged military supremacy in Japan at the end of the sixteenth century. The first century of Tokugawa rule was one of relative prosperity. As peace and harvesting replaced war and crop destruction the Japanese population rose steadily. But by 1700 little land remained onto which population could expand. The income of the growing peasant population was forced to the subsistence level. Japan's capital, income, and population remained nearly constant for 150 years.

With the lifting of the curtain that had kept Japan isolated from the West, the possibilities of increasing productivity by applying Western technology were enormous. But Tokugawa policies, aimed at maintaining the status quo, provided serious obstacles to innovation and capital formation. The status of the economic elite was secure in the tradition oriented society.

In 1867 the Shogun was ousted and his rule replaced by that of a government dominated by Chonin and Samurai interests. The statesmen of the new government fully realised that a strong productive economy should replace feudalism.

The evidence is clear that income, and per capita income, began to grow rapidly. The long constant Japanese population also started to grow at an increasing rate, averaging one per cent per annum during the seventies and eighties.

But these two decades do not appear to have been marked by a rapid growth of the capital stock. The savings rate was below 5 per cent of income. Thus the rapid growth of per capita income prior to 1900 cannot be adequately explained by a rapid rate of capital formation. The rate of growth of capital may have exceeded the rate of growth of population, but not by very much. From 1900 onwards, the growth of per capita income in Japan is explained adequately by a rate of growth of capital which significantly exceeded the rate of growth of population. The high post-1900 savings rate

is explained by, rather than explains, Japan's take-off into self-sustained growth.

The primary factor raising per capita income in the 1867-1890 period was increased economic efficiency—innovation in the sense mentioned above—rather than massive capital. Existing factors of production were more fully employed and economically allocated and new production techniques were introduced. The limited supplies of new capital were skillfully placed. Growth was initiated by the shift of the production function and not by that of the savings function.

The slack in the Japanese economy was enormous, and the taking up of this slack enabled Japan to escape from the low-level equilibrium trap.

(A.R.K.)

K. Ohkawa and H. Rosovsky, "The Role of Agriculture in Modern Japanese Economic Development," *Economic Development and Cultural Change Vol. IX, No. 1, Part II*, October 1960.

Japanese development is characterised by sustained rapid economic growth. The authors attempt to analyse the role of agricultural development in this growth process.

Period 1: From the Meiji Restoration to World War I (1878-1917)

During these years, the expansion rate of food crops was high enough to outstrip the rate of population growth. Gross and net output of agriculture in real terms increased steadily throughout the period (2.3 per cent annually). Land productivity rose by 80 per cent with an increase of only 35 per cent in arable land, which means that land-saving technological innovations were of great importance. Labour productivity increased annually by 2.6 per cent. The expansion of output was almost large enough both to supply the needed food for a rapidly growing urban population, and to meet the increased food demand stemming from a rise in per capita real income. Thus agriculture made a necessary contribution to rapid industrialization and urbanization. Moreover, export surpluses, largely originating in agriculture, contributed much to the economic development of the country by making possible the importation of foreign capital goods used in the modernization of industry.

The industrial revolution in Japan was not preceded or accompanied by an agricultural revolution of the Western type. The growth of agriculture and industry was harmonious. The early industrialization of Japan was characterised by an unchanging organisation of the rural community and sharp increases in agricultural productivity, while Western technology was making rapid progress in manufacturing.

The key advances in Japanese agriculture were land improvement, (including better irrigation and drainage facilities and reclamation of arable

land), superior seeds, better methods of crop cultivation, and increased input of manures and fertilizers. High rent in kind, the rising price of rice, the falling land tax burden, the lack of absentee ownership, the establishment of experimental stations and extension services, and the provision of technical and general education—all these gave incentive for investment in agriculture.

