Summary of Selected Articles


There is little relation between the barriers to European industrialization in the late eighteenth century and the obstacles to the development of modern backward areas, because pre-industrial Western Europe was (in terms of absolute size, ratio to natural resources and demographic factors) more capable of raising per capita income and was wealthier than many backward lands today. Besides, Western Europe had already undergone the social cultural and ideological transformation associated with the Renaissance and the Reformation which conditioned them for economic growth. Agreeing with this view Mr. Supple says that the obstacles faced by modern backward countries should be balanced by their access to technology, experience and capital of industrialized countries. However, the contrast between per capita income is by no means as sharp as some scholars imply.

Until the late eighteenth century, no technological advance and industrialization took place in Europe. The economic expansion between fifteenth and eighteenth century was without significant structural change. The discoveries of new lands and resources had hardly any influence on European economic history until the very end of the seventeenth century.

For economic and social descriptions of pre-industrial Europe, the author selects some important aspects of the supply of labour, capital, and enterprise for special consideration and takes pre-industrial England (an economy without sustained economic growth) as the principal historical example.

The population of England and Wales in the sixteenth and seventeenth centuries, though small, was pressing on available resources, given the prevailing techniques and economic organisation. The standard of living of large numbers of Englishmen was pitifully low. The average productivity of labour was also very low. The available labour force was a relatively small proportion (between one-half and three-fourths of the comparative percentage for modern England) of the total population. Even the working part of the population was only intermittently employed because of primitive technology and economic organisation, and imperfections of market structure. There was voluntary unemployment too, as labourers took irregular holidays, working only a few hours daily, or a few days weekly. Seasonal underemployment existed in agriculture due to labour-intensive techniques. In terms of the low productivity of many of its inhabitants, sixteenth- and seventeenth-century England was, indeed, an underdeveloped economy. Labour power was utilized inefficiently because of limited supply of advanced technique and limited scope for its combination with capital and enterprise.

The economy of early modern England was incapable of investing, in socially productive uses, more than a relatively low percentage of its national income. Much of the income was spent on purchase of land, speculation and conspicuous and luxurious consumption. Capital was not yet absolutely
scarce. It was merely, from the viewpoint of growth, badly distributed. And its mal-distribution was to a great extent a function of the pull of market forces.

England in the early modern period was plentifully supplied with speculative and financial entrepreneurs. The enterprising capitalist was the merchant engaged in domestic and foreign trade. Many underdeveloped countries today have a scarcity of industrial entrepreneurs though they have an abundance of those speculative, financial and commercial entrepreneurs who flourished in early modern Europe. It is the absence of Schumpeterian innovators, managers, and captains of industries that result in economic stagnation in these countries. The existence of certain social structures, specific social and cultural values, and the high profit (with lesser amount of risk) in trade, are the reasons for the presence of traders and speculators in pre-industrial economies.

The historical problem of growth is, therefore, to be explained by saying that in some few countries individual action under normal capitalist incentives was responsible for progressively enlarging the area of productive investment and entrepreneurship, and, by these means, an almost spontaneous process of cumulative growth commenced. Further, stimulus to development was provided through international external economies and demonstration effect of growth elsewhere.

On the basis of the above analysis, the author emphasizes three characteristics of the mechanism of economic growth. Firstly, the historical route to expansion has in most cases left the bulk of economic effort in private hands, with the role of the state confined to encouraging productive private investment. Now there is no economic reason why this should not remain so. Secondly, it follows from the first characteristic that the role of ideology becomes more and more significant. Finally, if economic rationality is defined as the balancing of individual cost against individual benefit, “underdevelopment can be considered as the normal outcome of the rational allocation of private resources”. In that circumstance, rapid economic growth will depend upon some possibility of either moulding the environment of enterprise in such a way that the available entrepreneurs will begin to flow into new fields, or a strong upsurge of irrational behaviour and emotional choice.

(M.I.K.)


The purpose of this paper is to single out the effects, on the economies of underdeveloped countries, of the size of international markets for their products. These countries tend to underestimate the contribution to development of a widening of markets as compared to accumulation of capital and the progress of technology. The opportunities of specialization and development, and the conspicuous momentum to the economy arising out of an expansion of export trade are known facts in history. International trade, because it means dependence on external forces, is still not a popular
engine of growth in spite of its contribution to world economic development. Besides, international trade is considered to bear on a limited sector of the economy; to be highly variable; to yield unfair prices for exports on an average; and more recently, to have ceased to be a sufficiently powerful engine of development as it was, for instance, in the nineteenth century.

A careful analysis of production and exports of these countries brings out the central issue whether the market for the exports of the underdeveloped countries is so inelastic that it no longer provides a satisfactory engine of growth, or, in other words, that their development is being cramped by stagnation of world demand for their exports. It is true that the nineteenth century process of growth-transmission works rather differently now as the underdeveloped countries are no longer the frontiers of an expanding world economy. Expansion in total world industrial production during the 19th century was far less than that in foreign trade, suggesting that foreign markets were growing much faster than domestic markets and that external impulse to growth was operating more powerfully than domestic impulse. Twentieth century experience in this respect is almost the opposite; world production expanded much more rapidly than trade. Also, trade between industrial countries has grown more than between industrial and agricultural countries, because of the changed character of demand or the inability of the underdeveloped countries to meet that demand. As a consequence, a marked change in terms of trade against primary products is apparent during the decade of the 1950's. This evidence is not conclusive, however, and a different interpretation of the facts is possible.

A detailed examination of the movements of prices and terms of trade of primary products brings out four conclusions.

1. It is desirable to widen the range of exports of underdeveloped countries in view of the present low elasticities of their narrow range of exports; more efforts should be made by the underdeveloped countries to develop domestic sources to substitute simpler types of import manufactures.

2. Exports of underdeveloped countries should be made more competitive in the world market; attention should be given to domestic price stability, and sectors other than export should be encouraged.

