

OBSTACLES TO ECONOMIC GROWTH

We have already studied the main characteristics of under-developed countries. The question is: What has stood in the way of their economic development? There are several causes, economic, social and political which have hindered the growth of under-developed countries. We briefly examine these obstacles below:

ECONOMIC FACTORS IMPEDING GROWTH

First we discuss the main economic factors impeding growth.

Foreign Domination

Most of the countries of Asia and Africa, which are under-developed, have been at one time or another under an alien rule. The most important cause of poverty in India and its under-development is its subjection to the British rule. The foreign rulers, naturally, exploited the dependent countries and used their resources to promote their own interests. These countries were made to supply raw materials at low prices. The foreign industrialists also made investments in primary industries such as mining, drilling of oil wells, tea, coffee, rubber plantations, *etc.*, the products of which were exported. The domestic workers were exploited and were paid very low wages. High profits thus made were taken out of the country. They sold their manufactures in the under-developed countries in exchange for raw materials.

Thus, the foreign masters used these countries as suppliers of raw materials to their industries and markets for their manufactured goods. They did not take any interest in their economic development. Rather, there is ample evidence to show that they raised all sorts of obstacles in the way of their industrial development as in India, where competing small and cottage industries were destroyed by

the unfair use of the political weapon. This resulted in increasing pressure on agriculture, disguised unemployment and poverty. That is how foreign domination has been a great impediment in the economic growth of under-developed countries. Now that these countries are free they can plan their own development.

Misuse of Resources due to Market Imperfections

Another important reason for the economic backwardness of the under-developed countries is the misuse of resources owing to market imperfections. By the market imperfections we mean the immobility of the factors of production, price rigidities, ignorance regarding market trends, static social structure, lack of specialisation, *etc.* These market imperfections are great obstacles in the way of economic growth. It is due to market imperfections that productive efficiency in these countries is low, the resources are either unutilised or under-utilised and the resources are misallocated.

When the resources are perfectly mobile and there is perfect competition among them, they can easily move from one sector to another in search of a better return and in this way they make an optimum contribution to the national output. But in the under-developed countries, it is found that the workers are engaged in occupations where their marginal productivity is zero (*e.g.*, in disguised unemployment in agriculture). Even then they do not move out into industries where they can earn higher wages. Similarly, there is misallocation of capital in the under-developed countries, various customs, habits and social inhibitions stand in the way of free mobility of labour and capital. Poverty also impedes mobility of labour from one place to another or from one industry to another. Lack of employment opportunities and ignorance about the market trends are also responsible for market imperfections. The manufacturers and entrepreneurs too are ignor-

ant of the market trends in domestic and world markets. Then there are monopolistic practices which aggravate the market imperfections and are responsible for the misuse or misallocation of the resources of under-developed countries.

To the extent of these imperfections, the resources of their countries are misused or under-utilised. There is no doubt that the output in these countries can be increased by fuller and better use of the productive resources by removing these market imperfections. This can be made clear by the production possibility curve given below:

In the Fig. 71.1, a production possibility curve AF is drawn on the assumption of a given amount of productive resources available and given technology. The good X is shown on X-axis and the good Y on the Y-axis. The production possibility curve shows that if a full and optimum use is made of the

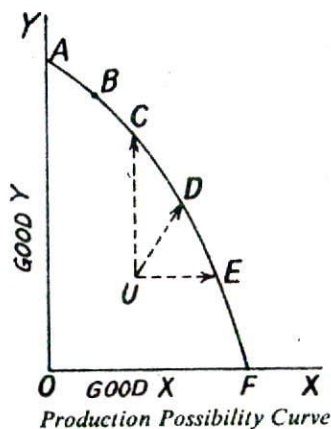


Fig. 71.1

productive resources of the country, how much of good X and how much of Y will be produced with a given amount of the resources and with a given technology. When a country is making the fullest and optimum use of its available resources and technology, then it is operating at a point on the production possibility curve.

We have said above that owing to market imperfections, the under-developed countries are not making the fullest and most efficient use of their productive resources with the result that these resources remain unutilised or under-utilised in large quantities. In such a situation, their economy does not operate on the production possibility curve but at a point below it, e.g., at the point U in the diagram. By removing the market imperfections and by making fuller and optimum use of their resources, the under-developed countries can move from a point below the curve to some point on the production possibility curve and thus raise the level of national income and output. In this way, economic development of the country can be accelerated.

It may be pointed out that economic development

of under-developed countries can be promoted not merely by making the fuller use of their available resources but also by augmenting these resources. When in an under-developed country, capital formation increases, this means more productive resources are now available, because capital is of strategic importance. When this happens, the entire production possibility curve is pushed upward which shows that the productive capacity of the economy is now greater than before and there is an all-round economic development.

Low Rate of Saving and Investment

Another main reason of the poverty and under-development of the under-developed countries is that the rate of saving and investment in these countries is very low. In these countries, only 5-8 per cent of the national income goes into savings, whereas the rate is 15-20 per cent and even more in the developed countries. When the rate of saving in a country is low, the rate of investment is bound to be low and the rate of capital formation is low too. Since capital per man is low, the productivity is also low. Productivity being low, the per capita income and the national income too are low. It is truly said that the under-developed countries are caught up in a vicious circle of poverty which we shall discuss presently. This vicious circle of poverty is the greatest obstacle in the way of their economic development.

The vicious circle of poverty affects both demand side and supply side of capital formation. On the supply side, the saving capacity is low on account of poverty and low per capita income. Since the rate of saving is low, investment is low and the rate of investment being low, capital formation is low which results in capital deficiency in the country and small capital per worker, on account of which productivity is low which ends in low per capita income or poverty. On the demand side, since people are poor, demand for goods or the size of the market is small and since the size of the market is small, inducement to invest is low. Since investment is small, national output is small which means low national income and per capita income, ending in poverty.

In this way, we see that in the under-developed countries, the vicious circle of poverty adversely affects capital formation both on the demand side and the supply side.

Demonstration Effect

The under-development of the economically backward countries is also due to what has been called the 'demonstration effect.' The demonstration effect increases propensity to consume which reduces the rate of savings and investment. A very important principle has been propounded regarding

consumption, *viz.*, that an individual's consumption does not merely depend on individual's own income but it is very much influenced by the standard of living or consumption of his friends and relations. When a man sees that some of his friends and relatives have refrigerator, scooter, radio or TV set, good furniture, good clothes, *etc.*, he likes to imitate them and is desirous of possessing and using these things. As soon as he can afford or when his income increases he buys such things. This means that instead of increasing his savings, when his income increases, he increases his consumption.

Thus, consumption does not depend upon absolute real income but on relative level of real income. That is, consumption expenditure does not depend on our own purchasing power but on what is being spent by others on the purchase of luxury articles. An eminent American economist Duesenberry has called it 'Demonstration Effect.' The demonstration effect has adversely affected people's capacity to save. It has been estimated that 75 per cent Americans are unable to make any saving. It does not mean that they are too poor to save. But they cannot save because they imitate the superior standard of living of the people richer than they.

Nurkse has applied the Duesenberry doctrine to international levels of living. According to him, the economic development of the under-developed countries has been greatly influenced by the disparities in real income of different countries. Whereas, on the one hand, the rich developed countries are trying to help the under-developed countries in breaking the vicious circle of poverty, they also export to them their higher standard of living. Their superior standard of living increases their propensity to consume, because they try to imitate their standard of living. Nurkse calls it '**International Demonstration Effect.**' He says, "When people come into contact with superior goods or superior patterns of consumption, with new articles or new ways of meeting old wants, they are apt to feel after a while certain restlessness and dissatisfaction. Their knowledge is extended, their imagination is stimulated, new desires are aroused, the propensity to consume is shifted upward."

Thus, we see that international demonstration effect reduces the savings of underdeveloped countries and in this way hinders their economic growth. Television, movies, radios, foreign travel, expansion of education and travelling facilities are such powerful media which extensively advertise new articles or propagate new higher standards of living and thus increase propensity to consume.

Propensity to consume directly affects propensity to save: Higher the consumption less is the saving. When poor countries imitate the higher standards of

living of the rich countries, they have to pay the price for it. The price is that their capacity to save is reduced. As Nurkse observes: "The great and growing gaps between the income levels and, therefore, living standards of different countries, combined with increasing awareness of these gaps, may tend to push up the general propensity to consume of the poor nations, reduce their propensity to save." The decrease in their propensity to save is bound to prove a big obstacle in the path of their economic development.

Moreover, increase in propensity to consume also adversely affects the potential savings of surplus labour in disguised unemployment. This potential saving can be utilised for capital formation only if original consumption or standard of living is maintained when incomes rise in the process of economic growth. In the developing economies, there is a sharp conflict between the necessity to save and the desire to raise propensity to consume. Generally, the consumption expenditure goes up and saving goes down. No wonder that economic growth suffers.

Rapidly Growing Population

In the under-developed countries, especially in the over-populated countries of Asia, population increases very rapidly. This has very adversely affected their rate of economic growth. In fact, rapid population growth is the greatest obstacle to economic growth. Whatever increase takes place in the national output and income in such countries as a result of development is devoured by the ever-pouring torrent of babies. It is like writing on the sand. That is why their standard of living and income per capita cannot rise. For example, the major part of increase in national income that has accrued in India during the five-year plans has been nullified by the rapid population growth. As a result, though there has been substantial increase in national income, but the per capita income has not increased much. Obviously, a rapidly growing population is a great obstacle in the way of raising the level of living in such countries.

A rapid population growth is an impediment to economic growth in as much as it slows down the rate of capital formation. But to accelerate economic growth, it is imperative to step up the rate of capital formation. How can capital formation be stepped up when the per capita income increases slowly on account of a rapid rise in population? A rapidly growing population increases the number of consumers in the country and hence consumption expenditure. Owing to increase in consumption expenditure, it becomes difficult to increase the rate of saving and investment which is so essential for economic growth. It is clear that a rapidly growing population retards economic growth by retarding the growth of capital formation.

1. Nurkse, R.—*Problems of Capital Formation in Under-developed Countries*, pp. 58-59.

Whereas rapid increase in population slows down the increase in the rate of investment on the one hand, it necessitates a higher rate of investment required for rapid economic growth, on the other. For instance, in India owing to 2.5 per cent annual rate of population growth, it has become necessary to increase the rate of investment and capital formation so that the per capita income remains constant (i.e., it should not decrease). According to the eminent development economist Colin Clark, if there is 1 per cent increase in population, it becomes necessary to increase national income by 4 per cent just to keep the per capita income constant. In other words, with a 2.5 per cent increase in population in India, the national income must rise by 10 per cent just to maintain per capita income at the old level and to prevent it from sliding down. But if the per capita income, and hence the standard of living, is to be raised, the national income must rise by much more than 10 per cent. This shows that a great obstacle the rapidly growing population is in the way of rapid increase in the per capita income.

Besides, a rapidly growing population creates several other problems on account of which it becomes difficult to accelerate economic growth. In the first place, a rapidly growing population requires larger quantity of foodgrains. In India, the explosive rate of population growth has increased the demand for foodgrains manifold. This is due to higher income elasticity of demand for food. It has created a serious food problem in the country. India has been importing now for many years large quantities of foodgrains and losing valuable foreign exchange on this account. If there had been no food problem, we would have been able to import plant and machinery and other equipment and necessary industrial raw materials all of which would have promoted rapid economic growth in the country.

Unemployment is another very serious problem created by rapid increase in population. We know that in India backlog of the unemployed has been increasing at the end of each five-year plan. This is due to the fact owing to low rate of capital formation, industrialisation has been going on at a slow rate and it has not been possible to increase employment opportunities commensurate with the rate of population increase. Unemployment means waste of potential manpower resources. Instead of being used in the work of economic development, the unemployed act as a drag on economic progress, since they have to be fed all right even though they are not making any contribution to the growth of national output.

SOCIAL AND POLITICAL OBSTACLES TO GROWTH

There are several other factors which have retarded the economic growth of under-developed coun-

tries. Among these we may mention the following:—

Inefficient Agrarian System. In the under-developed countries like India, agriculture has been carried on in a very inefficient manner. Lack of adequate irrigation facilities and fertilizers, primitive agricultural practices, poverty of the peasant, out-moded systems of tenure, uneconomic holdings are some of the reasons for the backwardness of Indian agriculture. Excessive dependence on agriculture itself is a major cause of the economic backwardness of these countries.

Shortage of Entrepreneurial Ability and Spirit of Experimentation and Innovation. The under-developed countries are generally wanting in dynamic entrepreneurship. No wonder trade and industry have been conducted at a very low level and few new grounds have been broken.

Scarcity of Skills. Economic development requires an army of trained and skilled personnel who serve as instruments of economic progress. These the under-developed countries lack and consequently remain backward.

Lack of Technical Know-how. The use of modern techniques in the field of agriculture, trade and industry is indispensable for economic progress. But industrialists and businessmen in under-developed countries are blissfully ignorant of such techniques and thus feel terribly handicapped in the economic race.

Inadequacy of the Transport and Credit Systems has also contributed to our economic backwardness. It is obvious that if a country is to develop, it must have sound infrastructure in the form of means of transport and communication to facilitate trade and industry and an efficient banking system to assist it financially.

Social Structure. Not only have the economic factors handicapped economic progress of the under-developed countries but social factors, too, have played their part to keep them economically backward. Social structure has proved inimical to economic progress. Among the social forces impeding, for instance, India's economic progress we may mention the following:—

Caste System has divided the Indian society into water-tight compartments and has rendered cooperation in the economic sphere impossible. It has created divergence between aptitude and the occupation actually pursued. By making functions hereditary, it killed initiative and enterprise. Untouchability has demoralised millions of our people striking at the very root of dignity of labour. Mobility of labour, so essential for economic progress, has been rendered difficult, if not impossible. Healthy trade union movement cannot grow in a society split by caste considerations. In this and other ways, the

Indian caste system has stood in the way of her economic progress.

Joint Family System acts as another serious obstacle to economic progress. The system breeds drones, seriously imperils the will and the power to save, since it leads to extravagance on the part of some members. It kills initiative and enterprise in the younger members of the family, for they expect to be comfortably looked after by the head of the family. In short, the joint family system results in shortage of capital and low rate of capital formation which is a major cause of the tardy economic growth in India.

Laws of Inheritance guaranteeing equal share in father's property to all his children, sons and daughters, is an important cause of successive impoverishment of the people in India. It has resulted in sub-division and fragmentation of land holdings which have barred all agricultural improvements. This is another important cause which has impeded economic development in India.

Out-moded Religious Beliefs and lack of secular and rational outlook generate other-worldly attitude to the neglect of economic endeavour in the present life. They encourage austere living. As such they are in no small measure responsible for India's economic backwardness. Positive attitude towards work and wealth is wanting. Superstitious and costly rituals eat up the savings of many years, creating shortage of capital and resulting in much national waste of resources. The philosophy of Karma makes the people fatalists and dampens their enthusiasm for work.

Unprogressive Social Attitudes, e.g., irrational attitude to having children, are also obstructing economic progress in India.

Political Factors. In addition to the economic and social factors enumerated above, there are the political factors which have retarded economic growth in India. During the British regime, the Government promoted British interests at the expense of Indian interests. For example, the development of Indian industry was deliberately discouraged. Vested British interests in India also stood in the way. The masses were kept in a state of illiteracy and abject poverty without any economic uplift. They were dumb-driven cattle viewing life in a callous and fatalistic manner. After Independence, too, things did not improve. Some dishonest and corrupt leaders came to the fore. There was absence of clean and efficient administration. Favouritism, nepotism and corruption were rampant all over the country. The people too lacked sense of duty and devotion to the country and were trying to enrich themselves at the expense of the country. Such

conditions were hardly conducive to economic growth.

But in 1975-76, owing to certain government measures and cooperation of the people putting in greater effort, there was a welcome change on the economic front. Consequently, the process of development picked up with amazing speed.

Adverse International Factors. Economic relations with the advanced countries have also kept the under-developed countries in a state of under-development. In other words, international trade has worked to the disadvantage of the under-developed countries and perpetuated their poverty. As Prof. Raul Prebisch has observed, there has been a secular stagnation in the terms of trade of the under-developed countries. He says that "over the last seventy years, the peripheral under-developed countries have suffered with fatal effects of a continuous weakening in their capacity to import. It has led to the weakening of the capacity of their existing primary producing industries to support their growing population, it has resulted in a failure to transmit to them the benefit of technical progress; ... it has finally lowered their rates of capital formation and thus of their economic growth."

Foreign trade has a very limited 'spread-effect' on developing economies. That is, developing economies are not exposed to the beneficial effect of foreign trade in terms of economic development. On the other hand, developing economies are often exposed to the cyclical effects of foreign trade which inevitably results in economic instability and thus impedes economic growth. During prosperity, most of the earnings of these countries are frittered away on consumption goods which are mainly imported. The excess spending creates inflationary situation which also is inimical to economic growth. Thus export earnings are generally not used for economic betterment. Similarly, during depression developing countries are hit the worst. Not only do their earnings go down, but forces of deflation set in which means unemployment on a large scale bringing economic growth to a stand still, if not negative growth rate. As Gunnar Myrdal observes in his book "Economic Theory and Under-developed Regions" foreign trade has only yielded 'backwash' effect in the economies of developing economies. We thus see how development of under-developed countries has been adversely affected by international economic relations.

Conclusion

Thus, various factors, economic and non-economic, i.e., social, political and international, have conspired to retard economic growth of the under-developed countries.

Among the obstacles to economic growth, we referred briefly to the vicious circle of poverty. In view of its importance, we now devote a separate chapter to it. Looking at things from individual point of view, we find that a poor man is caught in a vicious circle. Being poor, he lacks the means to prosper and since he lacks the means to prosper, he must remain poor. The vicious circle is complete. Poverty leads to inefficiency and incapacity to do well, and inefficiency and incapacity must end in poverty. That is why we generally find that poverty is perpetuated from generation to generation. It is cumulative. In the capitalist world, it is indeed a miracle for a poor man to become rich; and who does not know that the rich people go on becoming richer and richer. That is the curse of poverty and its vicious circle.

What is true of an individual is true of the community as a whole. For an under-developed economy to develop economically is indeed an uphill task. In fact, the main cause of the under-developed countries remaining poor and under-developed is that they are caught up in the vicious circle of poverty. Poverty means that their per capita income is low and per capita income is low because the level of productivity per man is generally low in such countries. Since productivity per man is low, naturally income per capita is low, which means poverty. Thus, the vicious circle is complete.

Now the question is: why is productivity per man low? On what factors does productivity per man depend? Productivity per man depends on the quantity of capital equipment or machinery at the disposal of a worker. The higher level of productivity in the developed countries is due to the fact that each worker is provided with superior capital equipment. In the under-developed countries, however, a worker is supplied with primitive tools both in industry and agriculture. Naturally, the level of productivity is low. Hence, the amount of capital is

of crucial importance in determining the level of output and income in a country. In the under-developed countries, capital equipment per worker is poor in quality and meagre in quantity because the rate of capital formation in such countries is low.

The crux of the problem is capital formation. The rate of capital formation is affected both by demand for and supply of capital. Favourable factors operating on demand and supply will increase capital and adverse factors will result in diminution of capital and slacken its rate of growth. On the demand side, capital accumulation depends on the inducements or incentives to invest and on the supply side on the willingness and the ability of the people to save. Both on the side of demand and on the side of supply we are face to face with a vicious circle.

In the under-developed countries, the rate of capital formation is low because on the one hand, the rate of savings (*i.e.*, the supply of capital) is low and on the other the inducement to invest (*i.e.*, demand for capital) is less owing to small size of the market. The rate of savings and investment in an under-developed economy is too low to make for rapid development and since the rate of savings and investment are too small, it must remain under-developed. Here is the vicious circle of poverty embracing the entire economy. "It implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty. A country is poor because a country is poor." (Nurkse).

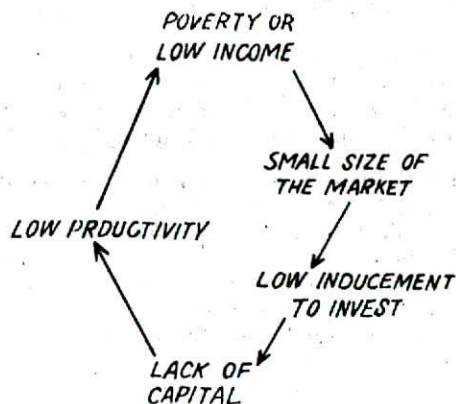
Let us now analyse the demand and supply sides of the vicious circle.

Vicious Circle on the Demand Side of Capital Formation

In a poor country, the level of productivity and so of incomes is very low which means a low purchasing power. Since the purchasing power of the

people is low, the scope for business and industry is correspondingly limited. The inducement to invest is practically absent. The rate of investment being low, productivity is low and the incomes are small completing the vicious circle. (See Fig. 72.1 below.)

Thus, the under-developed countries face the vicious circle of poverty on the demand side of capital formation because the size of market is too



Vicious Circle on Demand Side
Fig. 72.1

small. The result is that there is not much inducement for the businessmen and industrialists to make investments. Just as division of labour is limited by the size of the market, similarly, the inducement to invest is also limited by the size of the market. Since in the under-developed countries, the size of the market, *i.e.*, the demand for goods, is limited, the inducement to invest is small.

Let us clearly see how the vicious circle is created on the demand side of capital formation. Since the people of the under-developed countries are poor, *i.e.*, their income per capita is low, their purchasing power is low and demand for goods is less (*i.e.*, the size of the market is small). The market for goods being limited, their output is low and the industrialists cannot afford to use more productive capital equipment. Hence, investment is discouraged. Since, there is less inducement to invest, the rate of capital formation is low and the capital equipment available to each worker is small, and since capital available per worker is less, productivity per worker is low. Productivity per worker being low, income per capita is low and there is poverty. In this way, the vicious circle of poverty is complete on the demand side.

As Nurkse observes, "The inducement to invest may be low because of the small buying power of the people, which is due to their small real income, which again is due to low productivity. The low level of productivity, however, is a result of the small amount of capital used in production which in turn may be caused at least partly by the small

inducement to invest."¹ This completes the vicious circle.

Vicious Circle of Poverty on the Supply Side of Capital Formation

The vicious circle of poverty on the supply side of capital operates in this manner: Poverty in the under-developed countries means that the per capita income in such countries is low. Since per capita income is low, their capacity to save is low. When people cannot make even the two ends meet with their low income, the question of saving does not arise. That is why the rate of savings in the under-developed countries is extremely low. The rate of savings being low, the rate of investment in turn is bound to be low. Since the rate of investment is low, the rate of capital formation is low and hence there is great shortage of capital in the under-developed countries. Since the amount of capital per man is of vital importance in determining productivity, the level of productivity per worker is extremely low in the under-developed countries. The productivity per worker being low, the real income per capita is low and there is poverty. This is how the vicious circle is complete on the supply side.

Owing to poverty or low per capita income saving is less and when saving is less, the rate of investment is low. The rate of investment being low, the amount of capital per worker is small and when capital per worker is small, productivity per worker is low. Since productivity is low, the income per capita is low which means that the country is poor. In this way, we see that the cause of a country's poverty is poverty itself and as Nurkse says, "Under-developed countries are poor because they are poor."

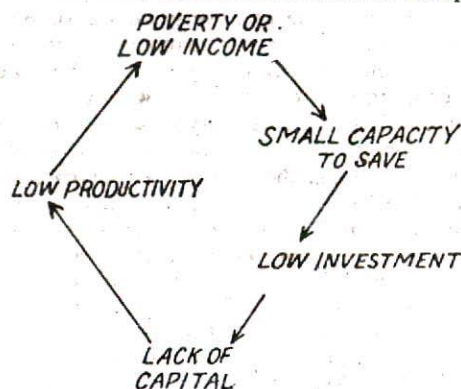
We thus see that the vicious circle of poverty operates on the supply side of capital formation and the main problem is how to break this vicious circle. We can show the vicious circle of poverty on the supply side by the Fig. 72.2 on the next page.