Period 2: From World War I to World War II (1918-1940)

In this period, agriculture shifted from being a dynamic supporter of development to a relatively passive position. The first World War had a strong favourable impact on the growth rate of the Japanese economy. Real net output produced by the primary sector continued to increase but at a declining rate, while the growth rate of secondary and tertiary industry continued to rise. The per hectare yields and total output of rice grew impressively. But land and labour productivity rose at annual rates of less than 1 per cent. In consequence, the supply of food could no longer keep up with demand. Population increased at an annual average rate of 1.3 per cent. With a reduced rate of output expansion, a large deficit in food supply arose. Imports of rice increased sharply right after the war and continued to grow until the end of the 1930's. Japanese rice growers suffered a great deal from the competition of foreign suppliers. They had reached their most efficient level of production by the second decade of the 20th century and were defenceless against the lower-cost colonial producers (Korea and Taiwan).

The authors find that in the prewar period the required investments in agriculture were smaller than the savings generated by this sector. The resulting surplus were siphoned off to the non-agricultural sector.

The Government played a very important role, especially as investor, in Japanese development. Subsidies were one method of government investment. Until the 1920's, practically no subsidies were allotted to agriculture; the secondary and tertiary sectors were the main recipients throughout the entire period. A highly conjectural conclusion is that the net capital flow may have been reversed some time after World War I.

Japan, like all other developing countries, underwent industrialization in the context of a decline in the relative shares of income produced and labour employed in agriculture. The proportion of national income derived from agriculture was 64 per cent in 1878-82, 36 per cent in 1913-17, and 17 per cent in 1938-42. The share of the labour force engaged in agriculture was 76 per cent, 59 per cent and 44 per cent during the same periods.

(I.K.)

W. Robertson, "The Tin Experiment in Commodity Market Stabilization,"
Oxford Economic Papers (New Series), October 1960.

In this article, the author critically examines the provisions and working of the 1953 Tin Agreement and concludes that the effectiveness of buffer stocks as a stabilizing influence in the world's tin markets, particularly during the recession of 1957-58, has been very limited.

I

Major aspects of the 1953 Agreement were briefly as follows: The six producing members (Bolivia, Indonesia, Malaya, the Congo, Nigeria and Thailand) normally accounted for over 90 per cent of world tin output (excluding the Communist countries). One half of world consumption (excluding the Soviet Union) was concentrated in the United States, Western Germany and Japan (U.S. alone accounting for about one-third of world consumption). Export quotas were compulsorily allocated on a quarterly basis, the decision being taken by a majority of the votes of producing and consuming countries. The maximum size of the buffer stock was fixed at 25,000 tons and was later supplemented by another 5,000 tons with the help of a special fund (as against the 1934-5 buffer stock of only 8,000 tons); these amounted to some 16 per cent of total output covered by the Agreement. Both the buffer stock and the special fund were financed by the producing countries. The London 'spot' price was to be kept within the range of £640 to £880, beyond which purchases and sales for and from the buffer stocks became automatic and unconditional. However, between £640 and £720, the manager had discretionary power to buy; between £720 and £800 there was to be no intervention; and between £800 and £880, the manager had discretionary power to sell.

It is noteworthy that the buffer stock envisaged under the 1953 Tin Agreement was first constituted in July 1956 when the London 'spot' price of tin had fallen sharply to £742 per ton from £814 in January 1956. What is more, when the stock came into existence the contribution by the producing countries was in cash rather than in kind. Thus the buffer stock system proved to be unsatisfactory at its very inception.

As shown in the table below, the London price of tin (after the creation of buffer stock in July 1956) moved within £750 and £789 in the third quarter of 1956, and according to the Agreement there was to be no intervention. Subsequently, when the price rose above £800 and touched £852 in November 1956, the manager could not use his discretionary power to sell tin in the market, because he had no supply of tin metal in the buffer stock. Here again the buffer stock system failed to achieve its purpose.

London 'Spot' Tin Price (£ per ton)

Month	1956	1957	1958	1959
January ...	814	789	731	759
February ...	806	771	732	773
March ...	806	771	731	780
April ...	764	774	731	783
May ...	748	765	731	784
June ...	742	763	730	788
July ...	750	753	731	793
August ...	769	740	730	793
September ...	789	740	718	793
October ...	805	732	741	794
November ...	852	730	758	795
December ...	806	730	756	789

When the price progressively declined from £852 in November 1956 to £771 in March 1957, an entirely new range of support prices was introduced under a modified Agreement. An important change was that the old floor price of £640 was raised to £730 and the manager given discretion to buy the metal within the range of £730 to £780. As a result of his intervention, the substantial price declines recorded by non-ferrous metals generally during 1957 were much less pronounced in the case of tin. Nevertheless, the increase in floor prices to £730 was a subject of much criticism. And by December 1957 the buffer stocks in hand had risen to 15,000 tons.