3. Agricultural production should be expanded as it is by far the most important sector in these economies.

4. Industrialization should be undertaken and expanded if agriculture does not prove to be responsive. The market problem arises again here. It is for developed countries to offer markets to underdeveloped countries as domestic markets of underdeveloped countries will not be sufficient to warrant any speedy industrialization. It is in this context that trade can play an important role in the economic development of underdeveloped countries.

This paper seeks to find out a way of determining the optimal path of economic growth of an underdeveloped country. Optimal growth is defined as the maximum welfare over a finite period (f) required to accumulate sufficient capital goods in order to transform an economy characterised by old, low-productivity techniques into one consisting entirely of new, high-productivity techniques. Welfare is taken as per capita consumption (z) valued in some manner. Subjective time preference is rejected and income inequalities are ignored. The problem is discussed at a high level of abstraction. The economy is completely planned. There is considerable surplus labour and the labour force (l) is growing at a constant rate. There is no government and no foreign trade. Diminishing returns do not operate. Capital-output ratio is the same in both high-productivity and low-productivity sectors.

The problem of maximising welfare obviously involves inter-personal and inter-temporal comparisons. Since each particular time pattern of investments results in a corresponding time pattern of z, the planners require a quantitative and unambiguous set of valuations of consumption at different times, in order to find out the optimum path. Any industrialisation programme involves such valuations. The problem is to find a time series of the capital stock (k) such that welfare is maximised in the transformation period (f). To obtain a solution, an explicit mathematical utility function is not necessary. One may use any marginal utility function. Given this function and the initial per capita consumption $z_0$, the marginal utilities and z's for all periods can be known. But $z_0$ must be found from the solution of the whole problem.

To make the problem determinate, four boundary conditions are specified: initial l, initial k (hence output), the time horizon (f) and the terminal rate of growth which will safeguard the future of the economy after the change-over. A solution will be found if the marginal utility of consumption falls from infinity to zero as per capita consumption rises. The planners have to choose a $z_0$ such that the fall in the worth of goods is balanced against the increasing abundance as development proceeds.

To simplify matters, the logic may be reversed and various likely initial z's may be tried, in each case working out the implied optimal process until the growth rate of output equals the required terminal growth rate at the time when industrialisation is complete. In this way one may hit upon the appropriate initial z.

For a clearer exposition of the problem and its solution, three models are set up with completely different utility functions, capital-output ratios and vastly different situations with regard to available surplus labour. Given the boundary values and the structural conditions (e.g., growth rate of l, capital-output ratio, existing unemployment, subsistence minimum, etc.) that value of $z_0$ is sought which leads to complete industrialisation with the required terminal growth rate. If $z_0$ is higher than a certain maximum, capital per head will be falling, and there will be no possibility of industrialisation. The subsistence minimum (whether physical, moral or political)
is obviously very important in determining the period required for an optimal change-over. In the absence of a clearly defined subsistence minimum, of and hence \( z_0 \) are politically determined.

Although differing in detailed quantitative behaviour because of the great differences in real structure, all the three models share the same qualitative policy implications, i.e., extreme constraint on per capita consumption in the early years and relaxation in varying degrees later. Such a policy is a rational consequence of the advantages of exploiting the technological possibilities. The savings ratio (average and marginal) and the growth rate rise to great heights, and then fall down as the change-over nears completion. Such unanimity suggests that this pattern represents a generally applicable ideal in the direction of which all development policies should be modified. The absolute time required for an optimal change-over is also about the same (around 40 years) in all the three models. It is difficult to know to what extent this is accidental and to what extent there is a rough optimal time constant for industrialisation.

The darkest aspect of the solution is the basis of the social evaluation of different income levels. This must involve political judgment. It is suggested that working out the consequences of various marginal valuation functions along the lines of this paper should help in arriving at some more rational basis of policy than at present. The basic factors that condition an optimal change-over are the existing available output, the minimum levels at which consumption standards can be kept, and the more or less arbitrary weights attached to the higher levels of consumption whenever achieved. Barring absurdly low values, some violent process of capital accumulation of the type illustrated in this paper is suggested as the ideal.

(S.R.B.)


The conflicting analyses of the problem of artificially stimulating economic growth in underdeveloped countries create an impression that the analysis and the propositions of "traditional" economic theory provide uncertain guides to the policy-maker and hence make but a very small contribution to the formulation of development policies. The appropriate approach to the analysis of growth is impeded by the lack of a careful and intelligible analysis of the relationships between human behaviour in a social context and the process of growth. Such an analysis, in turn, is impeded by the lack of a careful formulation of the concept of economic growth which makes human behaviour amenable to analysis from this point of view. The author has demonstrated that it is possible to formulate a concept of economic growth which is free from the methodological pitfalls of definitions based on organic or utilitarian welfare propositions.

A literally organic growth analogy in economics presupposes the possibility of identifying economic units (economic organisms or super-organisms) with the "natural units" of biological analysis possessing distinct and observ-
able dimensions, statistically predictable life cycles and the "power to grow". But any organic growth analogy is superficial since this involves an hypothesis having a level of abstraction and an historical perspective rendering empirical testing on the basis of documented history of mankind almost impossible.

Although there is general agreement that the quantitative aspect of growth must be considered basic, there remains widespread disagreement regarding the relevant measure of growth. Ideally, what should be measured is the contribution of economic activity to the achievement of higher states of human welfare. Among the various accepted measures the one most widely employed is per capita national income. Given the general welfare approach, this raises the problem of defining a more comprehensive social welfare function. No feasible and defensible method of quantifying such a function has yet been demonstrated.

The aggregate welfare definition of economic growth approximates the concept of "universal utility" and implies that changes in the quantity of goods and services reflect changes in aggregate economic welfare. The assumptions involved in the aggregate welfare definition about the constancy of wants and those underlying the welfare interpretation of price-quantity data are of dubious acceptability. Incomplete coverage and imperfect data further limit the use of such a concept.