In addition to the vicious circle of poverty explained by Nurkse, Prof. Meir and Baldwin have given another vicious circle.² According to them the natural resources of the under-developed countries have not been fully tapped or developed and remain unutilised, or under-utilised in large quantities. The exploitation of these natural resources depends on the quality of human resources of these countries. But these human resources or population of such countries is economically backward. That is, they have not the ability and capacity of developing the natural resources or of making productive use

1. Nurkse, R., *Problems of Capital Formation in Under-developed Countries*, p. 5.

2. Meir and Baldwin—*Economic Development: A Theory, History and Policy*.

thereof. Since these countries are poor they are unable to improve the efficiency, ability and capacity of their people and owing to this inefficiency, incapacity or inability to make a fuller use of their natural resources, these resources remain unexploit-



Vicious Circle on Supply Side

Fig. 72.2

ed or under-utilised. Owing to the natural resources remaining unused or under-utilised, the level of output in such countries is low and the levels of national income and per capita income are low, i.e., these countries remain steeped in poverty. That is how from this point of view also, these countries are caught up in a vicious circle of poverty.

But it is now the ambition of under-developed countries to tread the road leading to full economic development and they are anxious to break the vicious circle of poverty to accelerate the process of economic growth. The vicious circle must be attacked at both ends, but it will be more effective to try to break it at the supply end. That is, the rate of savings must be raised so that the rate of investment may be increased and investment should be encouraged in all possible ways. Foreign aid can also be helpful. We discuss below how the vicious circle of poverty can be broken

Measures to Break the Vicious Circle: Measures to Promote Capital Formation

We have seen above how the under-developed countries are caught up in the vicious circle of poverty and how this vicious circle is a great obstacle in the way of their economic development. Now we have to see whether the vicious circle of poverty can be broken and if so how. Modern economists are of the view that the vicious circle can be broken if an economic effort is made in such countries. The developed and rich countries of today were also poor at one time and reached their present stage of development and prosperity by somehow breaking the vicious circle of poverty. From the study of their economic history, we learn that the poor countries of today can also remove their poverty and

reach the goal of a developed state through economic endeavour. The people of under-developed countries believed in the past that to be rich or poor depended on their destiny. But education and enlightenment have exploded these false notions. Now it is fully realised that if a serious and determined effort is made poverty can be removed. It is truly said that poverty is an old thing but the belief that poverty can be removed by human effort is new.

We have said above that capital formation is the crux of the whole problem. We can, therefore, break the vicious circle by stepping up capital formation. The following measures may be suggested:--

(i) **Raising the Rate of Savings.** The Government can raise the rate of savings in the country by taxation, deficit financing and by borrowing from the banks and the public. In this way, the low level of voluntary savings, which is due to low per capita income, can be raised by forced savings. The increased savings can be used for capital formation.

It is wrong to say, as is implied in the supply side of vicious circle, that since the under-developed countries are poor, it is not at all possible to increase their savings. In spite of low level of per capita incomes in such countries, there is still a great scope for increasing the rate of savings. There are extreme inequalities in the distribution of income and wealth. Per capita income is only an average income of the country. Actually, there are many people whose incomes are far higher. For instance, the per capita income in India at current prices was Rs. 850 in 1973-74. It is true that a person earning Rs. 850 per year cannot make any saving. But in India there are numerous people like Birla, Dalmia, Tata whose incomes are far higher. They earn lakhs of rupees a year. This means that there are numerous people in the under-developed countries who can save a lot.

But it is seen that in the under-developed countries, the rich people, who can make lot of savings, actually do not do so. They indulge in unproductive investments like jewellery, house building, etc., or dissipate their resources in costly social ceremonies like marriages or other forms of conspicuous consumption. That is why the rate of productive investment in such countries is low. Arthur Lewis, a specialist in economic development, is of the opinion that the under-developed countries are not so poor that they cannot save even 10 to 12 per cent of their income. Financial resources can be mobilised by taxing the high-income groups and the rate of investment can be raised thereby.

(ii) **Use of Foreign Capital.** The vicious circle of poverty can be broken and economic development accelerated by raising foreign capital also to supplement domestic resources. The developed countries of today were once poor and they developed them-

selves with the help of foreign capital in one form or another, at one time or another. The under-developed countries, too, can make up the deficiency of domestic savings by getting capital from abroad.

It is gratifying that the rich countries of the world like the U.S.A., Canada, the U.K., Western Germany, France and Japan are generously helping the under-developed countries to promote their economic development. There is a regular Aid-India Club (consisting of the rich countries) helping India financially with loans and grants to accelerate her economic growth. There is also Colombo Plan under which the under-developed countries of the Commonwealth are receiving aid for development. Besides, there are international organisations like the World Bank, I.M.F. and International Development Association by which financial aid for development is being given on reasonable terms.

But foreign loans have to be repaid and then there are yearly mounting interest payments. This may mean mortgaging the country's future. Besides, foreign aid has generally political strings attached thereto, either explicit or implicit. This is a threat to country's sovereignty and integrity. It is much better, therefore, for the under-developed countries to rely as much as possible on their own resources and avoid being burdened with heavy repayments abroad and thus retain their independent policy and action.

(iii) **Curtailling or Controlling Consumption.** The savings margin can be widened by putting curbs on domestic consumption by means of physical controls and fiscal measures. Russia and Japan were able to raise the level of their investment to 30 per cent of their national income to achieve a high level of economic development by adopting austerity measures and cutting consumption to the minimum. But in the under-developed countries, the standard of living is already very low and their governments are committed to the raising of living standards and improving economic welfare. This coupled with democratic form of government rules out the large-scale adoption of such restrictive measures. However, the consumption of luxury or semi-luxury goods can be controlled.

But there is a way out. Without cutting down the level of consumption, it is possible to raise the rate of savings and investment, if there is a relatively higher rate of savings from the increase in incomes. For example, if the rate of savings in a country is 5 per cent as a result of which 5 per cent of the national income is being invested, then there must be some increase in the national income. Suppose the national income goes up by Rs. 100 lakhs and if the major part of this additional income of Rs. 100 lakhs is saved, then the rate of aggregate savings in the country will increase. If, for instance, Rs. 25

lakhs are saved or Rs. 75 lakhs are spent on consumption, then the rate of savings in the country will rise higher from 5 per cent.

It may be borne in mind that even when the rate of savings has risen, consumption has not been cut down. Actually, consumption has increased by Rs. 75 lakhs and the rate of savings too has increased. If the entire additional income of Rs. 100 lakhs had been spent on consumption, obviously, the rate of savings would have gone down—saving Rs. 25 lakhs out of the additional income of Rs. 100 lakhs means that the marginal rate of savings is 25 per cent which is much higher than the previous average savings rate. When the marginal rate of savings exceeds the average rate, there is a tendency for the average savings rate to go up.

The upshot of the whole argument is that in the under-developed countries the rate of capital formation (savings and investment) can be raised even without lowering the level of consumption and in this way the standard of living of the people can be improved.

(iv) **Raising the Level of Production.** It is possible to widen the saving margin and step up the rate of capital formation by raising the level of production. This can be done in a number of ways:

(a) **Better Utilisation of Existing Capital Equipment.** It is generally seen that in the under-developed countries factories are working below their installed capacity either for the lack of raw materials or of shortage of power or on account of inadequacy of complementary resources such as skilled and trained personnel, or due to defective management. By removing these handicaps, fuller use can be made of the existing capital equipment. By raising the level of productivity in the country, the level of per capita income, and hence the capacity to save, can be increased. Since the under-developed countries suffer from scarcity of capital, it is only prudent that maximum possible use should be made of the existing capacity.

In this way, the aggregate output in the country can be increased without increasing the stock of capital. Japan provides a classical example of how a country can accelerate its economic growth and lift itself by its bootstraps. Owing to maximum utilisation of its installed capital capacity in the secondary and tertiary sectors by means of multiple shifts and better utilisation of labour, the capital-output ratio in Japan declined from 2.50 in 1883-92 to 1.29 in 1893-1902. This enabled Japan to escape a low level equilibrium trap and enter the Harrodian world of developed economies.³

(b) **Improvement of Technology.** The low level of production prevailing in the under-developed coun-

3. See D. Bright Singh, *Economics & Development*, 1966, p. 175.

tries and hence the level of national income, can be raised by improving techniques of production or by adopting modern techniques. Modern technology is capital saving (which amounts to increasing capital) and helps in achieving larger output with relatively smaller use of real resources. Productivity in the U.S.A. and Western European countries was substantially increased by automation and rationalisation. There is undoubtedly great scope for the underdeveloped countries like India to adopt the advanced technology of the West to suit their own requirements and factor endowments. "Without any exaggeration it may be said that economic growth is a function of technological expansion of the right type."⁴

(c) **Optimum Use of Labour Resources.** There is no doubt that labour in the advanced countries works harder and works more willingly than is the case in the under-developed countries, where labour is generally a shirker and indisciplined. Germany and Japan have built up their war-devastated economies rapidly mainly with the help of efficient labour force. Generally, in the under-developed countries, labour is abundant and cheap and there is vast scope for increasing the national output by a fuller and better utilisation of their manpower. It is a sad commentary on the state of affairs prevailing in the low-income countries where labour insists on the rights and privileges and conveniently ignores their duties and responsibilities.

(v) **Productive Employment of Surplus Labour in Disguised Unemployment.** In the under-developed countries, there is lot of surplus labour to be found in the form of disguised unemployment. In view of its importance as a potential source of capital formation we discuss it more fully in the next chapter. Here it may suffice to say that in the agricultural sector, in the under-developed but over-populated countries, more people are apparently employed than there is need for them. This surplus labour can be withdrawn from agriculture without in any way diminishing the agricultural output (since in agriculture their marginal productivity is zero) and they can be employed elsewhere more productively, e.g., in road making, irrigation works which are labour-intensive. But the full effect of capital contribution from the transfer of surplus labour from agriculture would follow only if their consumption level does not rise. That is, the labour left behind does not consume more than before nor does the labour transferred to more remunerative employment start consuming more, otherwise the saving and investment potential will be reduced. The level of consumption can be prevented from rising by means of direct or indirect taxation.

(vi) **Encouraging Investment.** So far we have

tried to tackle the problem of capital formation from the supply side, i.e., side of savings. Now let us see what can be done to break the vicious circle of poverty on the side of demand, i.e., investment side. We said that the under-developed countries are poor because there is not much inducement to invest. Obviously, if active steps are taken to encourage investment, the level of output and income will rise. Through wise monetary and fiscal policies, the Government can encourage investment. The Government may follow cheap money policy and give tax concessions and rebates on new investment. For instance, there are provided in India tax holiday for new enterprises, liberal depreciation allowance in corporation tax, etc. Protection is granted to domestic industries from foreign competition. Infrastructure (i.e., economic and social overheads) are built up to promote trade and industry. Industrial estates are set up, and so on.

If the flow of finance into investment is obstructed by institutional factors it can be facilitated by making institutional changes and by setting up financial institutions, e.g., in India were set up Industrial Finance Corporation of India, State Financial Corporations, Industrial Credit and Investment Corporation, Industrial Development Bank of India, etc.

(vii) **Strategy of Balanced Growth.** Again, to break the vicious circle of poverty on the demand side of capital formation, Nurkse recommends the strategy of balanced growth. According to him, if investment is made in one particular industry, it is likely to fail owing to low income and low purchasing power of the people. That is why private investors are discouraged from investment in a particular industry. But Nurkse says if investment is made in several industries simultaneously, then the persons employed in different industries become consumers of the goods produced by one another since they have all acquired more purchasing power. That is, the industries in which investment has been made create demand for one another. In this way, balanced growth, in which investment is made simultaneously in a number of industries, creates its own demand. This is how, in Nurkse's opinion, the vicious circle of poverty can be broken on the demand side by means of balanced growth.

It may be pointed out that Nurkse seems to have exaggerated the difficulties on the demand side of the vicious circle. Actually, the demand in the under-developed countries for certain products is quite substantial and if investment is made in these directions, it can prove quite fruitful. The reason is that even though per capita income is low in such countries, yet there are many people whose incomes are high enough to be able to purchase the newly manufactured goods. Who does not know that in India—a low income country, the demand for scooters, cars, and many other commodities is al-

4. *Ibid.*, p. 176.

most insatiable? Who can say, therefore, that investment in these industries is less because the demand is less?

Another noteworthy thing in this connection is that many commodities are imported in large quantities in the under-developed countries which shows that there is a great demand for them. Hence, through a policy of import substitution investment can profitably be made in the manufacture of such commodities or their substitutes. For them there is no dearth of demand or small size of the market.

Conclusion

The vicious circle must be broken at both ends. The supply of savings, both from domestic and foreign sources, must be increased and the State must provide incentives for investment by means of a suitable monetary and fiscal policy. The low level of real income reflecting low productivity is the crucial point both in the demand circle and the supply circle. Of these, the supply end is more difficult to break than the demand end. It is obviously easy to create or increase demand for capital but it is not so easy to make up the deficiency of capital. The country may also suffer from lack of natural resources like water and mineral resources or the poverty of the soil. But, in the matter of economic development, the things of crucial importance are the small capacity to save and small inducement to invest. Other deficiencies can be made up and the handicap of the natural factor removed, if the problem of capital formation is successfully tackled.

FOREIGN AID AND ITS ROLE IN ECONOMIC DEVELOPMENT

We have already referred to a low rate of capital formation as one of the primary causes of the vicious circle of poverty in the under-developed countries. The domestic saving rate being very low in such countries, foreign aid assumes great significance if a poor country wants to come out of the vicious circle. Let us therefore consider at some length first the concept of foreign aid and then its role in economic development.

The Concept of Foreign Aid

The term foreign aid is generally used in the sense of flow of resources from the rich countries to the poor under-developed countries. But it has been variously defined. According to the United Nations, economic aid means outright grants and long-term loans for non-military purposes by Governments and various international organisations. An appropriate definition of foreign aid is given by R. F. Mikesall according to whom foreign aid is a

“Transfer of real resources or immediate claim on resources from one country to another, which would not have taken place as a consequence of the operation of market forces or in the absence of specific official action designed to promote the transfer by the donor country. Thus foreign aid so defined includes both direct government transfers and those promoted by special official action such as government guarantees. It avoids some other motivation on the part of a donor country on the ground that motivations do not in themselves determine the nature and extent of the benefits of the recipients. The transfer of resources should have as their main objective the promotion of economic development and welfare of the developing countries.

Role in Economic Development

The objective of foreign aid is the achievement of sustained economic growth by the recipient country i.e. achieving a given target rate of growth which can be sustained without further external assistance.

We may notice three basic approaches to foreign aid requirements for a developing country: (i) The Savings-investment gap approach, (ii) Foreign exchange earnings and expenditure gap; and (iii) the capital absorption approach. The first two approaches viz., the Savings-investment gap and foreign exchange earnings and expenditure gap yield identical results. Foreign aid is equal to both the gap between imports and exports and the gap between domestic investment expenditure and domestic savings.

The third approach viz., the capital absorption approach assesses the capital requirements of a developing country on the basis of the ability of an economy to utilise both domestic and foreign capital efficiently i.e. it should yield a minimum rate of return. In other words, it has to be seen that foreign aid is not just frittered away in senseless and useless plans. Foreign aid is regarded as a means of overcoming internal obstacles to growth and as a catalyst for mobilising domestic resources for economic development. According to H. M. Chenery and H. M. Strout, foreign aid should make a contribution to the transformation of a poor stagnant economy by raising the levels of skills and improving economic organisation through removing resource bottle-necks and encouraging self-help measures in the administration of foreign aid. This is a more comprehensive view than merely focussing attention on investment-saving gap or import requirements and foreign exchange earnings gap.

Thus, foreign aid makes a significant contribution to the acceleration of the pace of economic growth. (a) by overcoming shortages and (b) by supplementing domestic resources.

In the previous chapter, we briefly referred to disguised unemployment as a potential source of capital formation. In view of its importance in the theory of economic growth, we examine it more fully here.

In the under-developed countries, we find large-scale open unemployment and disguised unemployment, especially in the agricultural sector, owing to rapidly increasing population. Specialists in the theory of economic development like Ragnar Nurkse, Maurice Dobb and Arthur Lewis, have suggested the use of surplus labour found in disguised unemployment in the under-developed countries for capital formation and for promoting economic development. According to them, disguised unemployment, which indicates surplus labour and which at present is a great liability, can be converted into a great asset. Hidden in the surplus labour in agriculture is substantial saving available for capital formation. Nurkse and other development economists are of the view that there is great scope for increasing the rate of capital formation and for accelerating economic growth if the surplus labour is withdrawn from agriculture and is used in more productive employments elsewhere.

We shall discuss below what disguised unemployment means and how it can be used for capital formation and for promoting economic development.

Meaning of Disguised Unemployment

Joan Robinson was perhaps the first economist who used the term 'disguised unemployment'. But she used this term for the people taking to occupations with comparatively low productivity and income instead of occupations of high productivity and large income during periods of depression in the developed and advanced countries. But the term 'disguised unemployment' is used in a different sense in the under-developed countries.

In the under-developed countries, 'disguised unemployment' refers to a situation where too many people are engaged in agriculture. A common characteristic of the over-populated under-developed countries is that a large majority of population draw their livelihood from agriculture. In a situation of rapidly increasing population and owing to slow rate of industrialisation, naturally a large number of people gravitate to land, because sufficient employment opportunities are not available in the non-agricultural sector to absorb the growing population. The result is that more people are apparently engaged in agriculture than are warranted by the size of the land holdings and capital available and the techniques of cultivation. If some of them are withdrawn, it will not reduce agricultural output and may perhaps increase it, because as it is said too many cooks spoil the broth. This disguised unemployment is found in the self-employed agricultural population. The term 'disguised unemployment' is used to refer to such a situation because such people are only apparently employed. In fact they are unemployed or only partly employed and their unemployment is concealed. Since more people seem to be working in agriculture than it is necessary, some of them can be withdrawn without reducing the total output. In other words, their marginal productivity is zero.

In Nurkse's words, "There is disguised unemployment in the sense that even with unchanged techniques of agriculture, a large part of the population engaged in agriculture could be removed without reducing agricultural output The same farm output could be got with a smaller labour force."

Some economists are of the view that the term 'disguised unemployment' refers to seasonal unemployment, because all workers are able to get full

1. Nurkse, 'R.—*Problems of Capital Formation Under-developed Countries*, p. 33.

employment during the harvesting season. This is true to some extent, but even in the harvesting season, work can be so arranged as to be able to manage it with a smaller number of people. Even when employment is seasonal, there is still the question of making a productive use of this labour. The seasonal unemployment too has an important role to play in capital formation in under-developed countries. Economists like Nurkse think that disguised unemployment is not merely seasonal in the under-developed countries but is to be found throughout the year.

Difference between Disguised Unemployment and Open Industrial Unemployment. The disguised unemployment of under-developed countries in agriculture is different from the open industrial unemployment to be found in the developed countries. The cause of open unemployment in the industrial countries is the deficiency of effective demand during depression. Owing to a reduction in aggregate demand, output is reduced in some factories and other factories are altogether closed on account of lack of demand for their goods. As a result, labour employed in such countries is retrenched. Thus, there is open unemployment of industrial labour, in spite of the availability of capital. The cause of this unemployment, as we have said just now, is the reduction in aggregate demand. This type of unemployment can be removed by increasing aggregate demand by creating new money or by deficit financing, *i.e.*, by putting new purchasing power in the hands of the people.

On the contrary, the disguised unemployment to be found in the agricultural sector in the under-developed countries is due not to the deficiency of demand, as in the case of open unemployment in the industrial sector of the developed countries, but to the deficiency of capital equipment, *i.e.*, a low rate of capital formation as compared with a high rate of population growth.

In other words, the disguised unemployment in the under-developed countries is caused by a lack of capital formation, industrialisation and economic development commensurate with the rapid increase in their population. That is why it cannot be cured by deficit financing and by creating new money. Deficit financing would merely raise prices in such countries and there would be inflation because owing to deficiency of capital, output of goods cannot be increased in these countries as fast. Hence, deficit financing will have no effect in removing this unemployment.

Another important difference between agricultural disguised unemployment in the under-developed countries and the open industrial unemployment in the developed countries is that, in the developed countries unemployed industrial labour can take up minor jobs for a temporary period during depression. But in the under-developed countries, dis-

guised unemployment is more or less a permanent feature arising out of excess of labour and the scarcity of capital, and not because of any deficiency of demand.

Characteristics of Disguised Unemployment. Nurkse mentions the following characteristics of disguised unemployment:-

(a) The marginal productivity of labour in disguised unemployment is zero.

(b) It is usually associated with family employment or self-employed labour and not wage labour.

(c) It is not possible to identify personally disguised unemployed labour.

(d) It is to be distinguished from seasonal unemployment caused by climatic factors.

(e) The disguised unemployment in under-developed countries is to be distinguished from industrial under-employment in the developed countries.

Extent of Disguised Unemployment

The magnitude of disguised unemployment in the under-developed countries has been roughly estimated at about 25%.² A study by the Royal Institute of International Affairs in 1943 estimated disguised unemployment for the Eastern European regions as the lowest at 20 to 25%. Doreen Warriner placed the surplus labour in Egypt in 1937 at about one-half of the farm population. According to a body of U.N. experts, for many regions of India and Pakistan, and for parts of Philippines and Indonesia, the surplus cannot be less than the pre-war average for the East European region. Nurkse himself is of the view that in many countries ranging from South East Europe to South Eastern Asia, the magnitude of disguised unemployment may be 15 per cent, 20 per cent, or as much as 30 per cent. A study of nine selected villages in the Bombay Karnataka region revealed that 71 per cent of the farmers had less than normal employment and 52 per cent less than half the normal employment.

Disguised Unemployment as a Potential Source of Capital Formation

Nurkse recognised disguised unemployment as a saving potential. That is, in Nurkse's view there is a hidden saving in disguised unemployment which can be used for capital formation in the under-developed countries. According to Nurkse, surplus labour can be withdrawn from agriculture and utilised for capital formation activities like road building, irrigation projects, railway construction, building of houses, factories, *etc.*

The question is: Wherefrom should the finance be obtained for such projects? How are the workers transferred from agriculture to these projects of

2. See Brigh Singh, D—*Economics of Development*, p. 179.

capital formation to be fed? In Nurkse's view, the best solution to this problem is that the surplus labour transferred from agriculture to capital formation projects should be given their own food that they left behind in the farm families. It is assumed that when surplus labour is withdrawn from agriculture there is no diminution in agricultural output. This means that with the families left behind in agriculture there is surplus food which was being consumed by the people who have not been withdrawn from agriculture. In a nutshell, the work of capital formation should be carried on by the people transferred from agriculture supported by the very food that they were consuming before when they were attached to agriculture. That is, capital formation effected by the surplus labour transferred from agriculture is the result of saving not from any other sector or of foreign aid but their own saving concealed in disguised unemployment in agriculture. That is why Nurkse has put forward the view that there is a saving potential in the disguised unemployment in agriculture in the under-developed countries. That is how additional capital can be generated in the under-developed countries by productive employment of surplus labour without extra cost.

How this source of capital formation can be exploited by the under-developed countries can be explained in this manner: The people who are engaged in agriculture have the capacity to save. The productive workers (*i.e.*, those who are fully employed) support those unproductive workers who are only partly employed or those who are only apparently employed but are actually making no contribution (*i.e.*, their marginal productivity is zero). These unproductive workers can be transferred elsewhere from agriculture to productive employments, *i.e.*, to capital formation projects. The productive workers in agriculture are really making a saving. They are producing more than their own consumption and with this extra production they are supporting the unproductive workers who are their own kith and kin. But this saving of the productive workers is going to waste because it is consumed by those who can be taken away from agriculture without reducing agricultural output. In Nurkse's words, "If the productive peasants were to send their useless dependants—their cousins, brothers and nephews who live with them, to work on capital projects and if continued to feed them here, then their virtual saving would become effective saving. The unproductive consumption of surplus farm population would become productive consumption³ and we add it would become a source of capital formation.