Under the 1953 Agreement the Tin Council could impose export restrictions when the buffer stocks increased to 10,000 tons. This was done; and the export cuts were severe indeed, so that in the first nine months of 1958 total exports of the six member countries amounted to only 73,000 tons as against 109,000 tons in the same period of 1957. In the last quarter of 1958, exports were as low as 52 per cent of the members' quarterly rate of production in the year ending September 1957. Meanwhile, the Tin Council's buffer stock funds had been fully spent by March 1958, and further purchases were carried on for a few months only with additional funds provided by the producing countries.

This brings out clearly the limited utility of the buffer stock system in stabilizing markets. Of course, the situation was aggravated by the failure of the Tin Council to get current production sharply curtailed. Moreover, lack of support of the London 'forward' prices, as well as 'spot' prices outside the London market, led to uncertainties and confusion. In consequence, the buffer stock support had to be withdrawn earlier than it should have been. There followed a crash in London prices to £642 in September 1958. But prices soon recovered to £718; and in the last quarter of 1958 they remained above the £730 floor because of persistent reduction in output and exports.

II

The author draws attention to the fact that despite the recession, the actual decline in world consumption of tin has been comparatively small. According to the estimates of the Tin Council, world consumption (excluding Communist countries) fell by only 8 per cent from 1956 (150,000 tons) to 1958 (139,000 tons). Declines occurred in the U.S. (from 60,400 to 48,200 tons) and in U.K. (from 22,200 to 20,400 tons). However, there was a small increase in consumption in West Europe (from 38,600 to 39,400 tons) during the period 1956-58. As compared with the small decline in world consumption of tin, total world production (excluding the Communist countries) dropped sharply from 164,000 to 116,000 tons between 1956 and 1958. This decline in output resulted from the reduction of commercial and governmental stock-piling and greater imports from the Soviet Union; U.S. stock-piling, which reached its peak in 1950, was ended in early 1953.

Prior to the recession of 1957, there had been an artificial rise in prices owing to the Suez crisis and the threat of a Malayan strike; this aggravated the subsequent decline. There was also a general belief that the revision of the floor price by the Tin Council from £640 to £730 per ton was on the high side and was not in step with the long-term excess capacity discernible in the industry.

III

In fact, the Tin Council did not make any attempt to tackle the problem of non-cyclical excess capacity in the industry. The investment boom of the 1920's had created considerable excess capacity. Although a similar investment boom did not occur in late 1940's and early 1950's, consumption in the two major tin-using countries had been declining in recent decades. For example, in the U.S. consumption in 1947 was only 59,200 tons as against 83,500 in 1928-9; in 1956 and 1958 it stood at 64,400 and 48,200 tons respectively. In the U.K., consumption was as follows: 24,500 tons in 1928; 27,400 in 1947; 22,200 in 1956; and 20,400 in 1958. This decline in U.S. and U.K. consumption was offset by increases in Continental Europe and Asia. But in future there may not be such offsetting increases in consumption in the developing countries, because U.S. methods of tin-economizing may spread elsewhere. Furthermore, the Paley Commission's projections of tin consumption for the U.S. appear to be somewhat over-optimistic. From 1950 to 1956-7, U.S. consumption fell by 20 per cent, as against the Paley projection of a 4 per cent increase. Consumption in the other non-Communist countries rose by 20 per cent, as compared with an anticipated rise of 12 per cent. In the low-income non-Communist countries, however, there are "no signs of a significant expansion of consumption". To this should be added an important uncertainty about the possible size of surplus in the Communist countries and its impact on world markets.