Assuming that an unambiguous and objective measure of the welfare results of economic activity is theoretically impossible, it must be possible to define some entity which has potentially measurable dimensions and grows by experiencing an expansion in these dimensions, if economic growth is to be considered a real, objective, and quantitative phenomenon subject to scientific analysis. This entity, commonly called an economy or an economic system, can be said to grow if its "normal" aggregate physical capacity to produce goods and services expands. While this definition of economic growth eliminates the conceptual and empirical problems arising from equivocal assumptions regarding the nature of economic welfare and the relationship between production and welfare, it presents conceptual and empirical problems which should not be minimised. In particular two sources of conceptual difficulty should be noted: (1) while the production frontier relates to hypothetical production possibilities, the available data relates to realized output, and (2) since production capacity is to a significant degree determined by the behaviour patterns of the active agents in the system, the frontier is to a significant degree flexible, even under what might be called stationary conditions. Even with the elimination of ambiguities surrounding the welfare based concepts of economic growth, measurement of economic growth is neither simple nor free from possible contradictions. Difficulties arise not from conflicting value judgments, but from statistical problems inherent in the representation of the growth phenomenon. As a result of these statistical problems no accurate measure of economic growth is feasible.

The author also deprecates the tendency to distinguish between economic and non-economic forces in the growth process. Such a dichotomy, he says, is not possible. Changes in the physical environment of economic activity identified by the term "economic" forces are no doubt necessary
conditions and physical manifestations of the growth process, they are not in any sense active growth creating forces. It is the human behaviour which is the active element in the process and the analysis of the process of economic growth, therefore, must draw on all of the traditional social sciences.

(S.U.K.)


Small agricultural holdings in underdeveloped countries have many characteristic problems such as the shortage of capital, immobility of labour, disguised and open unemployment and rapidly increasing population pressure on land.

A case has been made against the mechanization of farming on the grounds that mechanization is labour saving and would increase unemployment; that tractors are less efficient on small holdings than on large holdings and mechanization of farming while increasing output per unit of labour, will not necessarily increase the yield per unit of land.

The case against the mechanization of farming is an over simplification, for, while mechanization does not necessarily have any advantage other than economy of labour, there are many instances when it increases the yield per unit of land by more timely, or more rapid, or more efficient cultivation, and also enables the cultivation of previously uncultivated marginal land. Mechanization usually affects both employment and productivity. Where mechanization brings marginal land into cultivation, it will also increase employment.

Where mechanized farming enables double or triple cropping of land, previously cropped only once or twice by hand, the demand for labour will be partly positive—by increasing the requirement of labour for planting, weeding and the harvesting of crops—and partly negative—by decreasing the demand for labour in tilling the land.

If mechanization increases production by more efficient cultivation than would be possible by existing techniques, then labour will become unemployed.

Selective mechanization should be encouraged in instances where the increase in productivity is accompanied by a net increase, or at least no substantial decrease, in the demand for rural labour. In cases where, due to the joint-family system, the farmer is obliged to provide shelter and subsistence to his labour supply, irrespective of the amount of work they do, then mechanization, by increasing total farm production will benefit all concerned, irrespective of its effect on the demand for labour and the degree of under-employment in the area.

Selective mechanization was introduced in Perak State in Malaya in 1952 by the Rural and Development Authority. It provided tractors on hire at a price just above that which a private operator would earn. By the
end of 1953 the authority was operating 50 light tractors. By the end of 1958 there were several hundred private tractors operating and it was estimated that practically every small holder in Perak to whom mechanization was advantageous, could have his land ploughed by privately owned tractors on contract or reasonable rates of hire.

In terms of public expenditure there was a capital investment of about £75,000 sterling in plant and equipment, but this was largely recovered in hire and resale charges, and the net cost to the government of the whole programme was small in relation to the results achieved.

In South East Asia, mechanization is unwarranted when its only advantage is the economy of labour, or when an excess supply of labour is manifested in overt unemployment rather than disguised employment. Mechanization of small holdings should not be undertaken if the economy can be better served by investing the available capital in secondary industry or new roads to open up potential agricultural land.

(s.q.)


If economic growth is solely the result of investment, then the norms which are usually applied in the analysis of costs and benefits must be revised. On the other hand, if the norms of cost-benefit analysis are applied, then the view that investment plays a small role has to be accepted. The study relates to the various investment activities under the First and Second Five Year Plans of India.

The analysis of cost and benefit in economic growth is applied in order to ensure that the limited capital resources are most effectively used. The measurement of cost and benefit involves the consideration of discounted stream of benefits over the discounted stream of capital costs. A project is selected if the expected benefit is greater than the expected cost. The interest rate used in cost-benefit analysis is a measure of the marginal productivity of capital. Using the actual discount rates of 3 to 4½ per cent employed in the calculation of power and irrigation projects in India, the author shows that the growth of national income should have been between Rs. 360 crores and Rs. 540 crores against a net investment of Rs. 12,000 crores in the two plan periods. But the actual growth of national income was over Rs. 3,000 crores. This shows that if the norms currently used in the cost-benefit analysis are correct, the role of investment in economic growth is quite small.

Another view, contrary to cost-benefit, is that investment is responsible for all of economic growth. The general criterion implied by the ‘investment only’ view is to choose projects by descending the scale of internal rates of return, which is defined as that rate which makes the present value of the stream of value added gross of depreciation just equal to the present value
of capital costs. According to this view the experience in the two phases shows a net incremental output-capital ratio of 0.25.

Thus, there is a gap between 3 to 25 per cent in the rate of discount looking from the two views separately. The gap, however, may not be as wide as it appears to be if the conditions prevalent in the Indian economy at that time are taken into account. The actual rate that has been calculated is around 10 per cent and not 3 per cent. At the same time the rate of return of 25 per cent actually comes down to about 20 per cent if allowance is made for the understatement of capital because of overstatement of depreciation, and, the lower costs of machines that were bought before inflation set in (in 1959).