Suppose there are 1,000 persons engaged in agriculture in a village and 25 per cent of them, *i.e.*,

250 are surplus. These are being supported by the remaining 750 persons. Now suppose these 250 workers are transferred to some capital projects elsewhere. If consumption is maintained at the old level, then the 750 persons remaining back in agriculture can transfer the food consumed by 250 before to feed them in their new occupation. What they produce in their new occupation becomes a net contribution to capital without lowering the per capita consumption of the farming population (though aggregate consumption in the village will be reduced).

Thus, we see that the disguised unemployment in agriculture (*i.e.*, surplus labour) can be used for capital formation in under-developed countries and the resources for this purpose can be obtained from the disguised unemployment itself. The farming population need not lower its level of consumption. But it is necessary that they should not raise the level of their consumption. Nor is it necessary for these agricultural workers to lower their consumption who have been transferred from agriculture to some other productive employment. But they have also to see that their level of consumption does not rise. Hence, capital formation out of disguised unemployment is possible without lowering the level of consumption. In this way, the rate of capital formation in the under-developed countries can be raised without lowering the level of consumption.

Here, the relationship between consumption and investment (*i.e.*, capital formation) is midway between the classical and the Keynesian views of this relationship. According to classical theory, as we have already pointed out, it is necessary to reduce the level of consumption in order to raise the rate of capital formation. As against this, according to the Keynesian view, both consumption and investment can be increased at the same time. In fact, Keynes advocates raising of consumption to increase investment. But the relationship between consumption and investment (*i.e.*, capital formation) set out above (*i.e.*, Nurkse's view) is different from Keynesian view in this that here consumption and capital formation do not rise at the same time; only capital formation rises and consumption level remains the same. This is a new theory that the rate of capital formation can be raised without sacrificing consumption.

"Hence, Nurkse argues that while the classical economists stressed the need of restricting consumption so that the level of savings could be raised to support a higher level of investment and Keynes pointed out that by raising the level of consumption and spendings, income level and thereby the level of investment can be raised, the method which he has suggested would raise investment without lowering consumption."⁴

3. *Ibid.*, pp. 37-38.

4. Bright Singh, D.—*Economics of Development*, p. 179.

Critical Evaluation of Disguised Unemployment as a Source of Capital Formation

The view put forward by Nurkse of the possibility of using disguised unemployment seems to be plausible and theoretically possible. But let us see how far it is practically feasible. As we have already said, the transfer of surplus labour can result in capital formation only if the level of consumption is prevented from rising and if the transfer does not cost much and transferred labour can be put on suitable jobs and are provided with suitable equipment without increasing much cost. This indeed is a very big 'IF'. Hence, the proposal to make use of surplus labour for capital formation suffers from serious limitations and there can be several leakages. That is why many economists do not subscribe to Nurkse's thesis. They admit that there is surplus labour in agriculture in the form of disguised unemployment. But owing to several difficulties they do not agree that its saving potential can be actually realised:

(i) It is very likely that the consumption level of the labour left behind as well as of the labour transferred rises to nullify the saving potential. Since the consumption level is already very low, the agricultural output may fall, when some labour is withdrawn, unless consumption level is raised. Also, when surplus labour moves from the rural to urban areas where the level of consumption is higher and the wages are higher too, the propensity to consume of the transferred labour is bound to go up. They will tend to consume more because they have now to put in more work. The workers who have been left behind in agriculture and whose dependants are now gone, will feel a little better off and will have more to eat. They will, therefore, be tempted to raise their level of consumption, when they have now more to eat. They must also consume more, because they have now to work more to maintain the old level of output, since the number of workers has been reduced on account of transfer of some of their co-workers.

Thus, we see that, when some labour is transferred from agriculture to other productive employment, the level of consumption of those who have been left behind and of those who are transferred, has a strong tendency to go up. The rise in consumption of the workers concerned will eat up the saving potential of disguised unemployment. In fact, the leakage in the savings potential will be substantial.

(ii) Another leakage will arise on account of cost of transport. Costs will have to be incurred in transporting labour from villages to urban areas or to the sites of construction works started for the purpose of absorbing surplus agricultural labour. There will be costs involved too in transporting food

to feed the surplus labour that has been transferred to new areas. These costs of transport must be set off against the saving expected from the transfer of surplus labour from agriculture.

(iii) There are some other costs too which the scheme will involve. Obviously, labour cannot be dislodged from their native places and taken to other areas unless higher wages are offered. This will increase the cost of the investment works undertaken in this connection. Capital equipment will have to be supplied to the labour transferred to new projects. There will be additional administrative burden. Competent personnel will have to be engaged to supervise and organise the work. These costs may add up to a much higher figure than it is assumed and may substantially cut down the saving potential of disguised unemployment.

(iv) Besides, there is the difficulty of choosing a suitable job for the transferred labour and to plant them in a convenient location. It may not be possible to start development projects in the vicinity of the village from which the workers are sought to be transferred. Further, these people have no training and can do only unskilled labour. They are tied to the native place by a sentimental attachment. Unless they expect to get the jobs which are congenial and unless the place of work is congenial and the working conditions are congenial, the transfer of labour may provoke adverse reaction. They may, in fact, return to their native place.

(v) Further, it is most likely that the type of people who are transferred from the villages are backward and poor. Hence, the wage goods released may be of the lowest consumption level. Consequently, the savings so made may not be substantial and worthwhile.

(vi) Another difficulty relates to the procurement of foodgrains from the farming population left behind in agriculture and making it available to the transferred labour in their new place of work. Will the Government collect it by means of a tax or through procurement at fixed price or will it require the transferred labour to purchase it in the free market with the cash wages paid to them? Thus, it is very difficult to procure foodgrains and to arrange its distribution among the transferred labour. The Government will be powerless to collect such large quantities of foodgrains by means of a tax. If it is compulsorily procured at fixed prices, payment in cash will have to be made to the farmers and they will spend it on the purchase of other commodities. This means that the output of industrial consumer goods will increase.

In this way, consumption will increase which Nurkse's doctrine assumes to be kept at the previous level. If the distribution of foodgrains is left to the free market forces the prices of foodgrains will be pushed up in the country and an inflationary

situation will be created. The reason is that the consumption level of the transferred labour will have gone up and so also of the farmers left behind. On the one hand, the marketable surplus will be reduced and on the other the consumption of transferred labour will go up and the prices will rise. Thus, we see that the saving potential for capital formation in disguised unemployment is reduced and the possibility of price rise is increased which will impede economic growth in the country.

This doctrine may well work in socialist countries like the U.S.S.R. and China where the governments can compulsorily procure foodgrains from the farming population without paying any price and use it for feeding the transferred labour. The Government there can also compel the people to keep their consumption at the old level. But such things are simply out of the question in a democratic country like India. Hence, saving potential in disguised unemployment cannot be used for capital formation without increasing consumption. It is true that some people in India were persuaded to give their free labour for the community under the leadership of Acharya Vinoba Bhave but its impact is negligible. Also, under the community development programme in India people have been asked to give their free labour for the construction of roads, school buildings, construction of hospitals, minor irrigation works, etc. But this also made only a limited contribution to capital formation.

Thus, there are several difficulties in individualistic and democratic countries like India in using saving potential in disguised unemployment for capital formation. Although it is admitted that there is a large-scale disguised unemployment in agriculture but its saving potential for capital formation is denied.

(vii) There is another formidable difficulty of identifying the disguisedly unemployed labour in agriculture. Who is going to pick and choose to transfer this labour elsewhere, the state or the farming families or such workers will themselves opt out? In actual practice, it will be found that the task is not only difficult but impossible. Agricultural operations provide work for all young and old and even children. Some persons are fully occupied some time and some others at other times. It is very difficult to lay finger on those workers whose marginal productivity is zero. Because calculation of marginal productivity itself is too difficult a task to be lightly undertaken.

Conclusion. The difficulties mentioned above are quite real and the doctrine of surplus labour as a potential source for capital formation as propounded by Nurkse suffers from serious limitations. But the phenomenon of disguised unemployment in the under-developed countries cannot be denied. It does constitute a potential source of capital forma-

tion without putting undue strain on the economy if the Government concerned can devise an effective way of putting it into practice. The under-developed countries, which suffer from capital deficiency but which are keen on economic development, have to make a start in capital formation and Nurkse has suggested how it can be done. The central idea of the scheme is to avoid wastage of resources, natural or human and to make optimum utilisation of them by transferring them from less productive uses to more productive uses and to increase the G.N.P. Looked at from this angle, the doctrine is based on sound economic logic.

Solution of the Problem of Disguised Unemployment

In the under-developed countries, there is disguised unemployment not only in the agricultural sector, but there is also large-scale unemployment in the urban areas. In agriculture, unemployment is hidden and disguised but in the urban area it is open, full and visible. Now the question is whether employment should be provided to those who are totally unemployed or to the partially employed or disguisedly unemployed people.

When there is not much scope of saving potential in agriculture for capital formation, the best thing would be to create employment opportunities in the urban areas for people who have no jobs. The wise course seems to be first to put the altogether unemployed persons on the job and then solve the problem of disguised unemployment. Our view is that the best method of removing disguised unemployment is to raise agricultural productivity through agricultural improvements. Agricultural productivity can be raised by the use of modern agricultural inputs like high-yielding varieties of seeds, fertilizers in heavy doses, pesticides and ample irrigation facilities. Then there will be new employment opportunities available in agriculture. For instance, more labour is required in a system of multiple-cropping. If this system is extensively adopted, employment will certainly increase or disguised unemployment will decrease.

In this way, the problem of disguised unemployment or under-employment can be solved by raising agricultural productivity or by agricultural development. Since in disguised unemployment some workers do not get enough work to do and their removal will not reduce output, their marginal productivity is zero. But when there is a green revolution, as a result of which agricultural productivity will go up and more and new employment opportunities will be available, the problem of disguised unemployment will be automatically solved.

Thus, we see that to remove disguised unemployment it is not necessary to withdraw those workers

from agriculture whose marginal productivity is zero. But we should raise their marginal productivity in that very sector by improving agricultural practices. This would solve their problem and there will be no difficulties that have to be faced in withdrawing the disguisedly unemployed labour and putting them to productive work elsewhere.

LEWIS MODEL OF ECONOMIC DEVELOPMENT WITH UNLIMITED LABOUR SUPPLY

W. Arthur Lewis has presented a theory of economic development with the use of unlimited supply of labour. The supply of labour in underdeveloped countries generally is perfectly elastic at the current wage rate. That is, an unlimited supply of labour is available at the subsistence wage. This unlimited supply of labour is drawn from surplus agricultural labour, casual labour, domestic servants, women in households, etc. In all these sectors, the marginal productivity of labour is negligible or zero.

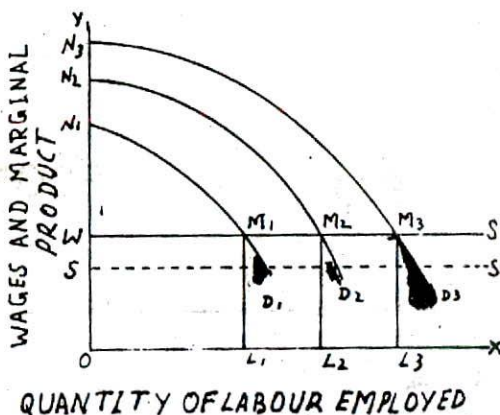
Some economists contend that there is not much surplus labour actually available for capital formation so as to be useful for economic development. Lewis model is more in accord with this reality. His model is not based on disguised unemployment but on some other conditions, viz., (a) The wage rate in the industrial sector is above its marginal productivity in the subsistence sector by a small but fixed margin. (b) The investment in the industrial sector is not large relative to population growth. (c) The cost of training of the skilled workers is constant.

In his model, Lewis analyses the process of economic development in terms of inter-sectoral relationships in a dual economy composed of a 'capitalist' (manufacturing, mining, etc.) Sector and a 'subsistence sector or the self-employment sector. In an overpopulated country, the capitalist sector draws labour from the subsistence sector of which there is an almost unlimited supply. The wage in the capitalist sector depends on what labour gets/earns in the subsistence sector and is a bit higher so as to attract labour. Hence at this wage, the supply of labour is perfectly elastic which means the capitalist sector can have as much labour as it requires. Subsistence wage, in turn, is governed by the conventional view of the minimum required for subsistence or by the average product per worker in subsistence agriculture.

Since marginal productivity in the capitalist sector is higher than the current wage rate, it yields a surplus or profits to the capitalist. The surplus is reinvested and creates new capital which in turn raises the marginal productivity and increases employment in the capitalist sector. This process does not raise wages but increases the surplus or share of profits in the national income. This process goes on.

Profits grow relatively as the capitalist sector expands and capital formation increases.

The following diagram illustrates this process:



In this diagram, quantity of labour is represented along OX and wages and marginal productivity along OY. OS represents subsistence earnings and OW capitalist wage. WS is the perfectly elastic supply of labour at OW the capitalist wage. Initially the demand for labour is represented by the marginal productivity curve of labour $N_1 D_1$. Labour is employed up to the point where the marginal productivity equals the current wage rate OW. Thus the amount of labour employed initially is OL_1 . Labour share (i.e. wages) in the total product $ON_1 M_1 L_1$ is $OWM_1 L_1$ and share of profits or surplus going to the capitalist is $WN_1 M_1$. On reinvestment of the profits, the marginal productivity of labour rises to $N_2 D_2$, and employment of labour will increase to OL_2 . In the same way, further investment will raise the marginal productivity of labour to $N_3 D_3$ and employment increases further to OL_3 and capitalists surplus on profits to $WN_3 M_3$. This process repeats itself. Capital formation resulting from credit creation and deficit financing adds to the capital formed out of real savings and leads to accelerated rate of investment and quicker utilisation of surplus labour. This results in inflationary pressure. But according to Lewis such inflation will be self-destroying rather than cumulative, because increase in the production of goods and services will, in course of time bring down prices. Larger profits will facilitate more saving so that capital formation out of real savings overtakes capital formation out of credit creation and deficit financing. This means that in course of time, credit creation deficit financing will become unnecessary.

Arthur Lewis, however, points out that the process of economic growth must come to an end (a) when no surplus labour is left (b) when population declines (c) when food prices rise pushing up wages and (d) when workers press for higher wages.

Meaning

Economic development or economic progress has been defined in two ways: According to one definition, economic growth means growth of national income of the country. In other words, it implies an increase in the net national product in a given period, say, a year. Some economists consider this definition as inadequate and unsatisfactory. They argue that even if the national income goes up, the general standard of living may go down. This can happen if population of the country is rising more rapidly than the growth of the national income. If the national income is rising at the rate of 2 per cent and population is increasing at the rate of 3 per cent, the level of living of the people is bound to go down. This is because on account of population increasing at a higher rate than the growth of the national income, per capita income falls and when per capita income goes down, we cannot call it economic growth. The country will have registered economic growth only if per capita income has gone up and this will happen only if the national income grows at a higher rate than the growth rate of the population.

Thus, a better definition of economic development will be to base it on per capita income. According to this definition, economic growth means the increase in per capita income of the country at constant prices. A higher per capita income would mean that people are better off and enjoy a higher standard of living, and to raise the level of living of the people is the main objective of economic development. But the increase in national income or per capita income must be maintained for a long time. A temporary or short-lived increase will not connote real economic growth.

In an earlier chapter (70), we mentioned the characteristics of under-developed countries. The best definition of economic development would be to say what a developed country would be like.

“Viewed in this manner, economic progress is the advancement of a community along the line of evolving new and better methods of production, and raising of the levels of output through development of human skill and energy, better organisation and the acquisition of capital resources”. . . . Economic development also brings in its wake important social, institutional and organisational changes. A rise in national and per capita income is implicit in economic growth. This improvement in income helps and in turn is facilitated by larger savings, increased capital formation and technological development. Rise in the per capita availability of capital resources, improvement in the skill, efficiency and earning power of labour, better organisation of production, development of means of transport and communications, growth of financial institutions, urbanisation, rise in standards of health and education and expectation of life, greater leisure and increased recreation facilities and widening of the mental horizon of the people, all these characterise economic growth.”¹ This is, in a nutshell, what economic development means.

The essence of economic development consists in the growth of output or real income per head of the population. Economic growth means the transformation of an economy from the state of under-development to a state of development, from an agrarian to a highly industrialised society, from a low saver to high saver and from a predominantly rural to a predominantly urbanised society. This transformation is mainly reflected in a sustained and steady rise in national income and per capita income.

Stages of Economic Development

Prof. Rostow, an eminent economic historian and a specialist in economic development, has divided

1. Bright Singh, D.—*Economic Development*, p. 1.

the historical process of economic growth into three stages: (1) the preparatory stage, (2) the 'take-off' period and (3) the period of self-sustained growth. Now a word about each of these.

Preparatory Stage covers a long period of a century or more during which the preconditions for take-off are established. These conditions mainly comprise fundamental changes in the social, political and economic fields; for example (a) a change in society's attitudes towards science, risk-taking and profit-earning; (b) the adaptability of the labour force; (c) political sovereignty; (d) development of a centralised tax system and financial institutions; and (e) the construction of certain economic and social overheads like rail-roads and educational institutions.

The "Take-off" Period. This is the crucial stage which covers a relatively brief period of two or three decades in which the economy transforms itself in such a way that economic growth subsequently takes place more or less automatically. "The take-off" is defined as "the interval during which the rate of investment increases in such a way that real output per capita rises and this initial increase carries with it radical changes in the techniques of production and the disposition of income flows which perpetuate the new scale of investment and perpetuate thereby the rising trend in per capita output."

The term 'take-off' implies three things: firstly, the proportion of investment to national income must rise from 12 to 15 per cent definitely outstripping the likely population increase; secondly, the period must be relatively short so that it should show the characteristics of an economic revolution; and thirdly, it must culminate in self-sustaining and self-generating economic growth.

Period of Self-sustained Growth. This is, of course, a long period of self-generating and self-propelling economic growth. The rates of savings and investment are of such magnitude that economic development becomes automatic. Overall capital per head increases as the economy matures. The structure of the economy changes increasingly. The initial key industries which sparked the take-off decelerate as diminishing returns set in. But the average rate of growth is maintained by a succession of new rapidly-growing sectors with a new set of pioneering leaders; the proportion of the population engaged in rural pursuits declines, and the structure of the country's foreign trade undergoes a radical change.

It is both with the problems and the cyclical movements of national income in such growing economies in the third stage that the bulk of modern theoretical economics is concerned. The students of contemporary under-developed countries and also of economic history are more likely to be concerned with the economics of the first two stages, that is, the

economics of the preparatory and the 'take-off' stages. If we are to have a useful and adequate theory of economic growth, it must, obviously, be comprehensive enough to embrace these two stages as well, especially the economics of the "take-off".

DETERMINANTS OF ECONOMIC GROWTH

We have said that economic development means the transformation from low income to high income society. Let us see now the conditions which facilitate this transformation and maintain a sustained and steady rate of growth. The process of economic development is a highly complex phenomenon and is influenced by numerous and varied factors, such as political, social and cultural factors. As such, economic analysis can provide only a partial explanation of this process. To repeat here the remark of Prof. Ragnar Nurkse in this connection, "Economic development has much to do with human endowments, social attitudes, political condition and historical accidents. Capital is a necessary but not a sufficient condition of progress." The supply of natural resources, the growth of scientific and technological knowledge—all these too have a strong bearing on the process of economic growth. We shall briefly notice some of these factors one by one. From the standpoint of economic analysis, the most important factors determining the rate of economic development are:

- (i) Availability of natural resources;
- (ii) The rate of capital formation;
- (iii) Capital-output ratio;
- (iv) Technological progress;
- (v) Dynamic Entrepreneurship;
- (vi) Rate of growth of population.
- (vii) Social overheads like education and health.
- (viii) Non-economic factors.

Availability of Natural Resources

The quantity and quality of natural resources vitally affect the economic growth of a country. Among the natural resources, we generally include the land area and the quality of the soil, forest wealth, good river system, minerals and oil-resources, good and bracing climate, etc. A country's productive capacity largely depends on the natural resources available. Without a minimum availability of natural resources it is idle to expect any sizable economic growth. But it may be noted that the existence of natural resources is not a sufficient condition of economic growth. For instance, India is blessed by nature with good and sufficient resources, yet it is poor and under-developed. This is due to the fact that the natural resources have not been properly harnessed and fully exploited. Hence, availability of natural resources by itself cannot bring about economic development. Ability to utilise them is also required.

The supply of natural resources can be increased by research and technological progress. Technological progress helps in the discovery of new resources, e.g., oil resources in India and putting to economical use resources which have been lying useless hitherto. Also, the shortage of some natural resources can be made good by synthetic materials. For instance, in the advanced countries, synthetic rubber is being used more and more in place of natural rubber and nylon is being largely used for natural silk.

The use of natural resources and their contribution to economic development depends on the type of technology. The resource use has a close connection with the type and level of technology. To know this one need not go far in to history. For instance, petroleum which is considered so valuable today was not considered so important a short while ago. Now on account of scientific discoveries and technological development petroleum is regarded very useful. Besides, just now radioactive substances are considered very valuable. There is no doubt that there exist in the under-developed countries abundant mineral resources which are not being used owing to the lack of technological progress.

Capital Formation

According to classical economists, the main factor, which helped capital formation, was the accumulation of capital. Profits made by the business community constituted the major part of the savings of the community and what was saved was assumed to be invested. Adam Smith too emphasised the virtues of savings. He said: "Capitals are increased by parsimony and diminished by prodigality and misconduct." Keynes also ascribed the economic development of Europe to the accumulation of capital. He said: "Europe was so organised socially and economically as to secure the maximum accumulation of capital." Later, Schumpeter showed that increased investment made possible a rise in gross output in money terms.

Thus, the crux of the problem of economic development in an under-developed economy lies in a rapid expansion of the rate of its capital investment so that it attains a rate of growth of output which exceeds the rate of growth of population by a significant margin. Only with such a rate of capital investment will the living standards begin to improve in a developing country.

Need for Capital Formation. We have already discussed capital formation in a previous chapter and also the measures for promoting it to break the vicious circle of poverty.² Here we discuss it from the point of view of economic growth. Capital formation is the very core of economic development. It may be a predominantly private enterprise system like the American, or a communist economy

like the Soviet, economic development cannot take place without capital accumulation. No economic development is possible without the construction of irrigation works, the production of agricultural tools and implements, land reclamation, building of dams, bridges and factories with machines installed in them, roads, railways, and airports, ships and harbours—all the "produced means of further production" associated with high levels of productivity. It seems unquestionable that the insufficiency of capital accumulation is the most serious limiting factor in under-developed countries. In the view of many economists, capital occupies the central and strategic position in the process of economic development.

Capital formation indeed plays a decisive role in determining the level and growth of national income, hence economic development. This is due to the fact that of all factors of production capital has unlimited expansibility. It is man-made and is capable of increasing in quantity and improving in quality. There is no doubt that productive capacity of an economy can be increased only by increasing the quantity and improving the quality of its capital equipment.

Thus, in any programme of planned economic development capital formation must be assigned a significant role on account of a very close connection between economic growth and capital growth. It enables the adoption of more productive methods of production. Capital widening makes the economy diversified and broad-based. It exerts an interacting and cumulative effect on the whole economy. It facilitates technical progress. In all these and several other ways, capital formation promotes economic growth.

It could of course be argued that without the presence of other factors favourable to development, the supply or creation of capital alone would not be of much avail. Indeed, as pointed out above, it has often been argued that economic development is a matter of changing social attitudes and economic institutions rather than a simple process of increasing capital per head. Yet the history of economic development shows that widespread changes in attitudes, values and institutions came about in the very process of economic development and not prior to development.