IV

Thus, current criticism of the 1953 Tin Agreement rests mainly on the level of support prices. In prewar, the average price was kept closely linked to the costs of high-cost producers. A future policy of high prices will lead to greater economy in use of tin and substitution by aluminium and lead. U.K. experience during the years 1946-57 shows that "the downward trend in the price of lead relative to the price of tin has been associated with a downward trend in the ratio of tin to lead used in solder". As regards of low-income countries, increases in consumption of tin as income per capita rises will depend largely on the price of tin in relation to substitutes for both traditional and new uses.

V

The producer members of the Tin Agreement defended their decision to raise the floor price from £640 to £730 per ton on grounds of the need to renew exploration and development of mining areas. However, the author feels that "the minimum support price seems ambitiously high in the light of market experience since 1953". He examines the trends in dividends declared by a number of companies during the period 1953-1958 and concludes that "that part of the industry has done reasonably well at a price considerably below £800 as long as output was not restricted". The producers further defend a high minimum price on the ground that a price below £700-£800 range would lead to closure of marginal mines for ever. They argue that a non-renewable resource like tin should be exploited keeping in view the interest of both the present and future generations: if for the sake of lower prices, only higher-grade deposits are exploited now, future generations of consumers will suffer. But the author points out that substantial improve-

ments can be made in the recovery of abandoned deposits; and that the scope for substitution is so large that future consumers may not, after all, be penalised.

VI

The United Nations Committee which produced the report *Commodity Trade and Economic Development* (1953) did not favour the combination of quantitative restrictions on exports and a limited buffer stock. The Committee gave "qualified approval" only to quota agreements for bringing about an orderly reduction of capacity in those industries which face difficulties caused by changes in technology or taste.

Future prospects, of the tin industry are uncertain. Therefore, the utility of buffer stock system is not clear, especially when the minimum support price is kept so high as to maintain high-cost capacity. The existing American stockpile is believed to be in excess of strategic needs and a part of it could be released whenever there is pressure of demand outstripping supplies. Because export quotas would be imposed when the buffer stocks reached 10,000 tons, the buffer stock system alone is expected to play only a minor role. Its role is further limited by the prevalence of noncyclical excess capacity in the tin industry. In summing up, the author suggests that since all the producing members of the Agreement belong to low-income countries, the high-income industrially advanced countries should help those which are burdened with high-cost capacity to develop 'alternative industries which produce either exports or import substitutes'.

(A.M.G.)

T. W. Schultz and S. R. Sen (Papers), R. O. Olson and L. Witt (Discussion); "Impact and Implications of Foreign Surplus Disposal on Under-Developed Economies," *Journal of Farm Economics, Annual Proceedings*, December 1960.

In August 1960, the American Farm Economic Association held a symposium on the impact and implications of United States farm surplus disposal (P.L. 480 exports) on the recipient countries. The following is a brief summary of that part of the symposium—covering two papers and discussion—which dealt with the underdeveloped countries receiving P.L. 480 products.

I

The first paper, by Professor Schultz of the University of Chicago, maintains that U.S. foreign economic policy is devised to fit national convenience; and that P.L. 480 seeks to solve the problem of the ever-growing U.S. farm surplus. The problem cannot be solved in this way, however. It is suggested that a real solution requires a lowering of farm export prices, and the substitution of increased dollar assistance for P.L. 480 exports. But a major obstacle to greater dollar assistance to underdeveloped countries is the current belief that military aid is good economic assistance and that P. L. 480 exports can adequately promote economic growth.

The author examines three related questions: (1) the costs and value of P.L. 480 products; (2) payments to the United States for P.L. 480 products; and (3) the impact on agriculture in the receiving countries.

The costs to the U.S. of P.L. 480 products can be measured in two ways. The costs for which appropriations are made by the U.S. Government to reimburse CCC for its sales under Title I of P.L. 480, include many expenditures that do not add anything to the value of these products to the recipient countries. Even at the pegged U.S. export prices the value of P.L. 480 products is 30 per cent less than CCC costs. This is the officially stated P.L. 480 assistance. But the costs based on a marginal revenue test might be zero or negative. If there were no P.L. 480 exports and all farm surpluses were sold along with the other U.S. agricultural exports, total U.S. export earnings might have been the same as or even lower than before. Given the low price elasticity of world demand for wheat, which accounts for 50 per cent of P.L. 480 exports, and given the current level of farm output, this conclusion is unavoidable.