The fundamental point of difference between the two rates is due to the fact that whereas the ‘investment only’ view assumes that the alternative product of labour in almost any activity is near zero, the cost-benefit analysis assumes labour cost to be 100 per cent ‘social’ as well as ‘financial’ cost. These two assumptions make a lot of difference in the marginal product of capital. Maximising the rate of growth from a given investible surplus entails getting the most per dollar of investible funds paid out regardless of whether the payment was made for labour or capital. Thus, if it is accepted that investible funds are limited, then investment in houses, roads and irrigation cannot be justified.

The question now is whether additional capital could be employed without driving the present rates of return much lower. It may be accepted that funds be allocated first to those activities which have the highest rates of return, and then to those with progressively lower rates. It may happen that by the time a point is reached where the available funds are exhausted one would go past rates of return of 10 per cent and may in fact reach the range of 3 to 5 per cent which is officially used. The rate of 3 per cent used in the official cost-benefit calculations might be appropriate for marginal investments; it does not represent the marginal productivity of capital in all investments.

With a discount rate of around 10 per cent, investment in activities like power, irrigation and construction is still hard to justify at the present scale using present prices. One is pressed, therefore, in the direction advocating higher electricity prices, higher irrigation charges and higher rents.

The gap of the discount rates can be narrowed if it is assumed that 50 per cent of wages are social costs. With this assumption the proper discount rate for cost-benefit work must lie from 3-30 to 10-20 per cent. But the difference still remains. Those who count 100 per cent of wages as true costs would be more interested in long lived projects than the other group because the former would be content with a 10 per cent discount rate, while the latter would have to use a much higher rate.

Besides investment, there are other factors which make important contributions to growth, e.g., education. If a dramatic increase in productivity is achieved it will be the result of many forces working simultaneously, and not exclusively the result of an increased rate of investment.

This paper examines some of the methods of approaching the hitherto unresolved problem of determining the “optimum” rate of saving and also discusses the difference in the nature of individual and collective decisions to save and the limits to saving decisions.

The most widely used method of solving the problem of determining the optimum rate of saving is to employ a utility function that is valid over time. But this approach faces many insuperable difficulties: defining the exact meaning of utility, measuring the behaviour of social utility with respect to consumption; and selecting the precise utility function out of the innumerable possible alternatives. This choice cannot be made through political voting since the utility approach introduces a value judgment in a way not comprehensible to the common people.

The use of a pure psychological discount of the future to solve the problem of determining the optimum rate of saving may be questioned for a number of reasons. There is no rational reason why today’s discount of tomorrow should be used instead of tomorrow’s discount of today, if distance in time horizon is the only reason for the discount. The use of the discount cannot be defended even on the ground of consumers’ sovereignty, because the consumers involved include also those who are yet to be born. One validity of the preference of the present consumption over that in the future derives from the uncertainty and risk associated with the future. But this consideration also becomes very different in nature and less important from the point of view of the society as a whole.

Some attempts are made to eliminate the problem altogether by suggesting that we should have either maximum possible saving allowed by political consideration or should leave the issue to individual choice in the market. These attempts involve some overriding value judgments in one direction or the other, and take very partisan views of the question. So the problem remains.

One interesting feature to note is that the individual decisions made by members of the present generation through the market mechanism would not give the same result as the one they would themselves choose if they were voting collectively on the question. This is partly due to the fact that distribution of votes in a political decision need not conform to the distribution of the capacity to save in the market mechanism; or that individuals have imperfect knowledge about possible actions of others; or that a man acting as a responsible participator in a political debate is not likely to express exactly the same preference as he does in his day-to-day life. But most important of all, this will differ because the nature of choice in the two cases is different. A person may not be ready to make some sacrifice alone, but he may be perfectly ready to do so if others join in. This will be quite rational, because by making a little sacrifice himself he can help induce, in the second case, a greater collective sacrifice for the future generation. This possibility of the apparent paradox is present whenever his relative valuation of other’s consumption is such that he would prefer them to sacrifice some consumption for the future generations. Once this is recognised, the next
problem is one of presenting the choice in an easily understandable form for political debate.

It is, however, important to note that our freedom of choosing the optimum rate of saving is limited by decisions in the past and similarly the saving rates for a considerably long period may have to be decided now because of the specificities and time lags involved in the economic world.

Social and technical factors define the range within which savings may vary. In some societies poverty and population growth make the range between the upper and the lower limit very narrow. But even in societies where this is not the case the practical possibility of short-run variation in saving is very meagre because of the social pressure against any reduction in standard of living and the technical specificity of productive capacity. The greater the strength of these factors the more the problem will be one of allocation of consumption between different generations in the future, rather than one of allocation between the present generation on the one hand and the future generations, on the other. To the extent this is true the present generation will have to play a part in this problem that is totally different from the one usually attributed to it.

(N.C.)


Three phases are distinguished in Japan's modern economic development. The first, from the Restoration in 1868 to World War I, is characterized by the establishment of foundations for industrialization; the second, between the two World Wars, is characterized by industrial expansion and consolidation in Japan; and the third, since World War II, may be characterized by the reconstruction and growth into a mature industrial economy.

During the first phase, the Meiji Japan concentrated on establishing a socio-economic structure conducive to growth through extensive reformations in most of the nation's economic institutions and habits. General identification with national goals was achieved. A start was also made in importing and disseminating foreign knowledge. However, at the end of a period of about 50 years the pace of industrialization was still slow and the economic structure of Japan in 1914 was still very closely similar to that which is found in the present day underdeveloped countries. But considerable headway by textiles, machinery and transport equipment industries was made. On the other hand, agricultural progress was important in the Japanese economy during this period and it succeeded in sustaining whatever industrial progress was made. About two-thirds of the direct tax-burden of the economy was borne by agriculture.