Process of Capital Formation. The process of building up the necessary stock of capital equipment requires huge resources for financing it. Either a part of national income must be saved for the production of capital goods or the necessary funds for the purpose must be borrowed from abroad. The various methods of financing economic development, will be discussed in detail in a separate section. Here we may only emphasize that domestic saving is a sine qua non of capital formation. In fact, Professor Arthur Lewis has defined the process of

economic growth as one of transforming a country from a 5 per cent to a 15 per cent saver. But savings though necessary are not sufficient for the purpose of capital formation, which involves the following three independent activities:

(a) an increase in the volume of real savings so that resources that would have been used for consumption purposes may be released for the purpose of capital formation.

(b) a finance and credit mechanism, so that the available resources may be availed of by private investors or government for capital formation; and

(c) the act of investment itself, so that resources are used for the production of capital goods.

Although Schumpeter showed that investment can and does exceed voluntary savings through credit creation by the banking system, yet the requirements of capital accumulation cannot be simply met by monetary expansion. Without additional real savings, monetary expansion may merely generate inflation. The basic point is that the cost of development must be measured in real terms and not in monetary terms. The real costs are those of the resources that must be mobilized to carry out the development programme: the foreign and domestic services, materials, and equipment directly required for its execution; and the additional goods and services for which more demand will indirectly be created through development expenditures.

Can capital accumulation take place without technological progress? A community could just go on building more transport facilities, more sources of power, more factories of the existing type. This process of duplicating the existing technique is sometimes called "widening of capital," in contrast with "deepening of capital", which implies use of more capital-intensive techniques. In fact, capital accumulation and technological progress go hand in hand. Technological improvement is virtually impossible without prior capital accumulation. This is because the most efficient techniques require heavy investment for their introduction, even if they reduce capital costs per unit of output, once they are installed and are operating. Thus, no nation, that is not willing either to save and pay taxes or to borrow abroad, will enjoy the fruits of the advanced techniques.

Capital-output Ratio

Meaning. Apart from the ratio of capital formation to the aggregate national income, the growth of output depends upon the capital-output ratio. "The capital-output ratio may be defined as the relationship of investment in a given economy or industry for a given time period to the output of that economy or industry for a similar time period."³

The capital-output ratio thus determines the rate at which output grows as a result of a given volume of capital investment than a higher capital-output ratio. For example, a capital-output ratio of 3 : 1 would mean, in Indian rupees, that a capital investment of Rs. 3 results in the addition of output worth Re. 1. Hence, given the output, smaller capital investment would be needed if the capital-output ratio is lower than when it is higher.

Factors Determining Capital-output Ratio. It is difficult to estimate the capital-output ratio for an economy. The productivity of capital depends upon many factors such as the degree of technological development associated with capital investment, the efficiency of handling new types of equipment, the quality of managerial and organizational skill, the existence and the extent of the utilization of economic overheads and the pattern and rate of investment. For instance, the higher the proportion of investment devoted to the production of direct commodities, the lower the capital-output ratio; and higher the proportion of investment devoted to public utilities, *i.e.*, economic and social overheads, the higher shall be the capital-output ratio, and vice versa. Higher the investment devoted to heavy industry, the higher will be the capital-output ratio, and vice versa. Higher the rate of investment and greater the technological progress, the lower will be the capital-output ratio. The capital-output ratio also varies with the prices of inputs.

Why High in Under-developed Countries. It is agreed that capital-output ratio in under-developed countries is generally higher, *i.e.*, the capital is less productive in them than in developed countries. This is so because there is a relative inefficiency of the industries which produce capital goods. There is the greater wastage of capital in the process of production due to low level of technical knowledge and there is the scarcity of economic overheads. Besides, owing to indivisibilities, certain kinds of investment are bound to be initially under-utilized. As development proceeds, naturally the pattern of demand will shift towards the more capital-intensive industries.

Various estimates have been made of capital-output ratios in poor countries. A group of experts appointed by the United Nations used a ratio ranging from 2 : 1 to 5 : 1. The Second Five-Year Plan of India assumed an average capital-output ratio of 2.3 : 1. It was 2 : 1 in the First Five-Year Plan. Kurihara has assumed that in most under-developed countries the ratio is of the order of 5 : 1. Singer in his model of economic development assumed a ratio of 6 : 1 in the non-agricultural sector and 4 : 1 in the agricultural sector and Rosentstein-Rodan estimates that the ratio is at least 3 : 1.

Importance. Thus, the objective of capital accumulation, howsoever important, should not be overstressed. For to gain the most from capital forma-

3. Rosen, George—*Industrial Changes in India*, 1959, p. 37.

tion, a country must also undergo technological and organizational progress, so that the capital may be used more productively. The growth of the rate of output depends not only on the amount of capital accumulated but also on how much capital is required per unit increase in output (*i.e.*, capital-output ratio). A low capital-output ratio is, thus, as significant as capital accumulation. But it must also be pointed out that a low ratio requires technological and organizational progress, so that capital becomes more productive.

Thus, capital-output ratio plays a vital role in accelerating economic growth. The lower the capital-output ratio, more accelerated is the economic growth. The capital-output ratio can be reduced by means of technological progress and administrative improvements.

Limitations. It may, however, be pointed out that the concept of capital-output ratio suffers from certain limitations. Its precise calculation presents some formidable difficulties. Hence, the quantitative relationship between capital investment and output, which the capital-output ratio suggests, may prove to be misleading. It would, therefore, be hazardous to base the estimates of capital requirements of an industry or economy on such ratios. Neither can the capital stock be assessed with any exactitude; nor is the other side of the ratio, *i.e.*, output capable of any precise measurement. Besides the index number problems, a clear distinction cannot be often made between capital goods and non-capital goods. Returns to social overheads, in particular, cannot be calculated accurately. Further, capital-output ratio is influenced by several variables; *e.g.*, technological improvements, better utilisation of equipment, organisational improvements, labour efficiency, and such factors elude quantitative assessment.

Hence, the concept of capital-output ratio has only a limited practical significance, because it cannot indicate the actual contribution of capital alone in a given scheme of investment. Great caution is, therefore, necessary in making use of a particular capital-output ratio in the formulation of actual investment policy.

Technological Progress

Adam Smith, the father of political economy, pointed out the great importance of technological progress in economic development. Ricardo visualised the development of capitalist economies as a race between technological progress and growth of population. The great importance of technological progress in capitalist development was recognised by Karl Marx too.

There is no doubt that technological progress is a very important factor in determining the rate of economic growth. In fact, even capital accumulation is not possible without technical progress. A country

may be adding to its means of transportation and communications, its power resources and its factories. According to modern technique, it is called **widening of capital**. The use of improved techniques in production and technological progress bring about a significant increase in per capita income. Technological progress has something to do with the research into the use of new and better methods of production or the improvement of the old methods. Sometimes technical progress results in the availability of natural resources. But generally technological progress results in increase in productivity, *e.g.*, green revolution. In other words, technological progress increases the ability to make a more effective and fruitful use of natural and other resources for increasing production. By the use of improved technology it is possible to have greater output from the use of given resources or a given output can be obtained by the use of a smaller quantity of resources.

It is a matter of common knowledge that technological progress adds greatly to our ability to make a fuller use of the natural resources, *e.g.*, generation of hydro-electricity. With the aid of power-driven farm equipment a marked increase has been brought about in agricultural yields per acre and per worker. Technical progress also increases the ability to make a more effective use of capital equipment. Technological progress has very close connection with capital formation. In fact, both go hand in hand. Without capital formation technical progress is out of the question because heavy investment is required for making use of better and more efficient methods of production, although after they are well established, capital cost per unit of output may fall.

Thus, technological progress has a very important role to play in the economic development of a country. No backward country can hope to march ahead on the road of economic development without adopting newer and newer techniques of production and unless it is assisted in its march by technological progress. We have already brought out the importance of capital accumulation in economic growth. But capital accumulation promotes economic growth because it facilitates technological improvements, which raise labour productivity and thus add to the national and per capita income.

Dynamic Entrepreneurship

According to the classical economists, an entrepreneur or an organiser acts merely as an agency for bringing together the various agents of production and undertaking to remunerate them for the work done. But the modern economists recognise the dynamic role that an entrepreneur plays in promoting the economic growth of the country. This was specially underlined by Schumpeter who thought that the entrepreneur played a key role in economic development. Even Karl Marx had emphasised the

fact that in trying to widen the profit margin by adopting new technology and improved methods of production, the entrepreneur in fact makes an important contribution to economic growth.

The entrepreneur earns profit by ensuring that the value of the final product exceeds the sum of the remuneration of the factors of production, *i.e.*, the value of the means of production: This surplus constitutes his profit. It is the entrepreneur's main aim to enlarge this surplus or profit. Obviously, the greater the surplus, the greater is the entrepreneurial activity and greater the entrepreneurial activity, the faster is the rate at which the economy grows. The entrepreneur tries to maximise his profit by making innovations, *i.e.*, by bringing out a new product, tapping a new market, tapping new sources of raw materials and by adopting an optimum or most economical combination of the factors of production. In all these ways, while he succeeds in making higher profits for himself, he is making a significant contribution to an increase in the national income. We can imagine that cumulative effect of the individual activities of the daring and dynamic entrepreneurs is to accelerate the process of economic growth.

Population Growth

The size and the rate of population growth has an important bearing on the economic development of a country. If the population is too small, it does not afford full scope for specialisation or division of labour nor a sufficient market for the goods produced in the country. If, on the other hand, population is too large, then also it is a great impediment to economic growth. It is a serious hindrance to capital formation. The feeding of a huge population leaves little scope for saving, and saving is very essential for economic growth, because capital formation is the very crux of the process of economic growth. Hence population should be of a proper or optimum size.

Apart from the proper size of the population, it is also essential that the rate of population growth should not be too rapid, otherwise it will swallow up whatever little economic progress may have been made and the country may only mark time. In such a situation, efforts at development will be simply a writing on the sand.

Thus, a rapidly growing population aggravates the food problem, worsens the unemployment situation, adds to the number of unproductive consumers, keeps down per capita income and labour efficiency and militates against capital formation. In all these and many other ways, a rapid rate of population growth acts like a drag on economic development and slows down the pace of economic growth.

In view of the great importance of the population factor in determining the rate of economic growth,

we discuss it at some length at the end of this chapter.

Social Overheads

Another important determinant of economic growth is the provision of social overheads like schools, colleges, technical institutions, medical colleges, hospitals and public health facilities. Such facilities make the working population healthy, efficient and responsible. Such people can well take their country economically forward.

Non-economic or Institutional Factors

Thus far we have dwelt on the economic factors. But perhaps equally powerful are the various non-economic forces like the social and political factors. In Kaldor's words, "A study of the dynamics of economic growth leads beyond the analysis of economic factors to a study of the psychological and sociological determinants of these factors."⁴ Karl Marx also emphasised the inter-relationship between institutional factors and economic change. Let us first take the **political factors**, which include political sovereignty of the country, the complexion of its government—whether it is development-conscious or is completely laissez-faire in its outlook or is dominated by vested interests who would oppose bitterly any departure from the status quo, the quality of administration, and the political ideology of the government, particularly in relation to the problems of development. Compare in this connection the faith of the Indian Government in democratic planning with the authoritarian planning pursued in China.

Social and Cultural Factors are no less important and are very extensive in scope. In a work like this, we can at best just mention a few of them. Each society has certain social institutions which have a strong bearing on economic development. In India, for example, the institutions of caste, joint families, non-materialistic attitude of the people, and their fatalism based on the philosophy of **Karma** have been some of the serious impediments to economic development. Any attempt at accelerating development must aim at changing these age-long institutions and a fundamental change in the outlook and attitudes of the people must be brought about. Similarly, the prevalence of custom as against contract and the religious taboo among large sections of the population against usury are still other examples of social factors that inhibit the growth of the economy. Likewise, the rampant illiteracy among the people in under-developed countries and their apathy towards the multiplication of their numbers, are the other social factors which hinder economic development.

4. Kaldor, N.—*An Expenditure Tax*, 1955, p. 180.

Naturally, the various relevant social and cultural factors will have to be suitably adapted before the tempo of economic development can be expected to quicken. "Planned development in the economically backward countries, mostly sponsored and engineered by Governments, has meant the superimposition of an advanced form of economic structure on a social foundation which is ill-fitted to bear the burden."⁵ Naturally, the economic growth is slow.

Conclusion

The factors that go into the process of economic growth are numerous, since this process involves the transformation of the entire economy. All facets of the economy have to be affected. We have mentioned a few of the important factors and in conclusion we may again sum up the basic determinants of economic growth which are: The natural resources like the mineral, forest, water and power resources, geographical factors like climate and rainfall, the size, composition and the quality, i.e., the efficiency of population in the matter of education, skill, health, sense of discipline and patriotism, spirit of co-operation, ability and willingness to work and above all their character, entrepreneurial and organising ability, social and institutional factors conducive to economic effort, stable and helpful government keen on economic development and welfare of the people, clean and efficient administration, favourable external factors facilitating foreign aid and stimulating foreign contacts, and so on.

HARROD-DOMAR GROWTH MODELS

The classical economists laid stress on savings and accumulation of capital and the role of investment and technology in economic growth. They thus concentrated on the supply side of the problem of economic growth. The demand for capital was taken for granted. But this is true of the mature economies in which investment, i.e., the demand for capital tends to lose its momentum. The problem of demand for capital or investment received Keynes' attention. In his 'General Theory,' Keynes analysed the aggregate problems like the levels of output, income and employment, savings, investment, etc. But Keynes' was a short-run analysis and excepting his emphasis on savings and role of expectations, it was mainly static, whereas analysis of economic growth has to be dynamic since it involves changes of some fundamental variables in the economy. But Keynesian analysis opened the way for dynamic analysis, i.e., analysis of the problems of growth. The tools of economic analysis forged by him, viz., multiplier and the accelerator (introduced by J.M. Clark) have been used by modern economists in

growth analysis. They have used his analysis of saving as a demand reducing factor and investment as demand generating factor to examine the role of these factors in economic growth.

Thus, Keynesian analysis and concepts have furnished the basis for modern models of economic growth. The foundations of modern growth analysis lie in the ideas and concepts contained in Keynes' book, 'General Theory of Employment, Interest and Money'.

How Keynesian Economics has been used in the analysis of economic growth will be clear from the growth models given by Harrod, Domar and others. Harrod⁶ and Domar⁷ analysed the dynamic nature of investment and demand and showed how variations in capital and in demand were responsible for instability in economic growth.

We have studied above the main determinants of economic growth, viz., natural resources, rate of savings and capital formation, technological progress, population growth, etc. These determinants of economic growth influence the rate of growth by influencing two important factors: (a) The Rate of Investment and (b) Capital-output Ratio. Hence, the rate of economic growth in a country, i.e., growth of G.N.P. depends on the rate of investment and capital-output ratio.

We give below Harrod-Domar growth equations:—⁸

If G_y is taken to represent proportionate increase in income, I is investment and $\frac{\Delta Y}{\Delta K}$ extra capital stock and the resultant output, i.e., capital-output ratio, then the following equation will give the growth rate:

$$G_y = \frac{I}{Y} \times \frac{\Delta Y}{\Delta K} \dots \dots \dots (1)$$

In a balanced growth economy, saving (S) is equal to I (investment), we can, therefore, write $\frac{I}{Y}$ as $\frac{S}{Y}$ and $\frac{S}{Y}$ is written merely as 's' representing savings ratio—the fraction of income saved. Then equation (1) can be written as

$$G_y = s \times \frac{\Delta Y}{\Delta K} \dots \dots \dots (2)$$

While discussing the determinants of economic growth, we mentioned the important role of the concept of capital-output ratio. If each unit of a given capital stock yields larger output, the rate of economic growth will be higher. For instance, if a machine worth Rs. 5,000, produces output worth Rs.

6. Harrod, R.F.—*Towards Dynamic Economics*.

7. Domar, E.D., *Essays in the Theory of Economic Growth*.

8. Stonier and Hauge. *A Textbook of Economic Theory*, 1971, pp. 593-599.

5. Bright Singh, D.—*Economic Development*, p. 100.

1,000, the capital-output ratio is $\frac{\text{Rs. 5,000}}{\text{Rs. 1,000}}$, i.e., 5 and if capital worth Rs. 10,000 produces goods worth

Rs. 2,500, the capital-output ratio is $\frac{\text{Rs. 10,000}}{\text{Rs. 2,500}}$ or

4, and so on. Thus capital-output ratio is simply the inverse of the annual return on (productivity of) capital. If the capital-output ratio is 5, the return is 20 per cent and if it is 4 the return is 25 per cent. The capital-output ratio is represented by the symbol v . 'v' represents the actual marginal capital-output ratio. That is, it shows the extra amount of capital invested divided by the extra output, obtained.

Hence, $\frac{\Delta Y}{\Delta K}$ in equation (1) above is the inverse of the marginal capital-output ratio. It shows the marginal increment of output (income) produced by a marginal increment of nation's capital stock.

Hence, $\frac{\Delta y}{\Delta k}$ in equation (1) can be written as $\frac{1}{v}$ and equation (2) can be written as

$$G_y = s \times \frac{1}{v} \quad \text{or}$$

$$G_y = \frac{s}{v} \quad \dots \quad \dots \quad \dots \quad (3)$$

This equation (3) means that increase in output during any period is equal to extra units of capital invested multiplied by the output obtained from each unit of capital invested.

Warranted Growth Rate. Equation (3) only tells us what has happened (i.e., output actually obtained from a certain amount of capital invested). But it does not say whether this growth is satisfactory or not from the point of view of a steady growth of the economy or from the point of view of the entrepreneur. The fundamental equation for growth rate which the entrepreneurs would find just satisfactory from the point of profitability can be put down in the following form:—

$$G_w = \frac{s}{v_r} \quad \dots \quad \dots \quad \dots \quad (4)$$

Prof. Harrod has called G_w as the warranted rate of growth. The entrepreneurs would regard this rate of growth as just satisfactory and would like it to be repeated. That is why 'r' is written on the right side of the equation at the foot of 'v'. This is the overall rate of growth and not the rate of growth relating to certain sectors of the economy which may be rising in some and declining in others.

We may repeat that equation (3) shows what has actually happened, i.e., the growth rate actually realised but not the rate which the entrepreneurs as a whole would consider just satisfactory and worthwhile repeating. This latter rate is shown in equation (4). It is the warranted rate of growth (G_w) which is considered just satisfactory and the entrep-

reneurs would like it to be repeated. The growth rate shown in equation (3) depends on circumstances varying with economic fluctuations—booms and slumps. But the growth rate of equation (4) is deliberate and is based on technological progress. This shows the rate of increase in output arising from the extra amount of capital invested on the basis of existing state of technical knowledge and the existing production techniques. This increase in output is regarded as optimally profitable. Thus, V_r is determined by capital-output ratio which is governed by the currently accepted production techniques and the acceptable rate of profit.

Hence, at the warranted rate of growth (G_w), the growth of the economy as a whole would be regarded as satisfactory. It may be regarded as an equilibrium rate of growth in the sense that it would perpetuate itself.

Natural Growth Rate. It is not necessary that the warranted growth rate should be in keeping with the available natural and human resources. That rate would be called 'the natural rate of growth.' We may show it by G_n . It is the rate of growth which can be achieved by the optimum utilisation of all the resources of the economy. The rate of population growth and the rate of technical progress are the two most important factors that determine the natural rate of growth. It is assumed that there is no unemployed labour that can be drawn upon and there is no further scope of technical improvement so that the number of workers is fixed and their efficiency (i.e., productivity per worker) has reached the peak as a once-for-all process.

If 'l' represents population growth and 't' technical progress, the natural growth rate (G_n) will be shown by the following equation:—

$$G_n = l + t \quad \dots \quad \dots \quad \dots \quad (5)$$

Harrod-Domar Model. The fundamental equation (3) given above, i.e., $G_y = \frac{s}{v}$ has been called the "Harrod-Domar Equation." In view of its basic character and of being widely known and accepted model of growth, we explain it by a numerical illustration to make it easily understandable as under:—

$$G_y = \frac{s}{v} = s \times \frac{1}{v}$$

['s' is investment and 'v' is the capital-output ratio.]

∴ Growth Rate = Investment

$$\times \frac{1}{\text{Capital-output ratio}}$$

Suppose investment rate is 10 per cent of the national income and capital-output ratio is 4, then

$$\text{Growth rate} = \frac{10}{4} = 2.5.$$

This hypothetical country has achieved a growth rate of 2.5 per cent in its national income or output.

Harrod and Domar Compared. Profs. Harrod and Domar, though working independently, reached similar conclusions and constructed similar growth equations but they were not exactly the same. Domar's equation aimed at showing that growth in the output which would fully utilise the additional productive capacity created by a given amount of capital accumulation. He arrived at the conclusion that investment must rise quickly and sufficiently to absorb all the savings arising out of the rising incomes in a growing economy. He represented this by the equation:

$$\frac{\Delta I}{I} = sa \quad \dots \quad \dots \quad \dots \quad (6)$$

Here I is investment, ΔI is increase in investment, s is the proportion of income saved and a is the capital-output ratio.

This equation, therefore, means that the investment growth rate $\left(\frac{\Delta I}{I}\right)$ must be equal to the proportion of income saved (s) multiplied by the capital-output ratio (a) assuming full employment.

If you compare equation (3) and equation (6), you will find that the result given by the right-hand sides of the two equations is the same. Domar multiplies s by the capital-output ratio and Harrod divides s by the capital-output ratio. The difference is due to the fact that Domar is concerned with finding the rate of investment (growth of the rate of income with constant capital-output ratio) which would provide full employment. On the other hand, Harrod concerned himself with three types of growth rates. His equation (4) dealing with warranted growth rate

$\left(G_w = \frac{s}{v_r}\right)$ approximates to Domar's equation. But

there is no guarantee that warranted growth would ensure full employment. That is why Harrod brings in the natural growth rate (G_n), to hit on the growth rate which would provide full employment. Again, full employment of labour does not necessarily mean the full employment of capital assets. Domar's equation provides for full employment simultaneously of both labour and capital/assets. Harrod gives a series of equations to a complete growth theory whereas Domar does it by one equation.

RELATION BETWEEN POPULATION GROWTH AND ECONOMIC GROWTH

For effecting a significant improvement in living standards, the rate of capital formation and the consequent rate of growth of output must be viewed in relation to the rate of population growth. It may be that the population may be increasing so fast as to offset even a quick rate of capital formation and the resultant increase in output. It is, therefore,

necessary to ensure that the rates of population growth and of capital formation must be such as to yield a high per capita output.

Conflicting opinions have been expressed by economists as to whether population growth is a stimulant to economic growth or an obstacle in the way. Owing to inadequate response to agricultural production to meet the requirements of a growing population, Malthus and Ricardo dreaded a rapid increase in population and thought it would spell misery and starvation. But with the remarkable growth of industry, world trade and revolution in agricultural techniques the bogey of over-population was laid at rest and the western economists veered round to the view that growth of population stimulated economic growth.

Prof. Hansen regards a high rate of population growth as one of the conditions for economic expansion. Prof. Arthur Lewis shows how a capitalist economy expands by drawing on cheap labour from the subsistence sector of the economy. Prof. Colin Clark feels that the neo-Malthusian fear is very much exaggerated. Prof. Hirschman holds the view that the pressure of population will be a stimulant to economic growth. At the World Population Conference at Rome in 1954, Prof. Alfred Bonne expressed the view that the bogey of over-population should not be exaggerated. At the same Conference, the Russian economist Ryabushkin stressed the need for considering the dynamics of population along with the dynamics of production or the possibilities of increasing production when population grows.