The value of P.L. 480 exports at free world market prices is only half of CCC costs. But their value to the recipient countries is even lower than this, because these countries would prefer dollars in unrestricted form to farm products of equivalent value at world prices. The author guesses that \$100 worth of U.S. farm products at world prices is desired as much as \$75 in unrestricted form. Thus the value of P.L. 480 imports to underdeveloped countries is 75 per cent of their market value, or about 37 per cent of CCC costs.

All P.L. 480 exports are sold for inconvertible foreign currencies deposited to the account of the U.S. Embassies. Because of the essentially un-integrated nature of the U.S. Government, there is much confusion in the administration of these counterpart funds by various Departments and Agencies for different purposes. Up to September 1959, P.L. 480 exports amounted to 4 billion in foreign currencies. Of this total, some \$570-\$855 million (including \$411 million earmarked for military purposes; and other allocations for developing the U.S. farm export market, for the U.S. Information Agencies, etc.) may be considered as payments to the U.S. by the recipient countries. The rest of the outstanding balance is virtually a grant (although no grant is actually made), since there is little prospect of its being converted into dollars. Hence it is suggested that U.S. policy should be brought into line with this fact; and that any such foreign currency balance in excess of its foreseeable needs should be converted into a grant to the recipient country. Otherwise, this ever-growing balance will create political complications and embitter the relations between the donor and the receiver.

All reasoning is based on the following key estimates:

	dollars (m)	Per cent of CCC costs
1. If CCC costs of P.L. 480 products were	5,700	100
2. Sales for foreign currencies become ...	4,000	70
3. Value at world market prices equals ...	2,850	50
4. Value to receiving countries ...	2,110	37
5. Upper estimate of the U.S. receipts ...	855	15
6. Lower estimate of the U.S. receipts ...	570	10

Thus \$4 billion of P.L. 480 imports (*i.e.*, \$5.7 billion in CCC costs) increases real resources by \$2.1 billion; and if the recipient countries pay \$570 million to the U.S. the net addition to real resources is \$1.5 billion. By means of internal programmes, these additional resources can be channelled into higher consumption or capital formation, or a combination of both.

But the effects of P.L. 480 imports on agriculture in the underdeveloped countries are likely to be adverse. U.S. policy regarding P.L. 480 assistance is definitely set against the receiving countries using these funds to increase their production of surplus farm commodities other than food and feed, or to increase their export capacity of farm products in which the U.S. is surplus. Moreover, the prices of comparable farm products will fall substantially as a result of P.L. 480 imports if the elasticity of demand for such products is low and if domestic farm production and imports remain unchanged. This will weaken the incentive to maintain or expand agricultural production; and unless the recipient country considers its agricultural development unimportant, economic growth will be impaired. Stabilisation of otherwise-fluctuating agricultural prices (even at a lower level) is one way of averting the adverse effects of P.L. 480 imports and is likely to act as an incentive to expanded production.

II

The second paper, by Dr. S. R. Sen of the Planning Commission of India, analyses the problems and prospects that face a country receiving P.L. 480 assistance.

In the early years, the United States tried to impose a number of conditions on the recipient countries, and also possibly thought that these surpluses could be used to induce them to follow certain types of social and economic policy. With the exception of budgetary support for military purposes, such assistance was given annually, and on the basis of projects many of which were of a relief or welfare rather than a productive nature. Some under-developed countries were worried about effects on their own agriculture and export trade, and about possible distortions in their economic development programmes. India emphasised that P.L. 480 assistance should not be on a project basis, but should be integrated with its development plan, that continuity for a number of years should be assured; and that any project which could not eventually be carried out with Indian resources should not be started with P.L. 480 assistance.

When this aid was integrated with the recipients' development programmes, they accepted it unhesitatingly. The Indian experience since then has been encouraging.