In the second phase, industrialization gathered momentum and the non-agricultural sector started generating enough saving to finance investment. Agriculture gradually became a drag on the economy. Total
output and labour productivity grew at much slower rates in agriculture than earlier. The remarkable growth in industrialization during this period can be explained by several factors:

(a) The State played an important role in the establishment and maintenance of an institutional framework conducive to economic growth. The government’s programme of education upgraded the quality of labour; two-thirds of the increased non-agricultural output during the second phase was achieved by the increase in labour productivity, and only one-third is attributable to additional labour inputs. Government also encouraged the import and dissemination of Western technology. Gradually expanding markets and profit opportunities stimulated Japanese technological innovations under private initiative. By and large, Japan used the private market mechanism to allocate resources.

(b) Capital formation in the first phase of Japan’s economic growth averaged about 8 per cent of the national income between 1889 and the World War I. Considerable capital formation, however, was embodied in technological improvements in the Meiji Japan. Foreign borrowing was negligible in Japanese economic development.

(c) Labour force grew slowly in Japan relative to that experienced in underdeveloped countries of to-day. The contribution of labour to growth was twofold: productivity of labour increased significantly and incremental increases in labour were absorbed in high productivity industries rather than in low productivity agriculture. A dualism of high marginal productivity of labour in capital-intensive industry and of low marginal productivity in labour-intensive agriculture became evident in the Japanese economy. This dualism was met partly by adapting the capital-intensive Western technology to more labour-intensive inputs, and partly by establishing a high degree of complementarity through sub-contracting with small, labour-intensive firms.

(d) Japan had an affluence of enterprising and enthusiastic entrepreneurs. Most of them were educated young men with great faith in Western technology and responded quickly to the opportunities of profits and personal advancement. Some of them were also idealistic in their industrial endeavours.

Lessons that can be derived by the present-day underdeveloped countries from the Japanese experience of economic development are considerable, although the borrowers must be selective because of the differences between their present and the then Japanese socio-economic settings.

Firstly, the market mechanism was quite effective in Japan for purposes of growth. Secondly, Japanese Government used its influence only to support the market mechanism. Thirdly, improving agriculture for purposes of initiating economic development was a key factor in the Japanese economic programmes. Fourthly, Japanese model of factor proportions: combination of capital-intensive and labour-intensive methods, can be useful for countries
with abundant labour. Fifthly, the emphasis on capital formation in the
developing countries is contradictory to the Japanese emphasis on innova-
tions in the early phase of growth. Sixthly, adequate opportunities for personal
advancements, both in pecuniary and status terms, can increase the number
of industrial leaders in the developing countries. Lastly, high inequality of
incomes was itself a stimulant to growth in the Japanese economy.

(M.S.)

A.G. Chandavarkar, "The Nature and Effects of Gold Hoarding in Under-

The main argument of the paper is that the motivation behind gold-
hoarding in an underdeveloped economy renders the Keynesian analysis of
liquidity preference largely inapplicable to it and that the actual extent of
misdirection of resources involved is much less than commonly believed.

Total private stock of gold in such countries is very high; but the experi-
ence of India shows that new hoarding is small in relation to the household
sector’s saving and national income. The role of gold as a savings medium
in India is comparatively insignificant and it is unlikely to be more important
in the case of other underdeveloped economies.

The differences in the underlying motives for holding cash balances
and for hoarding gold render the Keynesian analysis of liquidity preference
largely inapplicable to the case of hoarding of precious metals in under-
developed countries. The transactions motive is not relevant since gold is
not a medium of internal exchange. Precautionary motive is somewhat more
relevant but available evidence indicates that this motive is not of overriding
importance.

The role of gold as a hedge against currency instability and inflation is
questionable at least for two reasons: firstly, the underdeveloped economies
are better cushioned against instability in so far as a substantial non-monetised
sector exists and to this extent the need for a “hedge” is attenuated; and
secondly, many of them (e.g., India) enjoyed greater monetary stability over
the past half-century compared to many developed economies. The speculative
motive does not operate in the case of large mass of gold hoarders, since it
is only the dealers and middlemen who are concerned with making estimates
of future prices to make profitable sale subsequently.

The hoarding of gold is primarily motivated by the psychic income
accruing from its possession; gold is important as a durable consumer good.

The demand schedules for money and for gold are largely independent
of each other. The steadiness of the demand for gold in underdeveloped
economies shows that investment in gold does not depend on the rates of
interest. The demand for gold is also largely independent of its own price.

A high or rising price of gold has no significant effect on the economy.
A rise in gold price leaves the total quantity of gold hoarding unaffected
because the supply of gold is fixed. A rise in the domestic price of gold is a symptom rather than a cause of inflation. Hoards of gold cannot be regarded as a source of latent inflation. In so far as they represent foregone consumption they have a net anti-inflationary effect.

If only the assumption of fixed supply is released the hoarding of gold appears to have a bearing on economic development through the absorption of real resources which could have been utilised in productive investment. In the absence of domestic production and import of gold no absorption of real resources can take place through gold hoarding.

The real objective of policy should be to mobilise gold hoards to cover the foreign exchange gap at least partly. But it is readily recognised that this is a complicated task which can be performed only through consistent legislations and policies.

(A.R.K.)


In this paper, a method has been developed to estimate short-term effects of changes in total income on the consumption of a commodity in contrast to the long-term effects as measured by the income elasticity of demand for the commodity. An attempt is made to determine the income elasticity for foodgrain consumption on the basis of the family budget data of Vidharbha farmers (India) for the years 1955/56 and 1956/57.

To estimate these income elasticities, the author uses a double log function which assumes constant elasticity throughout the expenditure range covered by the sample. The choice of the double log function is important as the disturbing effects of price changes in the constant term can be isolated. It is particularly suitable in this case because the period covered witnessed large variations in prices. The limitations of the double log function have been overcome by splitting the sample into three parts, according to the total expenditure of the families during the first year. With a smaller range in expenditure within each group, the assumption of constant elasticity, within each group is more realistic than that of constant elasticity over the whole range.