Let us see how population growth can stimulate economic growth. Population growth means an increase in the supply of labour. Now the economic significance of labour lies in the fact that labour is both a producer and a consumer. The contribution of population to economic growth is determined by its impact on consumption and production. Increase in population increases consumption and strengthens the inducements to invest which results in increase in output. The increase in the supply of labour, of course, directly increases production when all workers can be put on productive employment. Thus increase in population means an increase in demand for goods or expansion in the size of the market which promotes economic development. When the market for goods is enlarged, scale of production is increased with the resultant economies of large-scale production. The economic history of America and Europe and of other developed countries shows that an increase in their population accelerated their economic growth.

But what is true of the developed countries cannot be true of the under-developed countries. The

9. For these references see Bright Singh, D. - *Economic Development*, pp. 115-117

economists who say that growth of population helps in economic growth do not seem to understand the realities of the situation prevailing in the under-developed countries. The extent to which population growth stimulates economic growth does not depend much on the increase of number but also on its organisation, the availability of complementary resources, the techniques of production, and so on. So long as size of the population is small in relation to land and capital resources, growth in its size will undoubtedly promote economic development. But if a country is overpopulated and there is deficiency of capital, growth of population will be inimical to economic growth.

Hence, whether growth in population is beneficial to economic growth or not depends on the present size of the population and the availability of natural and capital resources and existing technology. In America and Europe, where the supply of capital and other resources is relatively abundant and where technology is in an advanced state, the increase in population increases output. But in under-developed countries like India, where population is already excessive and, on the top of it, it increases at an explosive rate, and where natural resources and capital equipment in relation to population are scarce, the growth of population instead of helping economic growth hinders it.

Thus, population growth can be beneficial to economic growth and it can bring about an increase in national income only if along with increase in population the supply of capital and other resources also increases. But, as pointed out already, if natural and other resources are in short supply in relation to the existing population, growth of population will increase unemployment instead of increasing the national output.

As we have already said, economic development requires an increase in the supply of capital equipment. The supply of capital goods can be increased by raising the level of investment. But the rate of investment can be increased only if the rate of savings is increased. Now increase in population increases the number of consumers and hence the level of consumption which in turn reduces the capacity to save and the rate of investment. Thus, in the under-developed countries, increase in population reduces the rates of saving and investment on account of which economic growth is impeded. Hence, in a situation like that of India, growth of population is an impediment to economic growth.

Whereas, on the one hand, rapid growth of population in the under-developed countries reduces the rate of investment, it increases the necessity for increasing investment, on the other. In a situation of rapidly growing population, a higher rate of investment is required to bring about a significant increase in per capita output. Suppose the country *A*'s population is increasing at the rate

of 1 per cent per annum and country *B*'s at the rate of 3 per cent per annum. If the capital-output ratio is 3:1, the country *A* will have to invest 3 per cent of its national income to maintain its per capita income at the existing level, whereas the country *B* will have to invest 9 per cent of its national income to keep its per capita income at the existing level. Hence, if population is increasing at a rapid rate, relatively greater effort and higher investment will be required to achieve a given rate of economic growth.

Population growth prevents the per capita income from rising substantially. The under-developed countries have to make a supreme effort to increase their national income so that the per capita income of the people may rise and their standard of living may be raised. But the rapid increase in their population nullifies all their efforts in this direction. Owing to greater increase in population along with increase in national income, the per capita income does not rise significantly. Asoka Mehta has very aptly remarked that population growth is like a thief who robs us of the benefit of economic development. Hence, increase in population swallows up the major part of increase in national income on account of which there can be no significant rise in the per capita income and in the level of living. This is what has happened in India in the era of planned economic development.

In India, national income increased by 18 per cent in the First Plan and 20 per cent in the Second Plan, whereas increase in the per capita income respectively was only 8 per cent and 9 per cent nearly. Similarly, whereas in the Third Plan, national income increased by 13.5 per cent, the per capita income increased by only 1 per cent. This highlights the adverse effect of a rapid population growth which is responsible for a far lower increase in the per capita income as compared with the increase in the national income.

Thus, it is clear that a rapid increase in population is a great obstacle in the economic growth of under-developed but over-populated countries. It can be beneficial to economic growth only if there are present some pre-conditions which are altogether lacking in the under-developed countries, e.g., if social attitudes and values of the people are conducive to economic progress. They should have the will and preparedness to face and surmount economic difficulties and turn seeming obstacles into opportunities for economic advance.

Critical Minimum Effort Thesis

The economic, political and social conditions in under-developed countries are such as to make their growing population inimical to economic growth. Most of the economists are of the view that many under-developed countries, especially of the South East Asian countries, are over-populated and the population pressure is a great barrier in the way of

their economic development and unless this barrier is broken all efforts at accelerating economic growth will prove futile.

However, a way out of this population barrier has been suggested in the form of a 'critical minimum effort.' The 'Critical Minimum Effort' thesis has been put forward by Prof. Harvey Leibenstein.¹⁰ According to him, the under-developed over-populated countries are in a Malthusian Under-employment Equilibrium position based on a subsistence structure. He quotes Dupont's capillarity thesis according to which when a community realises that there are greater chances to rise socially with a fewer children than with a larger family, there is a change in social attitudes and strong motivation for restricting the family as per capita income rises.

Leibenstein bases his thesis on the assumption that population is an increasing function of income up to a certain level of income, but beyond that point it is a decreasing function of income. In a low income group, the cost of rearing children is low but their utility in the form of early employment is high. Hence, population has a tendency to increase rapidly. But to a high income group, whose social attitudes are assumed to have changed, the significance of children as contributors to family income is reduced, but the cost of bringing them is high. Hence, there is a strong motive to restrict the size of the family.

Thus, it follows that, if a country is to break the population barrier and to come out of the under-employment equilibrium trap, the per capita income must be raised sufficiently high. For this purpose, a certain minimum amount of investment has to be made which has been called the 'critical minimum effort.'

The initial increase in the per capita income, necessary to displace the under-employment equilibrium, can be secured by (a) procuring foreign capital in a sufficiently large amount, (b) technological innovations and improvements and (c) emigration. The initial rise in the per capita income will set in motion forces which will ultimately take the income level to a sufficiently high level so as to act as a brake on population growth. The point to be emphasised is that per capita income must rise sufficiently high if it is to be effective in bringing down the rate of population growth so that further increase in per capita income and investment becomes easier. We may then say that the economy has reached the self-sustained stage.

How long will it take to reach this stage? No dogmatic or straight answer can be given to this question. It will all depend on (a) the magnitude of the initial increase in the per capita income; (b) the

capital-labour ratio; (c) the rate of population growth; and (d) how rapidly the social attitudes change. Thus, if incomes rise more rapidly and population rises slowly, it will take less time to reach the point of time beyond which further growth of income and investment becomes easier. Hence, in over-populated and under-developed economies, economic development can be secured if a sufficiently large investment is made in the income generating projects. When a sufficiently high level of incomes is reached, the rate of population growth will slow down and the rate of economic growth will be accelerated. Since there is a biologically determined maximum population growth rate, it is possible to have sufficiently high level of investment to break the population barrier.

Leibenstein conceives of a critical minimum effort in terms of this initial investment and the resultant increase in income. Any effort below this minimum will be futile. The investment will be a waste from the point of view of growth. Growing population will simply eat up whatever has been achieved so that the country either stands still or goes backward instead of marching forward. That is why Leibenstein argues that the backward economies remain backward because the "efforts to escape backwardness, be they spontaneous or forced, are below the critical minimum required for persistent growth."¹¹

Limitations. 'The critical minimum effort thesis' seems to be plausible but suffers from serious limitations from the point of view of its practical significance:

(i) Dependence on foreign capital is precarious; emigration may be ruled out in view of stringent immigration laws of the countries where it would be worthwhile migrating to; and technological innovations cannot be made to order. In the absence of these, the initial rise in income can be secured by lowering consumption and thus increasing the rate of savings and investment. The sacrifice will be much greater, probably beyond the capacity of the country to bear, because the investment required out of current domestic resources will be much larger.

(ii) The under-developed countries lack reliable statistics on the basis of which it is possible to know the exact population, its rate of growth, the size of the capital stock, the level of income, the rates of saving and investment and the extent to which investment should increase to produce a much higher increase in income, and so on. Accurate knowledge of production functions of the various factors of production is required. It is rather too much for an under-developed country to have this information.

(iii) The level of investment which can have

10. Leibenstein, Harvey—*A Theory of Economic Demographic Development*, 1954, and *Economic Backwardness and Economic Growth*, 1957, pp. 164-167.

11. Leibenstein, Harvey—*Economic Backwardness and Economic Growth*, 1960, pp. 45.

perceptible influence on population growth and produce the required increase in income is beyond the capacity of most of the under-developed countries. For instance, if we assume a population growth of 1.7 per cent per year and per capita income at \$65 (which were the average rates in the ECAFE region excluding Japan in 1956) and capital-output ratio of 3:1, the investment required to increase per capita income by 3 per cent a year would be 14.1 per cent of national income.¹² But it would take 24 years for the per capita income to double at 3 per cent increase per year. To double income in a shorter period, say 10 years, it would require an investment of 26.1 per cent of the national income (under the same assumptions). This is obviously beyond the capacity of the under-developed countries. This would mean cutting of consumption to an extent as would adversely affect labour productivity.

(iv) The 'critical minimum effort' thesis assumes that a sufficiently high increase in per capita income will reduce the rate of population growth. This implies that there is a direct relation between increase in income and downward trend in population growth. It also assumes that if increase in income is only moderate, the rate of population growth will increase. Actually, however, the population problem in the backward countries is too complex a problem to lend itself to such simple mathematical formulae. It is a social problem and as such it is profoundly influenced by customs, religious beliefs, social attitudes, cultural patterns, etc., and not merely by changes in income. Hence, it is necessary to attack the problem on the social front and not merely on the economic front to break the population barrier.

Conclusion. In spite of these limitations, it has to be conceded that there is a great deal of substance in the 'critical minimum effort' thesis. The population barrier can be broken by making an efficient and optimum use of labour so as to increase its productivity. If there is lack of complementary factors, say capital, they must be imported. The capital-output ratio should be lowered by devising capital-saving technological improvements, by making more economical use of the existing capital resources, avoiding all waste in the use of plants and equipment. It would be possible to increase the level of incomes by such measures without any back-breaking investment. The resources made available by enlarged incomes should be carefully mobilised and efficiently utilised by appropriate fiscal, monetary and trade policies so that further rise in incomes can be secured without much difficulty.

RELEVANCE OF HARROD-DOMAR MODEL FOR DEVELOPING COUNTRIES

Harrod-Domar models were formulated primarily to protect the developed countries from chronic unemployment and they were not meant to provide guidelines to the developing economies in their economic development. Since they were formulated primarily for the developed countries they were based on high propensity to save and a correct estimate of the capital-output ratio, which should remain fixed over time. On the other hand, the main problem of the under-developed countries is to raise their propensity to save because it is generally low there. Nor is it possible to assume a fixed value of the capital-output ratio. This ratio happens to be very high in such countries. Thus the two important bases of the Harrod-Domar models are non-existent in the case of developing economies. Further, the nature of unemployment problem in developing countries is different from that in the developed countries. It is cyclical unemployment due to deficiency of demand in the developed economies and it is disguised unemployment in the developing economies. In developed economies, unemployment can be removed by raising the level of investment so that aggregate demand increases which was not keeping pace with the growth of productive capacity. In the developing economies, there is unemployment because available productive capacity is inadequate to employ fully the existing labour force. Thus in such countries, the rate of investment is to raise productive capacity rather than aggregate demand and fully utilise the existing idle capacity.

Thus we see that the peculiar conditions prevalent in the developing countries e.g., disguised unemployment, low propensity to save and low productive capacity make the Harrod-Domar model inapplicable to them. Also, these models assume no government intervention, fixed prices and no institutional changes. All these assumptions too make these models inappropriate for the developing economies.

But we should not reject these models wholesale and emphasise their inapplicability to developing economies. With slight modifications and re-interpretation they can be made to furnish suitable guide-lines even for the developing economies. In some cases, it is only a question of changing the emphasis. For instance, Domar's model recognizes the capacity creating role of investment. But it is intended to increase effective demand in developed countries, while in developing countries, the capacity creating role of investment is to be seen as a means of overcoming the problem of unemployment. Hence to make the model applicable to the developing countries Domar's model has to be suitably reinterpreted.

12. U.N.—*Economic Bulletin for Asia and Far East*, June 1959, p. 39

STRATEGY OF ECONOMIC DEVELOPMENT : BALANCED AND UNBALANCED GROWTH

Just as a war cannot be won without a suitable strategy, similarly the objective of rapid economic development cannot be achieved without adopting an appropriate strategy. It implies the most effective way of utilising the available resources of the country. Strategy, however, does not mean a set of magic-rules which will at once take us to the goal of economic development. It is only comprised of the major decisions that go into the making of a development plan. Thus, the major elements in the plan strategy are the size of the plan, the pattern of investment envisaged in the plan, the allocation of investment among the various sectors of the economy, the techniques of resource mobilisation, the policy mix, *etc.*, appropriate fiscal policy, monetary policy, policy regarding controls, extent of reliance on foreign aid, *etc.*

Types of Strategies

The strategies known to the planners commonly are:

- (1) Balanced vs. Unbalanced Growth.
- (2) Big Push Strategy.
- (3) Balanced, Unbalanced, Big Push (B.U.B.) Strategy.

We reserve balanced vs. unbalanced growth strategy for detailed discussion.

Big Push Strategy

The 'Big Push' strategy is associated with the name of Rosenstein-Rodan and Harvey Leibenstein. It is contended that a big push is needed to overcome the initial inertia of a stagnant economy. Rosenstein-Rodan observes: "There is a minimum level of resources that must be devoted to a development programme if it is to have any chance of success. Launching a country into self-sustaining growth is like getting an airplane off the ground.

There is a critical ground speed which must be passed before the craft can become airborne."¹ According to Leibenstein, it is not advisable for an economy to inch along the path of development, the economy must cover a certain distance in one leap or it does not move at all.

Balanced, Unbalanced, Big Push

The advocates of this strategy suggest that no single strategy will take us to the goal of economic development. Not only has the strategy to be changed from time to time as the situation may require, but it may be necessary sometimes to strike a balance between the alternative strategies.

In the initial stages characterised by imbalance, counter-imbalances will be a more effective remedy. But once an appropriate balance is attained by a fair dose of big push, the strategy of balanced growth may be applied to further planning.

The strategy adopted in Indian planning may be described as balanced B.U.B., *i.e.*, a happy compromise of Balanced, Unbalanced and Big Push strategies. More prominent, however, is the strategy of balanced growth. This is indicated by varying emphasis on a single aspect in successive plans, *e.g.*, self-sufficiency in food in the First Plan, rapid industrialisation in the Second Plan, self-sustaining growth in the Third Plan and growth with stability in the Fourth Plan.

Let us now turn to the study of Balanced vs. Unbalanced Growth.

BALANCED vs. UNBALANCED GROWTH

Currently, there are among the development specialists two major schools of thought regarding the pattern and process of growth according to which development should take place. On the one

1. Notes on *Theory of Big Push*, 1957, p. 47.

side, there are economists, like Ragnar Nurkse and Rosentsein-Rodan who are of the view that the pattern of investment should be so designed as to ensure a balanced development of the various sectors of the economy. They, therefore, advocate simultaneous investment in a number of industries so that there is a balanced growth of different industries. Economists, like H.W. Singer and A.O. Hirschman, on the other side, believe that rapid economic growth follows concentration of investment in certain strategic industries rather than an even distribution of investment among the various industries. In other words, in the view of these latter economists, unbalanced growth is more conducive to economic development than a balanced one. We may now pause to consider both these views at some length.

In an earlier chapter,² we explained how the under-developed countries are caught up in a vicious circle of poverty. We also pointed out how difficult it is to break this vicious circle. We explained how the vicious circle of poverty operates both on the demand side of capital formation as well as on the supply side of capital formation. Nurkse has put forward the doctrine of balanced growth (which we shall discuss presently) in order to break the vicious circle of poverty on the demand side of capital formation. It will be useful to have again a cursory look on the vicious circle.

In an underdeveloped country, the level of per capita income is low which means that the people's purchasing power is low. Owing to small incomes and low purchasing power their demand for consumer goods is low. As a result of low demand for goods, the inducement for investment is less and capital equipment per capita (*i.e.*, per worker) is small. Since the amount of capital per capita is small productivity per worker is low. Low per capita productivity means low per capita income, *i.e.*, poverty. This completes the vicious circle of poverty. In a poor country, the size of the market for goods is small so that sufficient opportunities for profitable investment in trade and industry are lacking. This is the main reason for lack of inducement to invest which we discuss presently.

Size of Market and Inducement to Invest

Investment means the expenditure on the making and installation of capital goods, *e.g.*, construction of factories and the making of machines and their installation, execution of irrigation and power projects, the construction of roads, railway, *etc.* Obviously, an entrepreneur will be induced to invest in factories, machinery, *etc.*, if he expects sufficient return on his investment. Businessmen will have incentive to invest only from a motive of earning a profit. It is the expectation of profit which is a

fundamental factor influencing the amount of investment in a country at a given time. In a poor country, the low level of investment is due to low expectations of profit because of less demand for goods or a small size of the market.

Let us understand clearly why there is less inducement to invest in a poor country. It is easily understandable that, in under-developed countries, there is a great need for capital for economic development. People are too poor even to have two square meals a day or a reasonable housing accommodation or clothing to cover their bodies. Hence, there is an urgent need for large-scale production of consumers' goods, but it cannot be done without the production and use of capital goods in large quantities. Agricultural improvements, the establishment and expansion of industries, the optimum use of the natural resources and harnessing the natural resources into the service of the people, all require capital. The need for capital can be great but the inducement to invest can be weak. The level of investment depends not on the need for capital but on the inducement to invest in the form of attraction to earn profit from the capital invested. Without reasonable expectations of profit, much capital will not flow into investment.

The quantity of profitable investment in a country depends on the size of the market. Adam Smith said, "Division of labour is limited by the size of the market." We can say in the same manner that inducement to invest depends on the size of the market. Inducement to invest, in the last analysis, depends on the size of the demand or market. The small size of the market or the low level of demand for the products concerned discourages the entrepreneurs from investing.

This will be clear from an illustration. In a modern dairy, milking, filling up bottles and their loading all these operations are done with the aid of automatic machinery. Will the installation of such a machinery in every Indian town be profitable for individual entrepreneurs? Obviously, it will not be profitable. Per capita income being low in India, the demand for milk in each town will be too small to make a full use of such automatic machinery. Such costly plant and machinery will remain mostly idle and there will be work for such a machinery only for a few hours during a week. This means a great waste of valuable capital asset. Which entrepreneur dare start such a business? As an inducement to invest, the entrepreneurs should be sure that the capital equipment will be profitably employed. This will be possible only if the machinery can be kept in continuous use, and this cannot be done unless there is sufficient demand for the products made by this machinery.

Take another example. Suppose the hand-made cloth is very attractive and it can fetch a very high price. But it will not be economical to instal a

2. Chapter 72.

big machine to make a cloth of a special design, because owing to its high price and low incomes of the people, there will not be sufficient demand for this type of cloth i.e., the market will be too small. In America, the cars are cheap but they are very expensive in India. What is the reason? The sole reason is that the demand for cars in India as compared with that in America is so small that the manufacturers of cars cannot be induced to make them in large quantities which would have made them cheap on account of the economies of scale. Examples can be multiplied. The conclusion is clear that inducement to invest depends on the size of the market or the purchasing power of the people.

It may be clearly understood that in the under-developed countries, demand for consumer goods cannot be increased merely by the expansion of the money supply in the country. The real demand will increase only if there is increase in the productivity per worker and as a result thereof there is increase in the real per capita income. By mere expansion of money supply and thus putting more money into people's pockets demand can increase only in the form of money which will result in inflation or higher prices, but not increase in the real aggregate demand.

Similarly, the demand for goods or the size of the market cannot be large merely because a country is big or its population is large. If the purchasing power of the people is low because of their extreme poverty, the demand for goods in that country will be small or the size of the market will be small even though the country is big in size or its population is large.

Similarly, in poor countries, where the people's purchasing power is low on account of low per capita income, the demand for goods, and hence the size of the market, cannot be increased by high pressure salesmanship and vigorous advertising campaign. There should be enough people to buy them.

Thus, it is clear that, in the under-developed countries, the demand for goods, or the size of the market, cannot be increased by increasing the money supply, or by increase in population or by salesmanship and advertisement or the large size of the country. The size of the market can be increased only by increasing productivity. As Nurkse puts it, "The crucial determinant of the size of the market is productivity."³ Increase in productivity will increase people's incomes and hence their purchasing power.

The level of people's income in any country can be raised and consequently their purchasing power can be increased only by increasing productivity or aggregate output. A situation of higher productivity, higher incomes and high purchasing power of the

people will provide a profitable field for investment. It may be said that the size of the market can be enlarged by lowering the price of the products. But this is no solution of the problem. The real solution of the problem is only an increase in productivity. Only as a result of increase in productivity, there is increase in income and increase in purchasing power which will increase demand and enlarge the size of the market.

Say's law propounded by classical economists which we have studied earlier,⁴ tells us that production or supply creates its own demand. But this law cannot be accepted in the sense that the production of cloth creates its own demand because the workers engaged in the making of cloth will not spend their entire earnings on the purchase of cloth. In the same way, production of shoes cannot create its own demand. The reason lies in the variety of man's demands.

However, Say's law can be applied to some extent to the under-developed countries. If, in the under-developed countries, investment is made simultaneously in a large number of industries, incomes of a large number of workers engaged in these industries will increase. This will create demand for goods produced by one another. In other words, if investment is made simultaneously in a large number of industries and production is increased, then supply will create its own demand. The Say's law will hold good in such a situation.

Thus, we see that investment in a particular industry and the resultant production or supply cannot create its own demand but simultaneous investment in a number of industries can. As Nurkse says, "An increase in production over a wide range of consumables, so proportioned as to correspond with the pattern of consumers' preferences, does create its own demand."⁵

Nurksian Doctrine of Balanced Growth

We have explained above how, in the under-developed countries, the small size of the market or the limited demand for goods acts as a hindrance in the way of their economic growth or capital formation. When an entrepreneur wants to set up a factory or instal plant and machinery, he makes sure whether there is enough demand for the goods he proposes to manufacture and whether the investment will be profitable. We have seen that owing to low demand for industrial goods investment is discouraged because of low profitability. That is why the vicious circle of poverty operates on the demand side of capital formation. The people in the under-developed countries are poor and their per capita income is low. This keeps the demand limited and size of the market small. Since the market is

3. Nurkse, R.—*Problems of Capital Formation in Under-developed Countries*, p. 8.

4. Chapter 39.

5. *Ibid.*, p. 12.

small, the entrepreneurs are discouraged from investment in plant and machinery on which only large-scale production is possible and economical.

The result is that capital formation in the country is discouraged. Owing to lack of capital, productivity is low and since productivity per worker is low, the per capita income is low which means there is poverty. This is how the vicious circle of poverty operates in the under-developed countries.

According to Nurkse, it is the vicious circle operating in the under-developed countries, which stands in the way of their economic development, and accordingly, if this vicious circle can be broken, economic development will follow. The operation of the vicious circle can also be described thus: Inducement to invest depends ultimately upon demand, *i.e.*, the size of the market. And the size of the market in turn depends upon productivity, because the capacity to buy is ultimately based on the capacity to produce. Productivity, in its turn, largely depends on the use of capital. But, for an entrepreneur, the small size of the market will limit the use of capital so that productivity will remain low, thus keeping the size of the market small. The vicious circle will then repeat itself. This vicious circle of poverty, according to Nurkse, can be broken by a simultaneous investment in a large number of industries, *i.e.*, by a balanced economic growth.