P.L. 480 imports (mainly wheat) to India from 1956 through 1959 totalled \$1365 million in terms of CCC costs. The U.S. sales value was \$927 million, out of which \$149 million was retained for American uses, \$92 million was used for loans to American private business in India, \$194 million was given as a grant, and \$492 million as a loan for India's economic development. The grant portion party covers the difference between the costs of imports from the U.S. and from other exporting countries.

P.L. 480 supplies helped substantially to mitigate shortages in the economy and to keep prices in check. Any possible adverse effects on agriculture was effectively counteracted by the tempo of development activities and appropriate policy measures. India's wheat production increased during the period. Efforts to promote agricultural development were never relaxed, and increasingly greater allocations were made in each succeeding Plan period. The counterpart funds were fed into the development Plan and contributed 7 per cent of the Second Plan outlay. India's commercial purchases from other countries were not reduced in spite of the P.L. 480 imports.

A study of the effects of P.L. 480 supplies on 26 countries shows that some of the other under-developed economies had a similar experience. Countries which utilised this assistance primarily for economic development benefited more than those which used them for non-development purposes and became increasingly dependent on foreign assistance. P.L. 480 assistance was of considerable help in building up the infra-structure of these economies.

But there are some unwelcome developments in the American policy. Any idea of treating commodity assistance as a substitute for direct foreign exchange assistance portends grave danger for the underdeveloped countries. The officially published dollar value of P.L. 480 assistance looks much larger than its real value to the receiver, and even the latter is greatly reduced if the aid is not backed by an adequate supply of foreign exchange. Indeed, the net effect may well be a drag on the underdeveloped economies.

P.L. 480 assistance will be truly beneficial if the receiving country has a balanced development programme and the counterpart funds are fitted into it. These funds do not represent any additional real resources, and if (under pressure) they are used for projects outside the overall programme, the result will be inflation and maldistribution of scarce resources. Then, too, Cooley Loans (to private U.S. business) out of counterpart funds may involve the U.S. in political controversies in the developing country. Hence a solution is necessary for the problem of the growing U.S. balance of counterpart funds.

The "programme" approach is always better than the "project" approach. The former may not be feasible in certain countries. But it is a retrograde step to insist on a project approach for a country which has a development programme. There are good projects, like irrigation and embankment, that may be undertaken with P.L. 480 assistance, but they should be incorporated into an overall development programme as early as possible. And whether the country has a plan or not, it is essential to strike a proper balance between development projects and welfare projects, so that eventually the welfare projects could be continued with the country's own resources.

Again, to insist that a recipient country must not reduce its normal imports is harmful for a developing country facing a balance of payments problem. This condition must be relaxed; otherwise effective aid will be reduced.

In conclusion, the author points out that a long-run solution of the U.S. farm surplus problem can only be found in an expansion of export

markets through industrialisation of the underdeveloped countries. But of more than \$3 billion in annual U.S. foreign aid, three-fourths are now allocated to defence and political purposes and only one-fourth to economic development. For accelerated economic growth in the underdeveloped countries and for economic stability in the United States, there should be an effective surplus disposal programme accompanied by direct foreign exchange assistance in larger amounts.

III

In his discussion paper Professor Olson, while agreeing that the U.S. costs in terms of marginal revenue forgone might be zero or negative, doubts that the value of P.L. 480 products to the recipient countries is as low as 37 per cent of CCC costs, since food import has a high priority in such countries.

He does not agree with Dr. Schultz that P.L. 480 imports will harm agriculture through a price disincentive. Since there are no alternative uses of agricultural resources, output will not fall. There is no reason why the recipient governments would give up their efforts to stimulate agricultural development.

Rather than lowering agricultural prices, P.L. 480 imports make possible, through deficit financing, the employment of surplus labour for capital construction. The absence of P.L. 480 supplies would slow down development, it would not push up prices.

On the basis of American-owned counterpart funds, money is created and spent by the recipient Governments for their development plans. An addition to resources is made when P.L. 480 imports enter the country, and the gain depends on the extent to which it uses this opportunity to step up development activities with created money or loans backed by U.S. deposits in its banks. However, inflationary pressure would be generated if the U.S. spends this balance, since it does not constitute any additional resource. It would better be given over to the recipient country as grant.