The author poses the following two questions: First, can it be assumed that the consumption behaviour pattern in the society is stable and depends mainly on income? Second, is the process of adjustment to a new consumption level instantaneous or does it have a time lag?

To answer these questions the expenditure elasticity for the consumption of foodgrains has been estimated by different methods for the same set of people, namely:

(a) from the family budget data of the first year;

(b) from the family budget data for the second year; and
(c) from changes in consumption expenditures of individuals from the first year to the second year.

The assumption of stability is examined by a comparison of (a) with (b). The comparison of (a) and (b) with (c) answers whether the change is instantaneous or not. Thus, the estimate of elasticity (c) refers to the short-term effects, while estimates of (a) and (b) refer to the long-term effects.

With the help of the variations as explained by different regression results the author concludes that for the Vidarabha peasants, the long-term and short-term effects of the changes in their total expenditure on their food-grain consumption were not different. In the process of the analysis, it also became apparent that the application of constant elasticity within each group, when the sample is split into three parts according to the total expenditure as against the whole range of the sample, did not help to improve the results.

(I.A.)


Empirical research has shown that capital-output ratios have almost invariably declined over time. In this paper it is contended that this is the result more of technical rather than real causes.

The most important technical factor that creates a downward bias in the capital-output ratios is the deflation procedure. The deflated trend declines much more than the current trend. This is because the deflator for capital assets rises over time relative to that for output due to the different methods employed in constructing the two deflators. While output is priced basically on a unit basis in the preparation of a price index, capital assets are basically priced on elements-of-cost basis. The result of these differing methods is that rising productivity tends to lower the index for most output, but does not affect that for capital goods. If the input cost of a capital asset remains constant, its deflated value is considered constant even though the productivity of the inputs has increased considerably. Consequently, with productivity improvements, deflated output value rises more over time than deflated capital asset value, and this biases the ratio downwards.

According to census data, capital-output ratios in manufacturing industries rose quite steeply in the United States from 1880 to 1919, and declined almost as steeply from 1919 on. The initial rise is attributed to the relatively better reporting of capital assets in successive censuses. The subsequent fall appears to be explained by the book-keeping procedure of capital assets and the growth of these depreciation reserves.

Capital-output ratios in the United States railroad industry fell sharply from 1880 to 1915 according to an estimate made by the National Bureau of Economic Research. Here also, the ratio was substantially biased by the deflation procedure. The fall appears to result from a high estimate of capital
assets in 1880, and a rather extreme price index which gave twice as high a deflated value for capital assets in 1880 as in 1915, even though their quality rose quite considerably in 1915.

Empirical studies, on the other hand, indicate that the savings to income ratio in the United States has remained secularly constant in the past, while the rate of growth of income has tended to decline. These suggest a fairly sharply rising incremental capital-output ratio rather than an approximately constant one in current prices, or sharply falling one in constant prices.

It is reasonable to think that an initial over-valuation of capital assets might have caused this discrepancy between theoretical expectations and empirical findings. This presumption is partially supported by data on national debt. Data of United States debt show that there had possibly been a 13 per cent over-valuation of capital assets in 1900 and consequent over-estimation of capital-output ratio. If the average ratio actually had a smaller value in 1900, it would then probably have risen as much over time as did the incremental ratio.

(A.I.)


Inflation is controlled by monetary and fiscal policies in many countries. This paper analyses the case of Netherlands where, besides fiscal and monetary controls, government wage control was applied in the peculiar post-War circumstances.

Before World War II, wage matters in the Netherlands were dealt with by statutes and ministerial decrees which allowed free collective bargaining. But the War reduced productive facilities. Demand increased and the problem of ensuring a rapid rate of growth in production became serious. The Government consequently interfered in the productive and distributive processes. Wage regulation and collective bargaining between employers and employees greatly helped check wage increases.

After liberation (1945), wage policy guaranteed each wage earner a minimum standard, irrespective of his productivity. Wages of semi-skilled workers were 10 and 20 per cent above the wage level for unskilled workers. In 1946, through a wage freeze, the Government kept monetary circulation stable until the Korean conflict in 1950. The Korean conflict and the devaluation of the guilder disturbed price stability. Subsidies moderated increase of prices, but when in January 1950 a wage increase was granted, subsidies were discontinued.

Inflation returned in 1951. Trade liberalization and the Korean conflict induced heavy buying with the consequent increase in imports and import prices. The cost of living rose by 8 per cent during the first half of 1951. Food subsidies were reduced; direct and indirect taxes were raised; investments
were controlled and building programmes were curtailed. Real wages fell by 4 per cent in 1951 compared to 1949.

In 1954, the Government relaxed restrictive policies and allowed an expansion in domestic consumption and investment. Two general increases in wages were authorised, one in January and one in October 1954. As a result, the overall index of hourly wages rose by about 9 per cent.

In 1954, and 1956, unemployment declined but job vacancies increased. Wages were not increased although fringe benefits to workers were. In March 1956, the Government decided on differential wage increases. This resulted in excessive demand that characterised the Netherlands in 1956.

Thereafter during 1957-60, the Government reintroduced restrictive policies in order to counteract the deteriorating balance of payments. It abolished sugar subsidy and reduced public consumption and investment expenditure. Public utility rates were increased. Indirect taxes and taxes on corporate profits were stepped up. Employers and the Government cooperated in price stabilization. In 1959, the Government adopted two principles: the first limited wage increase in each enterprise and industry by the increase in productivity; the other maintained proper wage differentials in different industries and occupations. Productivity remained a guide for wage negotiations between employers and labour. Consequently in 1960, cost of living rose by 3 per cent and labour cost declined by 2 per cent.

Two problems cropped up during the time of post war efforts: generation of enough exports and promotion of savings to satisfy investment needs. To solve the first problem, domestic price was kept down even below international price. Strict monetary and budgetary policies were enforced as a result of which the wage-price spiral broke up and the policy was accepted by all.