We have explained how Say's law cannot be helpful in under-developed countries, if investment is made only in one industry. The output of any single industry newly set up with capital equipment cannot create its own demand. Human wants being diverse, the people engaged in the new industry will not wish to spend all their income on their own products. Suppose a shoe manufacturing industry is set up. If, in the rest of the economy, nothing happens to increase productivity, and hence the buying power of the people, the market for the additional output of shoes is likely to be deficient. People, outside the shoe industry, will not give up the consumption of essential food, clothing, *etc.*, to create a sufficient demand for shoes every year. The supply of shoes is likely to outrun demand, and, thus, the industry is likely to be a failure. Hence, if investment is confined only to one particular industry, it cannot prove fruitful.

But if investment is made simultaneously in a large number of industries, it will provide work for a large number of people producing diverse commodities. It will increase their income and they will be in a position to buy for consumption the goods made by one another. This is how supply can create its own demand (as Say's Law asserts) through the process of balanced growth. The producers become customers of one another's goods and demand is increased or the size of the market is enlarged. The

expansion of one industry helps in the expansion of others and there is all round growth. This is how the difficulty arising from small size of the market is overcome and the obstacle in the way of economic growth cleared.

In Nurkse's words, "The difficulty caused by the small size of the market relates to individual investment incentives in any single line of production taken by itself. At least in principle, the difficulty vanishes in the case of more or less synchronised application of capital to a wide range of different industries. Here is an escape from the deadlock; here the result is an overall enlargement of the market. People, working with more and better tools in a number of complementary projects become each other's customers. Most industries catering for mass consumption are complementary in the sense that they provide a market for, and thus support, each other. This basic complementarity stems in the last analysis from the diversity of human wants. The case for balanced growth rests on the need for a balanced diet."⁶

Taken separately, a number of industries may be unprofitable so that the private profit motive would not suffice to induce investment in these industries. However, undertaken together in a synchronized manner, a balanced increase in production would enlarge the size of the market for each firm or industry so that the "synchronized undertaking" would become profitable. This wave of capital investment in a number of different industries is called by Nurkse "balanced growth."

In this way, as we have already said, the hindrance to economic growth owing to the small size of the market is removed. The aggregate demand is increased owing to simultaneous investment in a large number of industries, because the incomes and productivity levels of persons employed in different industries go up. Hence, the under-development equilibrium trap and the vicious circle of poverty can be broken by balanced growth. If once this circle is broken then, since it is a circular connection, this circle will turn from poverty to balanced growth and to all-round development of the economy. In this way, the circle can be given a beneficial form.

Now the question arises: Which industries should be selected for investment? The answer is to be found in the above solution offered by Nurkse. Investment should be made simultaneously in such industries the manufactured products of which are in accordance with the demand or the preferences of the consumers or on which the persons engaged in different industries spend their incomes. These should be complementary projects so that they become each other's customers. Only by a simul-

6. Nurkse, *op. cit.*, p. 11.

taneous investment in such industries, production or supply will create its own demand.

Then the question is: How is it to be made sure that simultaneous investment in large number of industries is actually made? Nurkse answers that, if in the country there are dynamic and constructive entrepreneurs and industrialists, they can be induced to make investment simultaneously in different industries. If there is lack of such entrepreneurs, then the government can take the work of balanced growth in its own hands. That is, the government can itself make simultaneous investment in several industries and can thus increase people's incomes and productivity. As a result of investment in several industries, it will be possible to increase the use of capital goods in large quantities which will raise the level of productivity and there will be a large increase in the aggregate output of consumers' goods and services. As a result of this, the level of national income will rise which will help to raise the standard of living of the people. In this way, the poverty of the people will go. What is needed to remove the poverty of the people is to launch an attack on the various sectors of the economy **simultaneously**. This will remove the obstacle arising from limited demand or narrowness of the market and the inducement to investment will increase.

It seems to be proper to refer in this connection to external economies. When one industry creates demand for another, it will be profitable to the other industry. When one industry benefits from the growth of another industry, then we say that external economies are available from one industry to another. We have seen above that it proves profitable to make investment in complementary industries, because people engaged in such industries become one another's customers or create demand for one another. It is clear, therefore, that the doctrine of balanced growth is based on the concept of external economies.

It is to be noted that here we do not use the term 'external economies' in the sense in which Marshall used it. By 'external economies' Marshall meant those economies which arise from the localisation of a certain industry in a particular place and these economies are enjoyed by each firm in the industry by the establishment of numerous firms there. But in economic development, by external economies are meant those benefits which accrue to other industries by the establishment of new industries or the extension of the existing industries. We have seen above how, according to Nurkse's doctrine of balanced growth, these benefits accrue to the other industries by the establishment of new industries or the expansion of old industries through simultaneous investment in such industries in the form of increased demand or extension of the market. In fact, the increasing returns which arise from the process of economic growth, are mainly due to the

creation of external economies in the form of extension of the market or increase in demand and not due to the economies mentioned by Marshall such as technical information from the journals, improvement in the technical skill of labour, development in the means of communication and transport, etc., which arise from the location of an industry in a particular place.

It is worthwhile knowing whether, in balanced growth, investment will be made in agriculture or not. Nurkse has not discussed this point in his book '**Problems of Capital Formation in Under-developed Countries.**' But later on he made it clear that in his balanced growth, appropriate investment will be made in agriculture. Thus, he has not ignored agricultural development in his doctrine of balanced growth. In fact, investment in agriculture is implied in his book referred to above, because he has said that investment would be made in such industries simultaneously as produce goods conforming to consumers' demand or preferences. Since when, in the under-developed countries people will get employment in the various industries, they mostly spend their incomes on the foodgrains, investment in agriculture will be necessary to meet their demand and to promote balanced growth.

Nurkse has not made clear in his doctrine of balanced growth whether investment should be made in capital goods industries and social overhead capital like transport and communications, to promote balanced growth. Actually, Nurkse has suggested investment in consumer goods industries. But how will the machinery and capital equipment required in these industries be obtained? If they are not to be imported from abroad, they will have to be produced in the country and for that purpose investment will have to be made in their production.

Thus, we see if the doctrine of balanced growth is to be fully implemented, then investment will have to be made in consumer goods industries, agriculture, capital goods industries and social overhead capital. But when investment is to be made in all such sectors and industries, then, in order to bring about balanced economic growth, large quantities of resources will be required. It is doubtful if the under-developed countries have the means to mobilise resources in such large quantities.

Singer's Critique of Balanced Growth Doctrine

Prof. Hans Singer and Albert Hirschman, eminent American economists, have criticized Nurkse's doctrine of balanced growth. They contend that what is needed is not balanced growth, but a strategy of judiciously-planned unbalanced growth.

According to Singer, balanced growth cannot solve the problem of the under-developed countries, nor do they have sufficient resources to achieve balanced growth. Singer maintains that balanced growth doctrine might be better expressed as fol-

lows: "As hundred flowers may grow whereas a single flower would wither away for lack of nourishment." But where are the resources to grow hundred flowers? Singer agrees that the slogan "stop thinking piecemeal and start thinking big" is a sound advice for under-developed countries; but he also feels that there are "several areas of doubt" about the balanced growth theory in its Nurksian form.

First, if the balanced growth doctrine is interpreted to advise the under-developed countries to embark on large and varied packages of industrial investment with no attention to agricultural productivity, it can lead to trouble. At the initial stages of development, as the income grows with new industrial investment and employment, the relatively greater demand would be created for food and other agricultural goods. In order to sustain industrial investment, the agricultural productivity would have to be greatly raised. Thus, the big push in industry must be accompanied by a big push in agriculture as well, if the country is not to run short of foodstuffs and agricultural raw materials during the transition to an industrialized society.

But when we start talking about varied investment packages for industry and "major additional blocks of investment in agriculture" at the same time, we run into serious doubts about the capacity of under-developed countries to follow the balanced growth path. Singer quotes Marcus Fleming, "Whereas the balanced growth doctrine assumes that the relationship between industries is for the most part complementary, the limitation of factor supply assures that the relationship is for the most part competitive." Singer adds: "The resources required for carrying out the policy of balanced growth . . . are of such an order of magnitude that a country disposing of such resources would in fact not be under-developed."

Investment may be of whatever type, it necessarily induces some additional investment and some other productive activities. According to Singer, the expansion of social capital overheads and the improvement of production techniques cannot take place simultaneously, because the under-developed countries have only limited capabilities of making use of their resources. In the under-developed countries, not only are the resources and the capabilities to bring about balanced growth lacking but, according to Hirschman, balanced growth is not even desirable. His view is that if economic growth is to be accelerated, it will have to be brought about by unbalanced growth. If we promote growth by creating imbalances in the economy, the growth will be accelerated, because it will produce such incentives and pressures which will encourage development in the private sector.

"The doctrine is premature rather than wrong," Singer concludes. It is applicable to a subsequent stage of self-sustained growth rather than to the

breaking of a deadlock. For launching growth "it may well be a better development strategy to concentrate available resources on types of investment which help to make the economic system more elastic, more capable of expansion under the stimulus of expanded markets and expanding demand." He instances investment in social overhead capital and removal of special bottlenecks as examples of such "strategic" investment.

The fundamental trouble with the balanced growth doctrine, Singer further concludes, is its failure to come to grips with the true problem of under-developed countries, the shortage of resources. "Think Big" is a sound advice to under-developed countries, but "Act Big" is unwise counsel, if it spurs them to bite more than they can possibly chew.

Moreover, the balanced growth doctrine assumes that an under-developed country starts from a scratch. In reality, every under-developed country starts from a position that reflects previous investment and previous development. Thus, at any point of time, there are highly desirable investment programmes which are not in themselves balanced investment packages but which represent unbalanced investment to complement existing imbalance.

Hirschman's Doctrine of Planned Unbalanced Growth

Professor Albert Hirschman in his book, 'Strategy of Economic Development,' carries Singer's idea further and contends that deliberate unbalancing of economy, in accordance with a predetermined strategy, is the best way to achieve economic growth. Like Singer, he argues that balanced growth theory requires huge amounts of precisely those abilities which have been identified as likely to be very limited in supply in the under-developed countries. He characterises the balanced growth doctrine as "the application to under-development of a therapy originally devised for an under-employment situation." In an advanced country, during depression, "industries, machines, managers, and workers as well as the consumption habits" are all present, while in under-developed countries this is obviously not so.

As an under-developed country is incapable of financing and managing simultaneously a balanced "investment package" in industry and the needed investment in agriculture, in order to give a big push to lift an under-developed country from a position of stagnation, Hirschman prescribes big push in strategically selected industries or sectors of the economy. After all, he points out, the industrialized countries did not get to where they are now through "balanced growth." True, if you compare the economy of the United States in 1950 with the situation in 1850, you will find that many things have grown, but not everything grew at the same rate throughout

the whole century. Development has proceeded "with growth being communicated from the leading sectors of the economy to the followers, from one industry to another; from one firm to another."⁷

According to Professor Hirschman, the real scarcity in under-developed countries is not the resources themselves "but the ability to bring them into play." He divides the initial investment into two related activities: (a) **directly productive activities**, and (b) **social overhead capital**. An under-developed country may follow the method of unbalanced growth by undertaking initial investment either in social overhead capital or the directly productive activities. Whichever the type of investments, it will yield an 'extra dividend' of induced decisions resulting in additional investment and output. He contends that social overhead capital, and directly productive activities cannot be expanded simultaneously, because of the limited ability to utilize resources. Thus, the planning problem is to determine the **sequence** of expansion that will maximize induced decision-making.

Balanced growth (of social overhead capital and directly productive activities) is not only unattainable in most under-developed countries, it may also not be desirable. The rate of growth is likely to be faster with chronic imbalance, precisely because of "the incentives and pressures" it sets up.

Having demonstrated the virtues of strategic imbalance, we are left with the problem of discovering what kind of imbalance is likely to be most effective. Any particular investment project may have both "forward linkage" (that is, it may encourage investment in subsequent stages of production) and "backward linkage" (that is it may encourage investment in earlier stages of production). The task is to find the projects with greatest "total linkage." The projects, with the greatest total linkage, will vary from country to country and from time to time and can be discovered only by empirical studies of the "input-output tables."

In determining the sequence of projects, planning authorities should also give attention to the alternation of "pressure-creating" and "pressure-relieving" investments. In countries with vigorously expanding private enterprise sectors, the government's function can be largely limited to "pressure-relieving." As private investment takes place, shortages and bottlenecks will appear in transport, public utilities, education, and other activities traditionally assigned (in whole or in part) to public enterprise in such societies. Government ought not to feel "restless and slighted" when confined to this "induced role."

Where expansion through private investment is not assured, the government's role must be more

active. For example, it might build an iron and steel plant. "It is interesting to note," says Hirschman, "that the industry with the highest combined linkage score is iron and steel. Perhaps the under-developed countries are not foolish and exclusively prestige-motivated in attributing prime importance to this industry, because of the high total linkage effects of iron and steel industry." The building of it by the government will lead to a spurt of investment and production in a variety of fields both in the stages before and after this industry. In this way, it accelerates economic growth. The investment in iron and steel industry in turn will reveal deficiencies in the preceding and succeeding sectors of industry that the government must fill up. To remove these deficiencies and obstacles, further investment will be stimulated. When these deficiencies are filled up, further private investment will take place, and so the process of growth goes on.

Conclusion

The foregoing discussion leads us to the conclusion that the balanced growth doctrine is neither attainable nor desirable. On the other hand, for rapid economic development the under-developed countries should rely largely on judiciously-planned unbalanced growth. In fact, Soviet Russia and India have been following this course.

Mahalanobis Strategy of Economic Growth

There has been lot of controversy in our country on the appropriate strategy to be adopted for planned economic development. There was no clear strategy in the First Five-Year Plan. In this plan, emphasis was laid on increasing agricultural production to achieve self-sufficiency in foodgrains and to stabilise prices. That is why agriculture was given top priority in its development outlay.

But when the Second Five-Year Plan was being formulated the question arose as to what strategy should be adopted for the planned development in India. At this time, Prof. P. C. Mahalanobis prepared a growth model in which he showed that to achieve a self-sustained growth quickly in the country, it would be essential to devote major part of the development outlay to building basic heavy industry, e.g., of capital goods industry like steel and the engineering industry for making different types of machines, the multipurpose river valley projects for irrigation and power.

According to Prof. Mahalanobis, the rate of real capital formation in a country like India did not depend merely on savings in the form of money but it depends on the capacity for making capital goods. He said that even if the rate of savings was substantially raised and it was desired to accelerate economic growth and capital formation by investing it in the consumer goods industries, it would be

7. Hirschman, A., *Strategy of Economic Development*, pp. 62-63.

futile. The reason is that the capital goods required for the consumer goods industries are not produced in the country in sufficient quantities.

Thus, Prof. Mahalanobis was of the view that if large investment is not made in the heavy basic industry and capital goods industry, the country will for ever remain dependent on foreign countries for the imports of steel and capital goods like machinery for economic development and real capital formation. Since it is not possible for India to earn sufficient foreign exchange for the purpose by increasing exports, the capital goods cannot be imported in sufficient quantities owing to foreign exchange constraints. The result will be that the rate of economic growth and the rate of real capital formation in the country will be slow indeed.

Prof. Mahalanobis was of the opinion that without adequate investment in heavy basic industry, it was not possible to achieve self-reliant and self-sustained economic growth and the economic development of the country will be dependent on the imports of capital goods from foreign countries. Thus, we see that according to Prof. Mahalanobis, to achieve rapid economic growth and self-reliance, it would be necessary to give a high priority to basic and capital goods industries in the development strategy of a plan.

It is necessary in this connection to mention Prof. Mahalanobis's views on increasing employment opportunities and to achieve a state of full employment. According to him, productive employment can be increased only by increasing the production of capital goods like steel, electricity, machinery, fertilizers, etc. Whether it is increase in employment in the agricultural sector or in the industrial sector, it cannot be achieved without increasing the output of capital goods. Thus in Prof. Mahalanobis's opinion, even to achieve full employment, it will be necessary to accord high priority to capital goods industries in the development strategy.

The above development strategy as laid down by Prof. Mahalanobis was adopted in India in the Second and Third Five-Year Plans.

Appraisal. However, Mahalanobis's strategy was subjected to severe criticism, especially by Profs. C. N. Vakil and Brahma-nand of Bombay University. They criticised Mahalanobis's strategy suggested for the Second Five-Year Plan. These two economists jointly wrote a book "**Planning for an Expanding Economy**" in which they raised objections against the strategy. According to Profs. Vakil and Brahma-nand, the increase in employment in a country depends on increasing the supply of essential consumer's goods and wage goods. When in a country employment is provided to a large number of people, the demand for the essential consumers' goods and wage goods will increase. If these goods cannot be supplied to them, they cannot be given

employment. Hence, Profs. Vakil and Brahma-nand laid emphasis in the development strategy on large investment in the production of essential consumer goods like foodgrains, cotton textiles, sugar, etc. They recommended a growth model in which important place was assigned to agriculture and the essential consumers' goods industries.

Another criticism of Prof. Mahalanobis's strategy is that owing to large investment in the heavy basic industries, there is a great and rapid increase in money incomes on account of which there is great increase in demand for consumers' goods. But their supply cannot be increased quickly or in a short time. The necessary consequence of this state of affairs is a great rise in prices or the creation of an inflationary situation.

Another serious flaw of Mahalanobis's model lies in its assumption of the mutual independence of the productivity coefficient and the technology parameters. How can the two coefficients be independent of each other because the investment per unit of employment directly depends on the productivity of investment?

Further Prof. Mahalanobis assumes investment as a single homogeneous fund which is not correct. This assumption holds only if there is a single type of investment good.

Again his choice with regard to key variables—proportion of investment allocation to the investment goods sector is arbitrary.

Moreover, Prof. Mahalanobis's model suffers from a serious handicap in that it is framed in the capital-output ratios and the capital-labour ratios which have been assumed to be strictly invariant. Production techniques are regarded as rigidly fixed. There is also a rigid and unrealistic assumption about the complete absence of mobility of capital from the consumer goods sector to the investment-goods sector and even within the investment-goods sector itself.

Prof. Shigeto Tsuru calls the Mahalanobis model as one-eyed model because it pays attention only to the supply side and ignores the demand altogether. Thus it fails to relate the sectoral outputs with sectoral demands.

In spite of the drawbacks mentioned above, Mahalanobis's model is an operational model of growth amenable to practical use. It provides an actual approach to investment planning which can be adopted for the execution of a plan. It correctly emphasises the fact that a very high proportion of investment needs to be allocated to the investment goods sector to ensure a high level of marginal rate of savings. It also underlines the need to create maximum growth potential for the future.

Since the investible resources in the low-income countries are very much limited in face of growing and urgent needs for them, the problem of choosing between alternative employment of these resources assumes great importance. Given the total investment and its distribution over different sectors and given the alternative technical and locational possibilities, the question is how to rank alternative projects so that some of them are preferred to others. For the same level of output, it may be possible to use several alternative techniques or different factor combinations and we have to discover the most economical technique in a given situation. Obviously, for a planned unbalanced growth, we must explore suitable criteria for investment, *i.e.*, to discover the main bases on which to determine the distribution of limited investible funds and skills among the numerous claimant fields of investment. We have discussed above the investment criteria of total linkage effects as recommended by Hirschman, which form a part and parcel of his theory of planned unbalanced growth. Now we shall discuss other investment criteria which have been put forward.

Cost-Benefit Analysis¹

While selecting projects for investments out of a number of technically feasible alternatives, the most important consideration seems to be to weigh their costs and benefits and to select those which maximise the difference between costs and benefits. The costs include the cost of capital, *i.e.*, interest, cost of raw materials, rent, salaries, wages and other expenses and benefits refer to the return on the capital invested based on the size of the output resulting from the investment. "The aim is to maximise the present value of all benefits less that of all costs."

1. Prest, A.R. and Turvey, R.—The 'Main Questions' in *Cost-Benefit Analysis*, 1972, ed. Richard Layard, pp. 73-99.

The purpose of the cost-benefit analysis is to indicate whether a particular project is worthwhile or which is economically the best of the several alternative projects that can be undertaken subject to specified constraints.

The alternative projects which present themselves for our choice differ in the type and the number of workers required, the nature and the quantity of raw materials and equipment required, the period involved in their completion and the life of the project and in the resultant output from that particular investment. These differences affect the costs and benefits of these projects and we have to attempt a social valuation of these costs and benefits so as to determine the choice of a particular alternative in preference to others.

The weighing of costs and benefits seems to be a simple affair but in its application several ticklish questions crop up:

(a) Which costs and which benefits are to be considered? (b) How are the costs and benefits to be evaluated? (c) Since we have to find the present values of costs still to be incurred and benefits still to accrue, at what rate of interest are they to be discounted? and, (d) What are the relevant constraints?

It may be noted that we have to consider social costs and social returns as distinguished from individual or private costs and returns. Social cost means the opportunity cost from the social point of view incurred by the use of scarce resources, and social returns mean the additions to the total output of the community as a whole resulting from that particular investment. Social costs and benefits are different from the purely accounting costs and returns. "The costs and benefits of a project are the time streams of consumption foregone and provided by that project." This follows from the social opportunity cost of funds transferred from the private sectors to the public sector.

It has also to be noted that returns or benefits of a project are reinvested and create new investment opportunities. Some of the funds used for the project would otherwise have been invested or it has been rendered impossible to invest these funds in some other and mutually exclusive investment project, because the cost has been used here in the sense of opportunity cost.

What Costs and Benefits? Now let us see what costs and benefits are to be included in the cost-benefit analysis. As mentioned earlier, in the cost-benefit analysis of a project, we should not merely confine ourselves to the consideration of direct costs and benefits but we should also consider the external or side effects and secondary benefits. That is, the costs and benefits have to be taken in a wider sense which means that we must take into account costs and benefits which accrue to the bodies other than the one sponsoring the project. This is necessary because investment in a particular project alters the physical production possibilities of the other producers or the consumption possibilities of other consumers thus affecting their satisfaction from given resources.

For instance, construction of a reservoir upstream will necessitate more dredging by the downstream authority, or improvement of a certain road increases the incomes of garages and restaurants on that road. But it has to be offset by the losses incurred by those on the other roads owing to diversion of traffic.

In order to avoid double counting, we have to ignore purely transfer or distributional items from cost-benefit evaluation. That is we have to take into account the value of the increment of output resulting from a given investment and not the increment in the value of existing assets.

It follows from the above discussion that the investing authority should take into account technological spillovers, e.g., the effect of the construction of a dam on the productivity of land elsewhere in the neighbourhood. The decrease in production will be considered an item of cost.

Then there are the secondary effects. An irrigation project will not only increase output in the area it commands but also confer other benefits. The primary benefit is the increase in the value of agricultural output less the costs incurred by the farmers concerned. But increased output will result in increased business activity, and hence profits, of the grain merchants, millers, transporters, banks, bakers, etc. These are the secondary benefits. In case the output has a market value, then this value plus the consumer's surplus, if any, will constitute the benefit. In case the output is not sold in the market in a normal way but it is supplied to the consumers at a price based on welfare considerations, value will have to be imputed.

Valuation of Costs and Benefits. As for the

valuation of costs and benefits, if they are expressed in terms of money, we have to make adjustments to the expected prices of future inputs and outputs in order to make allowance for the anticipated changes in the relative prices of the concerned items, but not for expected changes in the general price level. The expected changes in the output levels must also be taken into account. Notice has to be taken of monopolistic elements or other market imperfections. In such cases, investment decisions based on market prices will not be correct. Some correction will be needed for the distortions resulting from market imperfections. Account must also be taken of taxes and controls because they also create divergence between market price and social cost or benefit. Taxed inputs should be measured at their factor cost instead of their market value.

There is still another cause of divergence between social cost and private cost, *viz.*, unemployment. When at the prevailing price there is excess supply of any input or factor of production (e.g., labour in the case of unemployment), the price exaggerates the social cost of a project using that input. The utilisation of unemployed labour in investment projects involves no social cost since it does not reduce output anywhere, because the unemployed labour is not supposed to make any contribution to output. In this case, the society as a whole does not forego anything. Hence, in such cases, the use of market values to ascertain direct costs and benefits of a project overstates its social cost and understates its total benefit.