Professor Olson agrees with Drs. Schultz and Sen that P.L. 480 aid cannot be a substitute for direct foreign exchange assistance.

IV

Professor Witt comments that while Dr. Sen is rather over-optimistic about the benefits of P.L. 480 imports, Dr. Schultz would substitute dollar aid for commodity assistance on the ground that the latter is only of limited value for economic growth. While agreeing that larger dollar aid for economic development is necessary, Professor Witt believes, that as matters now stand, there is a larger proportion of development assistance in P.L. 480 than in the Foreign Aid (including military aid) programme. The United States is misreading its self-interest, which lies in the development of the underdeveloped countries. This requires not military aid, but unilateral transfer of purchasing power to support their development programmes.

If all support given to U.S. farm products through P.L. 480 and other

means were withdrawn, the market value of the principal surpluses (quite large relative to total world exports) would be much less than 50 per cent of CCC costs. Modest price reductions and dollar grants would not dispose of this surplus as Dr. Schultz suggests.

Dr. Schultz overstates the role of price in agricultural production in the underdeveloped countries. But it is quite possible that commodity assistance will tend to reduce their efforts to solve their own food problems. For such countries, economic growth requires increases even in the output of those commodities which the U.S. has in surplus.

(S.R.B.)

E. G. Stockwell, "The Measurement of Economic Development," *Economic Development and Cultural Change*, July 1960.

Because of the importance of developing economies in the world today, a good definition of "underdeveloped economy" is very much needed to classify countries in terms of their level of economic development, and to measure their economic progress over time. Per capita income cannot be calculated in many of these countries on account of the paucity of empirical data; indeed, the absence of such statistics may itself serve as an indicator of economic underdevelopment. Thus it is necessary to rely on indirect measures. This paper examines the possibility of using some of the demographic measures, namely, crude birth rate, crude death rate and infant mortality, as indicators of economic development.

Historically, these have been observed to have an inverse relationship to the stages of economic development. But exceptions are not hard to find. In some cases these measures, whether used separately or jointly, may be very misleading. For instance, the crude birth and death rates in the Philippines are 24.4 and 9.2 per thousand respectively, as compared with rates of 24.9 and 9.4 in the United States; such figures would suggest that these two countries are at similar economic levels.

Although none of these measures provides an unambiguous measure of economic development, this paper attempts to determine which one or combination of them will be the *best* indicator. Seven indices of the three measures and their combinations are prepared for thirty selected countries. Then these indices are correlated with the 1949 per capita income estimates for the thirty countries in question, on the hypothesis that the index having the highest negative correlation with annual per capita income will be the best demographic indicator of economic development. Infant mortality tops the group with an inverse correlation of .801.

Finally, the validity of the infant mortality index is tested against other known measures of economic development, such as daily energy intake in the form of food, extent of literacy in the population, degree of urbanization, and degree of industrialization measured in terms of per capita steel consumption or occupational composition of the labour force. All of these measures fairly substantiate the classification of the thirty countries on the basis of the infant mortality index.

(N.C.)

S. Wellisz, "Economic Planning in the Netherlands, France and Italy", *The Journal of Political Economy*, June 1960.

The purpose of this paper is to analyse the underlying principles of the economic Plans of the Netherlands, France and Italy. The author is mainly concerned with the logical inconsistencies in the Plans and with the effects of various policy recommendations on the economic development of those countries.

Long-Term Planning

The long-term Plans are mere projections of policy goals rather than detailed policy recommendations. Short-term considerations and the influence of exogenous variables determine actual policy. The author examines both types of Planning in each of the three countries.

The Dutch long-term planning model (1956-70) is based on some invariants which have been obtained from historical data. The model assumes constant factor proportions.

The success of the Dutch Plan is directly linked with the assumption of factor complementarity. But this assumption is fraught with grave danger. Factor proportions differ from one industry to another and inter-sector proportions do not remain absolutely fixed over time. Hence the aggregates also change. The assumption of fixed co-efficients means that one of the factors is likely to be redundant: and that there will be no equilibrating forces in the economy once a disturbance arises.