An appraisal of post-liberation period suggests that between 1946 and 1960, both cost of living and money earnings recorded an improved trend. Wages were kept within the limit of increase in productivity. After 1950 investment and consumption were curtailed to improve balance of payments. However, at the wake of large payment surpluses during 1952 and 1953, wage policy became less restrictive. Consequently real wages were permitted to rise in relation to increases in national income. Ultimately Netherlands did keep its export price in line with its main competitors like Germany, Sweden, United Kingdom and Belgium-Luxembourg.

During 1953-57, earnings increased; labour costs and prices per unit of products rose by 26 per cent. In mid-1959 wage policy stimulated labourers and employers to determine wage change in each industry.

As a result of wage-restraint policy, the profit-wage ratio increased to a peak of 0.87 in 1955 and declined to 0.83 in 1959. The decline of wages after 1957 gave rise to a decrease in consumption ratio. Notwithstanding the decline of share of wages in national income during 1949-51, labour cost rose.

The Netherlands experience further showed that if consumption is
stable at 65 per cent of national income, cost aspect of wage changes—instead of demand aspect—will be more operative in future. From 1948 to 1951, the discrepancy of the increase of ratio of profits to wages, and increase of net supply of labour was the result of an increase of profit margin due to less strict price control and to doubtful reliance on any overall indicator of labour scarcity until 1951.

Overall changes in earnings in different industries, it is noted, is related to labour scarcity. Earnings in different industries were inversely related to unemployment. It was also significant that wage structure between broad categories of labour was not—or little—affected by the elaborate wage differential techniques.

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


The relations between foreign trade and growth are not always clear. This paper sets out some simple models of these relations, lists their differences and illustrates them with reference to the experience of Britain and France during the period between 1850 and 1913. The experience of these two countries indicates that expanding or contracting foreign trade, whether with exports or imports in the lead, can have an accelerating or retarding impact on growth. In periods when growth is held back by lack of spending, more exports and less imports are helpful. If lack of savings is keeping the economy from growing, international specialization will lead to higher incomes, provided domestic transformation takes place. This may be difficult to achieve if the economy lacks the capacity to effect it. With transformation, expanding exports help; without it short-run gains are made at the expense of deepening the rut and postponing the needed adjustment as has happened in Britain after 1875. The growth process requires continued technological progress and reallocation of resources to new products instead of expanding exports in traditional lines which over time slow down the net rate of growth. Even declining exports can help transformation by forcing producers to seek new lines. In fact with sufficient capacity to transform, any change is a stimulus to adapt and to grow.

Changes in imports, as is shown by French experience, can also help or hinder growth, depending on whether or not the economy possesses the capacity to transform itself to gain from these changes. Import substitution has been characterised as a normal part of the process of growth. Thus, reduced imports from raised trade barriers may help transformation when the import-competing industry is already poised on the verge of expansion. Increased imports on the other hand may also stimulate the domestic industry through competition to effect technical change and investment in modern equipment which is essential for growth. However if transformation does not take place, less imports may not stimulate growth, more imports may actually lead to decline.
In short, more or less foreign trade is neither a necessary nor a sufficient condition of growth or non-growth. Economic historians must be careful not to attribute growth or stagnation to changes in foreign trade without specifying the operating mechanism.

(M.H.)


This article endeavours to outline an insurance scheme against fluctuations in export earnings on the pattern of unemployment insurance. The scheme is based on the principle that the effect of the lack of foreign exchange due to a fall in the export proceeds of developing countries is very similar to that of unemployment of workers. Premiums are to be paid by participating nations—developed or developing. The premium payments will be utilised to meet accidental short-falls of export proceeds due to, say, crop failures. The premiums will accumulate into a fund and be invested preferably in developing economies in the form of long-term loans. To meet a major short-fall of export proceeds, the fund will sell promissory notes, against its existing assets, to surplus countries who can sell them back to the fund in the case of deficits in their balance of payments. The Fund would also repurchase the notes when her liquidity position has been restored. This will provide compensatory finance to developing countries.

The quantum of export proceeds to be insured should be a fairly recent average, say, the moving average of the three preceding years. This method avoids the disadvantage of a one-year standard and also the disadvantage of disguised subsidy to products experiencing long-run falling demand.

Insurance payments to advanced countries would be in the form of loans repayable under conditions appropriate to the cause of the export short-fall. In the case of developing countries, payment should be through contingent loans, turned into grants in the event of difficulties of repayment within the stipulated period.

The assessment of annual premiums for the developed and the developing countries should be on the basis of their national income and export proceeds respectively. In order to have an investible margin from 0.5 to 1 billion dollars a year, it is estimated that yearly contribution of 1.75 péro mille of GNP of the advanced countries and 0.5 per cent of export proceeds of the developing countries should be made. This estimate was made on the basis of 1950-60 figures for 27 countries.

The proposal is expected to stabilise the income of the primary producing countries, guarantee regular financing of development programme and stabilise the demand of the primary producing countries. The participating advanced countries will also find in the scheme a source of additional credit to combat a deficit situation in their balance of payments during a recession.

The paper aims at a more revealing explanation of the retarded response to technical change than the work hitherto done on the subject. It begins with Frankel's viewpoint that interrelatedness of the productive process is an important factor impeding technical change, re-examines it and tries to make a more explicit formulation of it. It also introduces economic irrationality as another notable deterrent to technical progress, and thereby shows the inadequacy of recent investigations which offer factor prices as the only critical variable limiting the adoption of the most modern methods. The analysis of the paper is backed by several illustrations taken from British economic history. The basic thesis is to reinforce the argument that an early start, as in the case of Britain, may make an economy worse off, rather than better off, with the free gift of the past which no longer satisfies the modern standards of efficiency.

The assumption, to start with, is that technical change is one of the main springs of economic growth. And while it is true that more gross investment will permit more technical change, it is also important to note that gross investment is not a sufficient condition for technological change.