Social costs of materials, machinery and equipment should be calculated like that of labour. In case a material is available free, e.g., sand and stones, the only social cost is that involved in the use of labour for collecting, digging, etc. As for scarce materials, their social cost is the cost to the investing agency. Machinery and equipment have usually to be imported and they involve a draft on foreign exchange. In view of this, the social cost is higher than the private accounting costs.

In the case of collective goods, e.g., defence, public health measures, educational facilities, it is not obviously possible to use market price to evaluate their benefits. The quantity of such goods and services supplied to any person in the community cannot be independently varied. Although individuals may differ in their marginal valuation of such goods and services, they are all supposed to use the same amounts. In such cases, there is no basis for making an investment decision by computing their present values.

Then, there are intangible costs and benefits (e.g., scenic effect of building a dam). These costs and benefits are not quantifiable and cannot be valued in any market sense.

Rate of Discount. Now we come to the question of ascertaining the present value of the future costs

and benefits, *i.e.*, discounting process. Which rate of interest is to be used for the purpose? There is a large number of interest rates prevailing in the private sector and there seems to be no ground for selecting any of them. It is not clear whether any market-determined rate would be sufficient for community investment decisions. It is said that social time preference rate attaches greater importance to the future than private time preference. It seems best to use the government borrowing rate since it is easily applicable and is also a risk-free rate of interest. Usually, the interest rate is selected on the basis of observed rates ruling at the time for calculating present values.

Social cost of time has also to be determined. Projects differ in their gestation period and in the durability of construction. On what basis are we to impute social value of time? Take first the gestation period. The social cost in gestation is the value of the output that could alternatively be obtained in the meanwhile with the same resources, the maximum that could be obtained within the shortest possible time. Projects with shorter gestation period but with higher output have, of course, to be preferred. But if the rate of output in a shorter gestation period is lower, as is generally the case, then we have to balance the advantage of having a higher rate of output in the longer period against the disadvantage of having to forego the output which could be had in the shorter period even if it be at the lower rate, in the intervening period.

Appropriate rate of discount must be applied on account of time preference. The individuals value the volume of output in future less than in the present. But in the case of the society, which is a continuing entity, there is no justification for applying this rate of discount. It is, therefore, necessary to confine calculations about future streams of output and balance of discount on account of time preference to be zero, the social cost of time would be the maximum rate of output realisable per annum through the alternative with the shortest gestation period. In case, the assets created by the alternative investments are less durable, the annuities to be taken into account will be fewer.

As for the durability of the assets created by an investment, it affects current costs via the rates of depreciation. Less durable project is subjected to a higher rate of depreciation, and vice versa and hence a larger deduction must be made from its gross output to arrive at the net addition per annum of the project. But the society calculates the rates of depreciation in a different manner from private accounting. The community values capital equipment on the basis of what it can produce relatively to the use of labour involved. Hence, if the same equipment can be produced at less cost owing to improvement in labour productivity, the value of the equipment installed earlier will depreciate in terms of its output.

Estimation of the Social Product. Here we repeat that, in the under-developed countries, there is likely to be considerable divergence between the private and social product, especially in the case of building up the necessary infrastructure or the social and economic overheads. This divergence is due ultimately to external economies which in practical life are not easy to define and calculate. An investment creates external economies by increasing the demand for certain factors of production and products and thus making it possible for the existing units of production to turn out larger output.

When completed, an investment helps to increase productivity in existing units by either increasing the supply of inputs or making possible new and more economical combinations of factors. Thus, there is expansion of output, as a result of an investment. Sometimes this expansion needs further investment. The divergence between the private and social product of the initial investment will appear only to the extent that these induced investments are actually undertaken.

In this, we face some difficulties: In estimating the social product of an investment, account must be taken of the increase in output accruing from investments whose profitability it has increased. The output of the supplementary investments can be treated as the social product of initial investment if it creates by itself the additional capital required for the supplementary investments. Since one investment leads to another how far can we go on pursuing the effects of an investment? It is better, therefore, to avoid this pursuit and confine ourselves to a definite time period and region and lump together the initial and the likely induced investments and relate this total to the total of expected increases in output resulting therefrom. If increases in output save foreign exchange either by increasing exports or by replacing imports, greater value should be put on them, since foreign exchange presents a great problem to the underdeveloped countries.

Relevant Constraints. These constraints are physical, legal, distributional constraints and budgetary constraints. The most common physical constraint is the production function which relates the physical inputs and outputs of a project. This directly enters into the calculation of costs and benefits. One of the inputs or some inputs may be in totally inelastic supply. Then, the investment must conform to the legal framework. The legal constraints arise, for instance, from regulated pricing. Administrative constraints arise from what can be administratively handled. The distributional constraints arise from the fact that no section should be unfavourably affected in the matter of income distribution. It is not always possible to make the gainers compensate the losers. There are budgetary constraints, since projects have to be executed within the budget allotment.

Conclusion. The whole purpose of the cost-benefit analysis is to select the projects for investment or lay down the investment criteria. Where no projects are inter-dependent or mutually exclusive, and where there are no constraints, the projects which maximise the present value of total benefits less total costs can be indicated as under.²

1. Select all projects where the present value of benefits exceeds the present value of costs;
2. Select all projects where the ratio of the present value of benefits to the present value of costs exceeds unity;
3. Select all projects where the constant annuity with the same present value of benefits exceeds the constant annuity (of the same duration) with the same present value as costs;
4. Select all projects where the rate of return exceeds the chosen rate of discount.

Capital-output Ratio Criterion

An investment criterion that has often been advocated by various economists is that of capital-output ratio. That is, in choosing among investment projects and in determining priorities, capital-output ratios of different investment projects be compared. Those investment projects (or their technical forms) should be selected that minimize the capital-output ratio. If capital-output ratio of investment A (3 : 1) is less than the capital-output ratio of investment B (5 : 1), then, in developmental planning, investment A must get priority over investment B.

The underlying assumption of this criterion is that products in which capital investment is to be made are substitutes of each other. If every project is a substitute of every other, there is no reason why we should not prefer a low marginal ratio of capital to net output. The classic case of substitutability is provided by the problem of choosing between alternative techniques to produce the same commodity. Various examples can be given of it. Additional foodgrains production can be had either from constructing major irrigation works or by building small irrigation works or by producing and using more fertilizers. Electricity can be produced either by thermal projects or by hydel projects. Further, more cloth can be produced either in the handloom (khadi-cloth) sector or in the mill sector (mill-cloth). We select a project with a lower capital-output ratio.

But the criterion of capital-output ratio has been subjected to severe criticism. It is maintained that the economic world is not an abode of perfect or very high substitutability. For example, the allocation of investment between agriculture and industry or

between consumption goods and investment goods cannot be adjudged on the basis of capital-output ratio, since the degree of substitutability between these products is very limited. Agricultural products and industrial products are complementary rather than substitutes.

Again, what should be compared in choosing among investment projects is not their capital-output ratios, but their contribution to income during a crucial period. The goal of development policy is not the maximum output at a point of time but a maximum rate of growth over time.

Moreover, capital-output ratio may be one of the criteria when substitutes are involved, but it is not the sole criterion. There are many other considerations too, such as the labour-investment ratio and the effect of investment on income distribution. In a developing country like India, where fuller employment and better distribution of income and wealth are also the cherished aims of the Five-Year Plans, these other considerations of any investment projects are of paramount importance.

Marginal Social Productivity Criterion

A more general criterion of investment proposed is that of social marginal productivity. According to this criterion, those investments should be made in which social marginal productivity is the highest. Those who advocate social marginal productivity as the main investment criterion have also deduced several corollaries as practical guides to policy. Some of these are: (1) a given volume of investment should be allocated in a manner that maximizes the ratio of current output to investment, i.e., capital-output ratio be minimized; (2) those investment projects should be selected that will maximize the ratio of labour to investment; and (3) to reduce pressures on the balance of payments, investment should be allocated in a manner that will maximize the ratio of export goods to investment.

The use of these specific principles in specific situations is, however, likely to be difficult. For development is a dynamic process which involves changes in the size and quality of population, tastes and pattern of demand, technological knowledge and social and institutional factors. The criterion of social marginal productivity must, therefore, be interpreted within the total dynamic complex. To do this, one must make value judgments regarding the various social objectives some of which can be conflicting. Suppose different projects are likely to result in different distributions of income. If a project maximizes total output or income but at the same time involves a more unequal distribution of income than would another project, should it be preferred? Answers to questions like this involve value judgments and different individuals may reach different conclusions.

Like the capital-output criterion, the marginal

² Prest, E.R. and Turvey, R., 'The Main Questions' in *Cost-Benefit Analysis*, edited Richard Layard, 1972, p. 96.

social productivity criterion is also ambiguous as a guide to investment decisions, when the shape of income stream over time is considered. To determine the most productive investment projects, future yields of capital assets must be discounted to their present values, and these discounted values compared with their present costs. Investment decisions will differ according to the future shape of the income stream which is desired. For instance, from the standpoint of having a maximum increase in national output during the next five years, one type of investment, say, cotton textile production, might be the best. From the standpoint of having the highest national output 15 years hence, however, investment in some other direction, say, steel production, might be better.

These and other similar questions which come readily to mind mean that specific decisions regarding the direction of investment cannot be made without first deciding on a set of social objectives.

Conclusion

On the basis of the foregoing discussion, it will be appreciated that no cut-and-dried formula type criteria for investment can be laid down. Instead, a whole host of considerations will have to be borne in mind. Nor can the above criteria be ignored when deciding upon the pattern of investment. For the rest, the best we can do is to offer a few general remarks bearing on the allocation of resources among various investments.

Some General Guidelines

External Economies. It has generally come to be accepted that the basic consideration in selecting industries for development in an under-developed economy is the prospect of external economies. Allyn Young drew attention to this important consideration in 1928, and Rosenstein-Rodan made out in 1943 a strong case of developing those industries which would create conditions favourable to the growth of other industries. For example, the development of transport or of sources of fuel and power influences both the costs and the market possibilities of diverse manufacturing industries. Similarly, iron and steel and engineering industries increase the growth and potentiality of industry in general. From the standpoint of supply, it thus emerges that one of the requirements of investments should be that it creates additional external economies.

Market. On the demand side, when considering particular industries, one cannot assume that supply will create its own demand. There must be markets for the commodities produced. Where are the potential markets in the poor countries? Investment should be made in those industries which produce commodities having a readily-available demand. The demand for building and construction is likely

to be high, since poor countries are deficient in roads, railways, houses and public utilities. Investment in export industries, for which there is foreign demand, is another attractive area, and import competing industries provide still another potential choice of investment.

Growing Points. These considerations of external economies and of available market demand may be summarised by saying that investment should be directed to "growing points" in the economy. In the initial stages of economic development, it is highly useful to concentrate on certain focal points which seem to have the promise of more rapid growth. From these local areas, a chain reaction usually starts that gradually spreads chain to the remaining areas of the economy. Thus, even an unbalanced process of initial economic growth has every possibility of ultimately merging into the broader requirement of balanced growth.

Balance of Payments Criterion

Investment should also satisfy what we may call the "balance of payments" criterion. Alternative types of investment expenditures will have different effects on the country's export capacity and import requirements. One investment project may be more export-creating than another and one project may be more import-requiring than another. Knowing that under-developed countries are particularly prone to balance of payments difficulties, investments should be directed, as far as practicable, to those projects that will reduce imports or increase exports, other things being equal.

Quick-Yielding Investments

Some industries have a long gestation period, while for some others there is a short time-lag between incurring the investment expenditure and the reaping of fruits. While comparing the benefits of the extra output with the costs, the cost of time-lag must never be forgotten. Unless eventual benefits are outstandingly great, priority should be given to those industries or production techniques which have a relatively short time-lag. Mr. Hicks has called such industries "quick investment" type. In a developing economy, with a high inflationary potential and a need for a rapid rise in the living standards, industries which have a high "fruition co-efficient" (i.e., a high ratio between output and investment) and also a short 'fruition-lag' should generally be preferred. This point is particularly important when one is comparing the two ways of producing the same result. Thus, extra agricultural output may be secured by major irrigation schemes or minor irrigation schemes. By and large, the major irrigation schemes should be regarded as less desirable than the minor irrigation schemes, because of

the time-lags and high capital costs of the former unless the eventual benefits are outstandingly great.

Labour-Intensive vs Capital-Intensive Techniques

Further, there is a problem of choosing between labour-intensive industries or labour-intensive methods and capital-intensive industries or capital-intensive techniques. Since in poor under-developed countries, there is a chronic unemployment and the price of labour is low compared with the price of capital, a relatively high ratio of labour to capital should, as a rule, be favoured. In general, where market opportunities exist, and technological restraints are not a problem, the most efficient use of resources in the less developed countries will tend to favour labour-intensive methods. With respect to innovations, it would also follow that capital-saving and labour-using innovations should be favoured as against labour-saving and capital-using innovations.

But it is possible that, as between a technique involving less capital but large labour-employment and another involving a large capital and relatively small labour-employment, there may be such a large differential in productivity in relation to costs that it will be profitable to adopt the capital-intensive technique, despite the high cost of borrowing and amortisation. Again, to strengthen its balance of payments, the country may have to direct some of the new investments into export production. If the export industries are capital-intensive, such as mining and mineral refining, then, even though there is a surplus of labour, investment may have to be directed to these capital-intensive industries for the sake of earning the necessary foreign exchange.

Local Community Assets

In a country like India, where the problem of disguised unemployment in the agricultural sector is very acute and of wide proportions, there is another important consideration affecting the choice of investment. The building of local community assets should be a particularly suitable type of investment, since such local assets will absorb the otherwise unemployed and under-employed labour force in the rural areas and add to productive capacity. Minor irrigation works, contour-bunding, land reclamation, village approach roads, bunds against floods, buildings for schools and health centres are some of the instances of local community works the nature of which amply speaks of their fitness for being undertaken in planned development.

Among the other criteria for choosing between techniques of production in an under-developed economy, we may discuss (a) The Rate-of-Turnover Criterion, (b) The Surplus Rate Criterion, (c) Em-

ployment Absorption Criterion and (d) The Time Series Criterion.³

The Rate of Turnover Criterion

According to Prof. J. J. Polak, the investment should be chosen on the basis of the rate of turnover, i.e., the ratio of output to capital. We have already discussed above the capital-output ratio. As explained by Prof. Norman S. Buchanan, "if investment funds are limited, the wise policy, in the absence of special considerations, would be to undertake first those investments having a high value of annual product relative to the investment."⁴ That is, investment projects with a high rate of capital turnover should be given preference. In other words, capital coefficient is to be minimised in order to maximise output.

But, as a general guide to policy, this criterion suffers from some serious limitations: (a) The high rate of turn-over may entail a high rate of depreciation so that the net output is not necessarily high.

(b) 'Short-fruiting-lag projects' may have a lower capital-output ratio in the short period but not necessarily so in the long period.

(c) This criterion ignores the cost of complementary factors like labour used in operating the capital.

(d) This criterion also ignores the 'project-complementarity', particularly the vertical and horizontal transmission of external economies. In order to avail of the external economies, it may become necessary to choose an investment with a higher capital-output ratio.

(e) In a sector like agriculture, the amount of fixed capital investment is small in proportion to total inputs. Hence, factors other than capital investment may substantially change the fixed capital-output ratio.

The Surplus Rate Criterion

This criterion seeks to maximise the per capita income at some future point of time rather than maximise the national income now. For this purpose, the rate of savings should be maximised so that the rate of reinvestment can be maximised. Hence, for each unit should be chosen "that alternative that will give each worker greater productive power than any other alternative."

This criterion assumes that profits are largely

3. (1) Sen, A.K.—'Some Notes on the Choice of Techniques of Capital Intensity in Development Planning' in "Accelerating Investment in Developing Economies," ed. A.N. Agarwal and S.P. Singh, 1969 pp. 213-238 and (2) Chaudhuri, A.K., Investment Criteria and Choice of Technique, *Lok Udyog*, January 1973, pp. 29-33.

4. *International Investment and Domestic Welfare*, p. 24.

saved and re-invested and that wages are largely spent on consumption. Hence, it is recommended that the capital resources should be so allocated among the alternative uses that the marginal per capita reinvestment quotient is the same in different alternatives. The application of the law of equi-marginal return will bring about an optimal utilisation of scarce capital resources.

According to this criterion, capital-intensive projects should be undertaken in under-developed countries even though capital is scarce because in this way output per capita will be maximised. The capital-intensive projects are advocated also on the ground that they will provide training and experience to management and the working force and these are the things that the developing countries lack the most.

But the application of this criterion is likely to produce some undesirable social effects: It will accentuate inequalities in income and wealth in the community, because the capitalists will gain at the expense of the wage earners.

Employment Absorption Criterion

It is well-known that in the under-developed but over-populated countries, labour supply is abundant and cheap. There is large-scale unemployment or under-employment especially in the agricultural sector in the form of disguised unemployment. Hence, it is suggested such techniques should be adopted as are labour-intensive. We have already discussed above the pros and cons of labour-intensive vs. capital-intensive techniques. We discuss it here from the point of view of employment. Techniques with greater employment content should be preferred to others which may absorb less labour.

Besides providing more employment, such techniques will raise the level of consumption because the newly employed labour will spend their incomes on consumption. Higher propensity to consume will stimulate further investment which will accelerate economic growth. Also, such techniques will be conducive to a high degree of economic equality by raising the level of income of the working class people.

But the defect of such techniques is that they do not necessarily maximise the national output. Labour-intensive techniques are not as productive as the capital-intensive techniques. Low labour productivity may be perpetuated. Besides, the quality of the end-products suffers.

The Time Series Criterion

When several techniques are available to choose from, we may estimate real income flows resulting from each technique. For this purpose, we apply the rate of investment with corrections due to the variability of the volume of investment arising from

different spending habits and varying import-content of investments. When we have taken two time series of real income flows, we have to apply the relevant rates of time discount. The time discount is necessary because of (a) the diminishing marginal social utility of income with the rising income level and (b) the uncertainty of the future. In the case of quickly falling marginal social utility, the higher rate of income growth may not mean higher level of social satisfaction. Since future is uncertain, it is necessary to have a valuation of uncertainty discount.

This criterion suffers from some serious limitations when we consider it as a policy prescription. It is not easy to arrive at utility and uncertainty functions. A more practical method seems to be to fix the period of time we want to consider and weigh the loss of immediate output arising from the adoption of more capital-intensive techniques against a gain in increased output later.

Socially Desirable Income Distribution Criterion

Another important investment criterion is the socially desirable income distribution. It means that investment should be so planned as to achieve equitable distribution of benefits. This criterion may be regarded very important because economic development in under-developed countries tends to accentuate disparities of income and wealth distribution in the country. Such disparities cause grave discontent and pose a great threat to political stability. Such desirable investment may be in the form of public utilities, education, public health, improving means of transport and communications, etc. In this type of investment benefits are evenly distributed, may be more in favour of the poor than the rich.

Conclusion

From the above analysis of the various investment criteria and the choice of techniques, it is clear that we cannot lay down dogmatically the criterion or criteria which should guide us in investment. Nor can we make a categorical choice of any particular technique.

Thus, there is no single, simple, precise and objective criterion for planning investments. The best that the planners can do is to strike a balance among the various considerations we have discussed above.

It is clear that investment criteria should not be linked with any one of the objectives. For, promoting economic growth, output, profits, savings and employment all must be increased. To use Prof. Rostows' terminology, the leading sectors of the economy should be developed or investment should create increase infrastructural facilities.

For accelerating capital formation and promoting other developmental activities huge resources are needed. Wherefrom are the underdeveloped countries to find such resources? Owing to the narrowness of the margin of aggregate output over consumption demand, the resources needed for the financing of development plans pose a very difficult problem. There are several methods of financing economic development. The principal methods are discussed below:

Savings

The total investible resources available at any time in a country are made up of domestic savings and external resources which are obtained from abroad in the form of foreign capital. To take savings first. The aggregate savings of an economy consist of government savings, saving by the business sector and savings by the households. Government savings are the tax revenues minus public expenditure; the business savings are the gross income of trade and industry minus the dividends and the taxes paid and the savings of the households are the disposable income minus consumption expenditure. In India, in 1958-59, government savings accounted for 10.6 per cent, corporate savings 3.5 per cent and the savings of the household sector 85.9 per cent.¹

Broadly speaking, savings are determined by the rate and pattern of growth and the institutional and social factors. In order to promote economic development, savings have not only to be generated but they have also to be mobilised to the maximum extent possible and then canalised them into productive investment. The conditions in the underdeveloped countries are not very conducive to economic growth from the point of view of capital formation: The rate of savings is very low (about 5

per cent of the national income), the financial institutions to mobilise these savings are not adequate; nor is the climate for investment favourable.

Finance is needed both for private and public sectors. So far as the private sector is concerned, it primarily depends on the voluntary savings of the people. Profits of private undertakings can also be ploughed back into investment. Institutions like Finance Corporations set up by the Government can also provide the needed development finance to the private sector.

To finance capital formation and other development activities in the public sector is the responsibility of the Government. There are various methods of financing development in the public sector. Owing to the shortage of voluntary savings, the governments are often compelled to resort to the device of forced saving. Below we shall discuss each method of development finance, for the public sector, one by one.

Taxation

There is considerable unanimity among economists about the usefulness, nay necessity, of taxation and fiscal policy for mobilising resources for economic development in the under-developed countries. When development has proceeded to achieve a certain rate of growth, the level of savings by households and businesses rises sufficiently to meet the requirements of development. But in the early stages, some measure of compulsion is necessary to compel the people to save by means of suitable taxation measures, because the rate of domestic savings is low and propensity to consume is very high.

Thus, taxation is an important method of increasing the volume of savings by restricting domestic consumption. Both direct and indirect taxes can play a part in augmenting the resources of the govern-

1. Reserve Bank of India Bulletin, August 1961, p. 1204.

ments to be spent on developmental activities. For achieving best results, taxes should be imposed on non-entrepreneurial incomes and luxury consumption. But the taxation of non-functional surplus may not yield a substantial volume of development finance, because most of the income of the vast majority of the people in an under-developed country is devoted to the consumption of necessities. Thus, the need to raise an adequate volume of development finance makes it inevitable for the government to extend the coverage of indirect taxes to include the staple commodities of mass consumption. Moreover, the taxation of agriculture has to play an important part in the mobilization of resources for the public sector in a developing economy.

Thus, taxation is the most important means available to the State for mobilising nation's resources for economic development. Its yield can be more accurately estimated and its economic effects can be better foreseen. It can be used to finance development with minimum adverse effects on economic stability. Hence, it is necessary to intensify the tax effort, especially because the savings are meagre and the rate of capital formation low, whereas the development requirements are very large.

But taxation as a method of development finance has some difficulties. While involuntary savings are increased, voluntary savings may be diminished, since individuals may reduce their voluntary savings in order to maintain their former consumption levels. This may reduce the resources going to the private sector. Another major drawback of taxation is its negative effects which it may have on incentives. If taxes on wage-earners diminish their incentive to work harder, if taxes on profits of the higher income group reduce their incentive to save and to make investments in new enterprises, and if taxes on the output or income of the farmers diminish the incentive to improve agricultural techniques, then, the forced savings extracted through these taxes will not be an unmixed gain.

Thus, it is necessary to devise a tax system that will not weaken the incentives to work, save and invest nor will it violate the accepted notion of equity.

Tax policy of the government can exert a powerful influence both on savings and investment—the two crucial factors determining economic growth. The primary objective of the tax policy in the under-developed countries is to transfer from the community to the State as large a volume of resources as possible with minimum of adverse effects on incentives for production and investment. It is generally agreed that there is a considerable scope for broadening and deepening the tax system by improving the tax structure and by toning up the tax machinery. A sound tax policy can provide

incentives for private enterprise. Taxation can be used as means for controlling economic fluctuations, for containing inflationary pressures and to achieve social justice by reducing inequalities in income and wealth. These are principal objectives of tax policy in under-developed countries.