The assumption of fixed factor proportions may also lead to mistaken policy recommendations. For example, the Plan excludes all measures producing faster capital accumulation and replacement of labour by capital. This prevents modernisation and more rapid growth.

The Italian Plan, known as the Vanoni Plan (1953-64), is based on the assumption that, given the state of technology, the capital/output and labour/output ratios are fixed in all sectors of the economy. Unlike the Dutch Plan, it does not assume that the aggregate capital/labour ratio is constant. The Vanoni Plan also takes into account the experience of more advanced countries.

But the unfortunate part of the Vanoni Plan is that it fixes 5 per cent per annum increase in national income as a policy goal; a higher rate of productivity increase is held to endanger the full employment programme by requiring too much capital for modernisation purposes and not enough for the creation of new jobs. This implies that productivity increases are a function of investment, which in turn implies that capital and labour are substitutable. If this reasoning is accepted, the entire calculation of investment needed to attain a given level of employment becomes meaningless.

The Vanoni Plan also assumes that Public investment will always lead to an expansion of private investment. The absence of social capital might hamper development, but its presence does not necessarily bring about the desired development. The policy implications of this assumption are harmful.

It suggests the idea that every public investment is good and it ignores profitability calculations for public projects.

The French Plan (1956-65) does not try to discover how fast the economy can grow if an optimal policy is pursued. It enumerates no goals and proposes no policies. It is simply a forecast.

The Plan estimates the GNP on the basis of increases in productivity and active population growth. The Plan estimates that a 3 per cent and 4 per cent rise in productivity will lead to a rise in per capita income of 4 and 5 per cent, respectively.

This process of calculation has some policy implications. For example, according to the Plan investment of 19.4 and 20 per cent will be necessary for a growth of 4 and 5 per cent. But the implicit incremental capital-output ratios of the two variants are 4.9 and 4.0, respectively. These ratios appear to be the result of different rates of technological progress, assuming other factors to be constant. Since the policy-makers have no control over technological developments, the Plan fails to provide any criteria for choosing between policies resulting in rapid growth and policies resulting in slow growth.

Short-Term Planning

The Dutch annual Plans are essentially forecasts in that they contain no policy recommendations. However, the preparation of the forecasts exercises a profound influence on the Government's policy.

The first drafts of the annual Plan predict the results of alternative government policies. In this context, the Government prepares its economic programme. The final Plan embodies the Government's choice of policies and takes into account the national budget for the Planning year.

The French short-term Plan, on the other hand, is an official expression of government economic policy. The Plan is closely followed in the socialised sector while the private sector is also brought into conformity with the Plan through the exercise of various controls.

The method of preparation is similar to that of the Russian approach in many ways. In both cases, over-all Plans are drawn by the planning authority, modified on the operating level, and coordinated once more by the planners. In both cases reliance is placed on physical balances.

The results of the French Plan are not very encouraging. This is because the equilibrium tables are based only on historical coefficients and not on informed guesses about the future. This is particularly important where changes in technology and relative scarcity factors are quite rapid. In spite of its weaknesses, the progress of French Planning is remarkable. The Plan recognises the interrelationship of the economic system and coordinates the various unrelated administrative actions.

Regional Planning

The wide disparities of income in the various regions of France and Italy have led to the development of special policies there. But the Plans are guided more by socio-political than by economic reasons.

The Italian Regional Plan is based on the expectation that increased government investment in those regions will increase private investment. The Government also provides many tax concessions. But the benefit of external economies in the private sector has been counterbalanced by lack of skills and facilities. Moreover, the subsidy to capital has induced more capital intensive plants in those areas, leaving the employment problem as acute as ever.

The French Regional Plan is primarily aimed at reducing the industrial congestion of Paris. But there is as yet no evidence to indicate that such congestion has produced external diseconomies. In effect, then, the Plan ignores the cost of decentralisation.

Conclusion

A realistic Plan has to take into account socio-political, as well as economic, factors. The planners should, however, point out the consequences of a political decision. They should also suggest the most economical methods of achieving policy goals. The success of a Plan depends as much on the ability of the planners as on their political independence.

(A.R.)