Frankel's main explanation for the continued existence of obsolete capital equipment is the interrelatedness among various industrial components, *i.e.*, the possibility that in a complex economy a change in one component will entail capital changes in other components. In the factor price model outmoded equipment is not scrapped or replaced as long as average full costs of the new method exceed average variable costs of the old method. It is the relative factor prices which determine average variable costs and thereby determine scrapping or replacement.

Several other economic factors are relevant. One is the degree of competition. A smaller degree makes more room for the inefficient to survive. Another is the second-hand value of equipment which assists technological change. Third is the quasi-economic factor of decision-making, a scarce input with a high cost. A firm may optimise its returns by taking decisions on the basis of rules of thumb or habit rather than as a consequence of cost calculation. In a world where decision-making is a free factor, this is irrational, and approaches Frankel's institutional impediments to technical change. On a more realistic view, however, it appears that most models call for more or cheaper rationality than is likely to be provided.

The failure of British railroads under private ownership to move to a more efficient size of freight car was attributed to two reasons. One is that of physical interrelatedness, the fact that such a change also involved changes in "terminal facilities, tracks shunting facilities", *etc.* The major impediment is said to have been the fact that the coal wagons were owned by coal mines and not by railroads, a type of interrelatedness which is institutional rather than technical.

Institutional interrelatedness inhibiting technical change can be compared to pecuniary economies external to the firm. Because of uncertainty as to the yield to a particular firm and the possibility of pecuniary external
economies to other firms, the particular firm will hardly dare to undertake investment even in conjunction with other firms. But uncertainty may not be the critical block. It may be a simple market failure which may rest in inertia, non-maximizing behaviour, etc.

A special form of external economy in technology exists in standardization. Where a single firm has several types of equipment for the same job, it pays to scrap the non-standard ones first. But standardization within the firm may be of minor importance compared to standardization among firms. The failure to standardize can be regarded as a penalty of the bad start. Another and more familiar type of external economy relevant to technical change is the provision of technical education by the state. Lack of trained personnel will limit the extent to which most modern techniques will be adopted.

Lack of competition is not important by itself. Monopoly cuts both ways. What is important is the nature of monopoly. Where the monopolist or monopolistic competitors are calculating and maximizing, technical progress will take place. But the monopoly may be static, in which case the non-economic behaviour of monopolists becomes the stumbling block of technical advance. This economic irrationality may take several forms: taking interest in a quiet life free from public hounding, sharing out of replacement or net investment funds in the different units of a firm regardless of prospective profit rates, maximizing a technical rather than an economic variable, applying rules of thumb in place of calculation of costs and revenues, and so on.

(A.R.)


The working force in agriculture in India increased by about 25 million during the first half of the twentieth century compared to an increase of the same number in the total working force. Thus, there was no increase in the non-agricultural labour force. In 1955/56 the labour force in agriculture was estimated to be about 72 per cent of the total working force. The net output per labourer in agriculture is only one fifth of that of labour in mining and factory establishments and only one-third of that of labour in trade and services. Attempts are now being made to shift labour from agriculture to other more profitable industries, and to reduce the proportion of agricultural labour force from 72 to 60 per cent of the total labour force by 1975/76.

There are three aspects of the unemployment problem in India: (i) present size of unemployment in urban and rural areas; (ii) new entrants into the labour force, estimated to be about two million persons a year, and, (iii) under-employment, particularly in the agricultural sector.

It is difficult to measure in absolute or even in relative terms the volume of unemployment in India but from the data collected in the 9th round of the National Sample Survey, it was estimated that India has 10 to 15 million
people unemployed in the technical sense in which it is understood in the West. During the Second Five Year Plan period addition to the labour force is estimated to be 15.3 million (5.3 million being the backlog of unemployment and 10.0 million being new entrants). The Plan provides for the employment of only 8.0 million persons, thus at the end of the Plan period there will still be a backlog of 7.3 million unemployed. Similarly, it is estimated that the backlog of unemployed will be about 11.0 million at the end of the Third Plan.

Absorption of idle labour force is limited in large-scale industries as well as in agriculture. Again increased urban concentration of labour force cannot be welcome because it will worsen the existing employment situation in urban areas. As a solution to these problems, cottage and small-scale industries have to be developed in the rural areas which may serve as complementary to large-scale industries. The Government of India is taking measures for developing and expanding small-scale industries by providing technical assistance and credit facilities. For a balanced industrial growth, adequate facilities such as supply of water and power and better means of communications should be provided to small-scale industries located away from urban centres. Industrial estates supposed to serve as links between urban and rural areas should be used positively for creating a suitable atmosphere for the establishment of small industries in underdeveloped areas. Moreover, these estates should be established to suit varying conditions in different parts of the country. The local development works programme, when implemented successfully, will contribute greatly to reduce rural unemployment and underemployment in India.

The simplest way of utilizing profitably the underemployed rural labour is in agriculture itself. The intensification of agricultural operations through the introduction of irrigation and improved practices, the linking of the economy of villages with the growing requirements of the neighbouring centres and the diversification of the occupational structure of rural areas through the rapid development of a wide range of processing and other industries would expand employment opportunities in rural areas on a permanent basis. The other way of utilizing rural underemployed labour in agricultural and ancillary development lies in undertaking comprehensive public works programmes. Protection of productive lands from livestock depredations might also provide employment, and would ultimately increase food production. Such preferences will not only provide employment but will also increase the rate of capital formation. In addition to this, the villagers, with the cooperation of community leaders and with financial help from the government, can build their own roads, schools, wells, common pastures etc., on a self-help basis. In places where the incidence of unemployment is high, special works projects should also be organised by local authorities and state governments to utilise the idle and surplus rural manpower.

The extent to which this approach to rural employment can be carried out effectively depends partly on how the government executes the suggestions given above, but, in the long run, chiefly on the initiative and organisational efforts of the rural population and their village leaders.

(A.R.R.)