Government Borrowing

Borrowing by the government is another method by which the saving of the community may be mobilized. But there exist a number of obstacles which hinder the success of borrowing policy in an under-developed economy. In many such countries, there are no organized money and capital markets and in those where such markets exist, they constitute a very small segment of the total money market of the country. There may not, besides, exist any organic relationship between the organized and the unorganized parts of the money market. Moreover, the resources of the organized capital market may be too inadequate to fulfil the needs both of the private and of the public sector. Further, in the capital market the competition for funds between the government and the private sector will raise the rate of interest and this will have a highly disincentive effect on the increase of investment in the private sector.

For the success of government's borrowing policy, it is necessary that financial institutions be developed and extended into the rural sector of the economy. This will inculcate the habit of thrift in the population and mobilize for productive purpose the amount of savings originating in this sector. Besides, for the mobilization of savings, it will be necessary to check and regulate the diversion of savings into unproductive investment such as real estate and inventory accumulation. Suitable techniques of borrowing must also be devised. For example, bonds issued by the Government should be adjusted to the preferences of the general public: Bonds of large denomination and long maturity may be offered to the institutional investors, whereas those of small denomination and short maturity may be reserved for the non-institutional investors. If properly devised and conducted, small savings campaign can mobilize a sizable amount of resources.

Further, the mobilization of the hoarded gold and jewellery through government programmes constitutes a highly desirable source of development finance. Of course, suitable techniques of public borrowing for the mobilization of these resources have to be evolved.

Foreign Capital

The importance of foreign capital in accelerating economic development is undoubted. But which are the main sources of foreign capital? In the 19th and

the early 20th centuries, most of the foreign capital which went to develop the resources of the developing countries was private capital investment either of the equity type or the portfolio variety. In more recent times, though private foreign capital continues to be invested largely in primary production for the purpose of export to the investing countries, yet, in its size, it has been far eclipsed by the flow of capital either on government-to-government level or through borrowing from international financial institutions like the International Bank for Reconstruction and Development (known as the World Bank) and its affiliate the International Development Association. In India's five-year plans, for example, a great deal of reliance has been placed on government-to-government long-term borrowing (through the Aid-India Club comprising several capital-rich countries) and on loans from the World Bank.

We discuss below some important aspects of foreign capital at some length.

Forms of Foreign Capital. From the point of view of the country receiving foreign capital, it can take three forms: (a) Loans, (b) Direct Investments and (c) Grants and Aid. These three forms of foreign capital differ in respect of impact, the benefits they confer on the receiving country and the strains they produce in its economy. For instance, loans involve regular servicing costs in the form of interest payments and amortization and grants and aid constitute a net gain if no political strings are attached thereto. Direct investment involves the transfer of resources in the form of dividends and profits. Direct investment takes the form of equity capital, i.e., share capital. This means buying of shares by the entrepreneurs or firms of one country in firms of another country. It involves foreign control of the firm in which investment is made. Reinvestment of profits in the firms or companies of the receiving country by the foreign capitalists is also called direct investment. Private foreign capital also takes the form of loans which is called portfolio investment as distinguished from direct investment. In portfolio investment, capital is transferred from one country to another through the purchase of bonds and debentures of a firm or company in the borrowing country.

Trends in the Flow of Foreign Capital. Before the First World War, there was tremendous flow of foreign capital to the needy countries from the rich countries like the U.K., Germany and France owing to the need for securing key raw materials from abroad, the lure of fabulous profits and owing to the legal and economic advantages enjoyed by the owners of capital. However, during the inter-war period, the outflow declined considerably on account of the unsettled political and economic conditions and the Great Depression of the early 1930's

which created balance of payments problems resulting in exchange control and exchange restrictions. But since the Second World War, there has been significant revival in the flow of foreign capital. In seven years 1946-52, the net outflow of private long-term capital from the industrial countries amounted to \$11 billion and in four years from 1955-58, it exceeded \$17 billion.² The emergence of the West European countries and of the U.S.A. as lenders and the establishment of the World Bank largely contributed to this revival. In recent years, the flow of foreign capital from governments and international agencies has increased very rapidly (from an annual average of \$2 billion in 1954-56 to \$3.3 billion in 1958-59).³

The basic reason of the outflow of private capital is the prospect of profits in the receiving countries as compared with the level of profits at home. So far as the under-developed countries are concerned, the marginal productivity of capital (hence the rate of profit) is expected to be higher than the lending countries owing to the existence of rich natural resources lying untapped and the cheapness of labour. Against these, however, have to be set off the low productivity of labour, inadequate economic overheads or infrastructure and the lack of other sources of external economies. Also, the economic and political conditions prevalent in the under-developed countries are not very conducive to any large inflow of foreign capital. Impediments arise out of procedural dilatoriness, red tape, bureaucratic delays and corruption. The spirit of nationalism manifesting itself in unfriendliness and sometimes hostility to the foreign investor also stands in the way. No wonder the response of the foreign investor to efforts made by the under-developed countries to woo foreign capital is poor.

For instance, in India, between 1948-53, the inflow of foreign private capital amounted to meagre Rs. 130 crores. During the Second Plan out of a total investment of Rs. 7,000 crores, the foreign investment was about Rs. 150 crores as against a target of Rs. 200 crores. In the Third Plan, an inflow of Rs. 300 crores was anticipated, which was less than 3 per cent of the total outlay, but the actual receipt was much less. Again in the Fourth Plan Rs. 300 crores was the targeted amount, the actual inflow did not exceed Rs. 100 crores.

However, an important recent trend is that the decline in the inflow of private foreign capital is being made up by contributions from foreign friendly governments and international agencies like the World Bank, International Development Association and the I.M.F. At the government level, the

2. Bright Singh, D.—*Economic Development*, p. 421.

3. *Ibid.*, p. 440.

transfer of capital is effected in the form of loans and grants, technical assistance and food supplies.

Economic Significance. Beyond doubt, the inflow of foreign capital has accelerated the economic growth of the under-developed countries in a number of ways:

(i) Foreign capital supplements domestic savings and harnesses them to secure a rapid rate of growth. It serves as a stimulant to additional domestic investment in the recipient country. By increasing the rate of capital formation in the country, it goes a long way in removing the capital deficiency which is the main hurdle in economic growth.

(ii) Foreign capital generally brings along with it technical know-how. By providing technological expertise it helps in building modern industrial structure in the receiving countries. In this way, it adds to their aggregate national product and per capita income which not only works towards removing their poverty but increases the rate of savings which in turn accelerates the process of their growth. In course of time, the vicious circle of poverty is broken and the beneficial circle of prosperity is set in motion.

(iii) Foreign capital provides valuable foreign exchange which is the desperate need of the developing economies. It is generally observed that, in the early years of development, the import bill of such countries goes on mounting because they have to import foodgrains, machinery and capital and essential industrial raw materials but their exports lag woefully behind. This creates balance of payments difficulties in the solution of which foreign capital proves a god-send.

(iv) Benefits also accrue from foreign capital to domestic labour in the form of higher real wages, to consumers in the form of greater supply of consumer goods, larger in quantity, better in quality and greater in variety and to the government in the form of higher tax revenues. The economy benefits through the realisation of external economies. Since foreign capital helps in building up economic infrastructure in the form of means of transport and communications, railways, roads, hydro-electric projects supplying irrigation and power, it undoubtedly results in acceleration of the rate of growth.

But there is the other side too. Foreign capital is not an unmixed blessing. Usually, there are political strings attached to foreign capital, either implicitly or explicitly. The receiving countries suffer a loss in independence in action or policy and even their sovereignty is threatened. Besides, the loans have to be repaid and the interest payments and amortisation put a very severe strain on the economy. According to the Union Finance Minister's statement made in Rajya Sabha on November 16, 1971, foreign private investment in India at the end of March 1970 stood at Rs. 1,298 crores. The remittance

of profits on foreign private investment amounted to Rs. 12 crores in 1969-70. All such payments add to the balance of payments difficulties.

Conclusion. Proper utilisation of foreign capital is the crux of the problem. It should be so utilised as to transform the economy into a self-reliant and self-sustained economy. Its ability to meet the service and repayment obligations will depend on the extent to which the economy is so transformed.

Profits of Public Undertakings

In a developing economy, where the scope of the public sector has been progressively expanding in the industrial, financial and commercial spheres, it is desirable that a large amount of resources should be generated and mobilized in this sector also. "No-profit-no-loss" basis of the price policy of the public undertaking should give place to a policy of reasonable profits on the output produced and sold. Similarly, state trading organizations conducting any domestic and/or foreign trade should suitably adjust their price policy to mobilize the resources in the form of trading profits.

In advanced countries, public undertakings contribute a sizable proportion of resources for economic development. In Soviet Russia, of course, 90 per cent of the public revenue is derived from the public undertakings (private undertakings there are practically non-existent). Even in the U.K., nationalisation of some industries has expanded this source of development. But in some countries of South Eastern Asia, this source of revenue has become very important because of state ownership of certain industries and state trading in some important commodities, e.g., rice trading in Burma.

In India, there is a very large number of public undertakings operating at present. After the initial period of pioneering losses some of them are now yielding handsome dividends. This is an expanding source of revenue available for economic development. The Fifth Five-Year Plan estimated that the Central and State undertakings would contribute Rs. 6,000 crores to its total outlay.

Deficit Financing

We have devoted a full chapter to deficit financing.⁴ Deficit financing, i.e., newly created money, is another source of capital formation in a developing economy. The danger, inherent in this source of development finance, is that it may lead to inflationary pressures in the economy. But a certain measure of deficit financing can be had without creating such pressures. As the aggregate real output increases under stimulus of development plans, new money has to be created to match this increased output. Further, in a developing economy, the demand for money increases as the monetized sector

of the economy expands at the expense of the non-monetary and subsistence sectors. New money has to be created to satisfy this increased demand for money. Besides, there exists some possibility of using deficit financing to utilise the existing unemployed and under-employed labour in schemes which yield quick results, so that the inflationary potential of deficit financing may be neutralized by an increase in the supply of output in the short time.

Disguised Unemployment

Another source of development finance and capital formation is to mobilize the saving potential that exists in the form of disguised unemployment. Surplus agricultural workers can be transferred from the agricultural sector to the non-agricultural sectors without diminishing agricultural output. The objective is to mobilize these unproductive workers and employ them on various capital-creating projects such as roads, canals, buildings of schools and health centres, bunds for controlling floods in which they do not require much capital to work with.

But how will these workers be fed? Previously they were subsidized by the productive workers. This must continue. For this, the Government will have to mobilize resources from the remaining productive workers. The consumption of these remaining productive workers must be kept at their former level. We have already discussed disguised unemployment in a separate chapter.⁵

Inflation and Forced Saving

Taxation, surpluses of public enterprises and borrowing are non-inflationary methods of resource mobilisation and are ideal methods for achieving economic growth with stability. But the under-developed countries are under strong political pressure to hasten economic development and for that purpose adopt ambitious plans of economic development. For the implementation of such big plans only non-inflationary resources are not enough. The gap may be too wide to be bridged by foreign aid or private investment. Hence resort to inflationary resource mobilisation become necessary. We have already mentioned deficit financing but deficit financing may not necessarily be inflationary when it results in increase in production of goods and services sufficient to neutralise its inflationary effect.

Inflation may provide resources for development in the following ways:—

(i) There is the forced saving mechanism of inflation. Rising prices due to inflation lower real wages and tend to increase profits when wages lag behind. Similarly, the real income of the farmer falls. In this way, income is transferred from those who have lower propensity to save to those whose

propensity to save is higher. Inflation thus acts as a 'disguised taxation'. 'Inflationary tax' on consumers and savers works to the advantage of investors and the government. Where the government acquires in this way real resources for development, people are forced to save. It is a hidden tax and evokes no opposition and the government is able to raise resources for development easily. This is its chief merit.

(ii) In the under-developed countries, the growth process is hampered by the existence of several rigidities and immobilities. Rise in prices and wages compel the workers to move from the traditional subsistence sector to the expanding industrial sector. In this way, labour and other resources tend to be optimally allocated and more fully utilised so that economic growth is promoted. There is no fear of agricultural production falling as a result of the movement of these workers because their marginal productivity there was zero or nearly zero.

The advocates of inflationary finance contend that a moderate degree of inflation is the logical concomitant of efficient economic mobilisation. But care has to be taken that it remains moderate and does not become hyper-inflation. Such inflation can be 'self-liquidating' as Prof. A. Lewis puts it. It will lead to increase in the output of consumer goods and bring down the prices. In this way, inflation will disappear. On the other hand, spiralling inflation has a tendency to go out of control. Organised labour will protect itself by adopting militant measures and succeed in getting wages and dearness allowances linked to the price index. The farmers clamour for higher prices of their produce and succeed in getting them. As inflation proceeds, commodities are preferred to money in an effort to evade the inflation tax. All such developments introduce serious distortions in resource allocation which more than offset the earlier gains. This is hyper-inflation.

The method of inflationary finance is considered wasteful as a method of raising the rate of saving. The net increase in saving is generally less than the decline in consumption. Those who are hit by inflation are forced to lower their consumption. This forced decline in consumption constitutes the potential for saving. The gainers from inflation i.e. those whose real income has gone up owing to rising prices find themselves with more income than before. They will divide this increase in income between consumption and saving according to their propensity to consume and save. The forced saving hypothesis assumes that the propensity to consume of the gainers from inflation is less than that of the losers. This means that the decline in consumption of the losers is greater than the increases in consumption of the gainers. Net result is an increase in saving.

Importance of Government's Role in Economic Development

In modern times, State participation in economic activity can hardly be a matter of disagreement. The free play of economic forces, even in highly developed capitalist countries, has often meant large unemployment and instability of the system. Hence, there is a considerable dilution of the laissez-faire principle and the governments are now called upon to intervene in economic fields which were considered sacrosanct. In these advanced countries, State intervention has been invoked to ensure economic stability and full employment of productive resources of the community.

But state action is all the more inevitable in under-developed economies. Here the state has to play a vital and ever-expanding role to accelerate process of economic growth. These countries are struggling hard to get rid of poverty and to attain higher living standards. In an under-developed economy, there is a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a stationary state of under-development equilibrium. The vicious circle of under-developed equilibrium can be broken only by a comprehensive government planning of the process of economic development.

It is obvious that a high rate of investment and growth of output cannot be attained in an under-developed country simply as a result of the functioning of the market forces. Even the operation of these forces is hindered by the existence of economic rigidities and structural disequilibria. Economic development is not a spontaneous or automatic process. On the contrary, it is evident that there are automatic forces within the system tending to keep it moored to a low level. Thus, if an under-developed country does not wish to remain caught up in a vicious circle of poverty, government must interfere with the market forces to break that circle.

In the initial phase, the process of development in an under-developed country is held up primarily by the lack of the basic social and economic overheads such as schools, technical colleges and research institutes, hospitals and railways, roads, ports, harbours and bridges. Provision of these overheads requires very large investments. Such investments will lead to the creation of external economies, which, in their turn, will provide incentives for the expansion of private enterprise in the field of industry as well as of agriculture.

Private enterprise will not undertake investments in social overheads, because the returns from them in the form of an increase in the supply of technical skills and higher standards of education and health can be realised only over a long period. Also, it will accrue to the whole society rather than to those entrepreneurs who incur the necessary large expenditure on the creation of such costly social overheads. Therefore, investment in them is not profitable from the standpoint of the private entrepreneurs, howsoever productive it may be from the broader interest of the society. This indicates the need for direct participation of the government by way of investment in social overheads, so that the rate of development be quickened.

Investments in economic overheads require huge outlays of capital which are usually beyond the capacity of private enterprise. Besides, the returns from such investments are quite uncertain and take very long to accrue. Private enterprise is generally interested in quick returns and will seldom be prepared to wait so long.

Nor can private enterprise easily mobilise resources for building up all these overheads. The State is in a far better position to find the necessary resources through taxation, borrowing and deficit-financing—sources not open to private enterprise. Thus, private enterprise lacks the capacity to undertake large-scale and comprehensive development

programme. Not only that; it also lacks the necessary approach to development.

The role of government in development is further highlighted by the fact that under-developed countries suffer from a serious deficiency of all types of resources and skills, while the need for them is so great. In these circumstances, what is needed is a wise and efficient allocation of limited resources. This only the State is best fitted to do through central planning, according to a scheme of priorities well suited to the country's conditions and needs. Until the country has attained the stage of self-sustained growth, the Government must make determined and conscious efforts to push the economy through the 'take-off' period of development.

Besides, the conditions in the under-developed countries are not conducive to rapid economic growth. "The tendency towards the formation of monopolistic organisations under the free enterprise system, the unpreparedness and reluctance on the part of entrepreneurs to make investments in schemes of collective value, the lack of attention to the long-run problems of the economy and too much concentration on the immediate prospects of profits, the absence of integration among the various sectors of the economy and the possibility of adverse economic results arising from uncoordinated economic decisions, constitute the major defects of the private enterprise system." ¹ A decisive role by the government is called for to rectify these defects and to overcome obstacles to economic growth.

GOVERNMENT MEASURES TO PROMOTE ECONOMIC DEVELOPMENT

In view of the peculiar circumstances in which politically, socially and economically the under-developed countries are placed, there is not only a great urgency about economic development but also an infinitely much greater effort is required to generate the forces of economic growth. This effort is obviously beyond private enterprise in such countries. Owing to adverse political, economic and social factors, these countries have been for long in a state of economic stagnation. They are now becoming painfully aware of the widening disparity between their economic condition and that of the advanced countries, which are getting richer everyday whereas they are caught up in the vicious circle of poverty. This necessitates a comprehensive set of measures to be adopted by the government not only to rouse them up from the state of economic slumber but to see them march quickly on the road of development.

1. Finer Herman, "The Role of Government," *Economic Development, Principles and Patterns*. Williamson, H.F. and J.A. Buttrick, 1954, p. 369.

The following are the principal measures, which are necessary for the government of an under-developed country to take in order to accelerate the process of economic growth.

Provision of Economic and Social Overheads

If economic growth is to be accelerated, it is necessary for the government to provide in adequate measure economic and social overhead facilities also called the overhead capital and services or infrastructure. Economic infrastructure includes transport facilities, e.g., railways, roads, harbours, airfields, etc., means of communications, e.g., postal, telegraph and telephone facilities, electric and even atomic energy, irrigation facilities, etc. The social overheads or infrastructure consists of educational institutions (schools, colleges and universities) both for general education and technical training, public health, and medical aid facilities, housing, water supply and other welfare schemes. "The availability of adequate overhead facilities brings about external economies to other industries, lowers their capital coefficient and by thus improving the efficiency of general investment, makes possible a more rapid rate of economic growth."²

The under-developed countries are woefully suffering from the lack of such facilities on account of which their rate of growth has been slow and tardy. Only the government can have the ability and willingness to make investments in these directions, where the private investor cannot hope to get any tangible return, and remove a big hurdle in the way of economic growth. Actually, the governments in under-developed countries are making large investments in the provision of overhead facilities. total public investment (1950-59), they have ranged from 54 per cent in Ceylon, (now Sri Lanka), 56 per cent in India, 66 per cent in Burma and 72 per cent in Thailand.³

Provision of Financial Facilities

Finance is the crux of the problem of development. We know that the under-developed countries suffer from scarcity of capital which is the greatest handicap in their economic growth. No doubt that their savings are meagre but even the meagre savings are not available for economic development. To mobilise these savings, a sound banking system is essential and other financial institutions are required to canalise these savings into investments and supply the credit needs of trade and industry. The government is to see that appropriate financial institutions are set up to meet the requirements of the entrepreneurs.

In India, for instance, the government took steps

2. Bright Singh, D.—*Economic Development*, p. 544.

3. United Nations, *Economic Survey of Asia and Far East*, 1960, p. 75.

to reform the banking system and put it on a sound footing. Fourteen major commercial banks were nationalised in 1969. In the agricultural sector to meet the short-term credit needs of the farmers, co-operative societies were set up and, for long-term credit, land mortgage banks or land development banks have been organised. Two funds were set up—National Agricultural Credit (Long-term) Operations Fund and National Agricultural Credit (Stabilisation) Fund. The former is meant to give long-term loans to State Governments to enable them to buy shares of co-operatives and to grant medium-term loans to co-operatives and long-term loans to land development banks and the latter fund to give medium-term loans to State Co-operative Banks to enable them to convert short-term loans into medium-term loans. Agricultural Refinance Corporation was set up to serve as a refinancing agency for agricultural credit and to give assistance for reclamation of land, development of special crops, mechanical farming and development of animal husbandry, dairy farming, poultry, etc. Small Farmers Development Agencies (S.F.D.A.'s) were established and Marginal Farmers and Agricultural Labour (M.F.A.L.) schemes were taken up. Agro-Industries Corporations have also been set up to give loans for the purchase of tractors and agricultural machinery.

In the industrial sector too, financial and other institutions were established to promote industrial development. To assist the small scale and cottage industries several boards were set up such as the Cottage Industries Board, All India Handicrafts Board, Central Marketing Organisation, Inventions Promotion Board, State Financial Corporations, National Small Industries Corporation, etc. For the large-scale industries were set up the Industrial Finance Corporation of India and the Industrial Development Bank of India. Unit Trust of India was created to promote investment. National Industrial Development Corporation was established to grant special loans for the rehabilitation and modernisation of cotton textile mills and jute mills. Industrial Credit and Investment Corporation was set up to assist the creation, expansion and modernisation of industrial enterprises in the private sector. For re-lending facilities Refinance Corporation for Industry was set up. Export Credit and Guarantee Corporation was created to insure against export risks, financial and political, and to furnish guarantees to banks to assist exporters to secure liberal credit facilities. This gives some idea as to what a government in an under-developed country can do in the matter of provision of financial facilities.

Institutional Changes

Out-moded institutions and legal and social structure too stand in the way of economic develop-

ment of the under-developed countries. Lot of reform and reorganisation is essential to initiate and accelerate the process of growth. These institutional changes include land reforms like the abolition of the feudal system, tenancy reform to give security to the tenants and fix fair rent payable by them, ceilings on land holdings, community development projects in the rural areas to promote self-reliance and local leadership, etc. In the sphere of trade and industry, government encourages small industries and regulates and controls the big corporations to prevent the creation of monopolies. To improve labour efficiency, technical institutions are set up, social security schemes are introduced and housing schemes and welfare activities are undertaken. Producers' co-operatives are set up.

The state also regulates relations between labour and capital to maintain industrial peace by means of labour legislation to increase output and minimise losses. The government also promotes marketing to enable the producers to get a fair price for the products.

These measures accelerate economic growth by improving the organisation of production and building up non-material or intangible capital which assist productive effort as much as material capital.

Direct Participation

In addition to the measures mentioned above, the governments in underdeveloped countries directly participate in economic enterprises to assist private enterprise or to set for them a model to follow. In pursuance of the Industrial Policy Resolutions of 1948 and 1956, the Government of India has set up huge public undertakings in diverse fields like the steel plants, heavy electricals, heavy engineering, machine tools, fertilizers, oil refineries, antibiotics, etc. The profits of these undertakings are available for use in economic development plans. The government mainly confines itself to basic, heavy and key industries which help other industries, whereas the private sector operates in manufacturing and consumption goods industries.

Indirect Measures

Besides promoting economic development directly as explained above, the governments of under-developed countries promote economic growth of their countries indirectly too. The indirect measures relate to the adoption of economic policies which may be conducive to economic growth. These policies mainly are: monetary policy, fiscal policy and commercial policy. The objective of monetary policy is to control and regulate credit to ensure growth with stability. Credit is liberalised to help industrial and business enterprise, but when it is felt that too easy monetary conditions are hampering

growth, credit curbs are applied to check speculation and inflation. As for fiscal policy, taxation is used as an instrument for checking consumption, increasing savings and for preventing investment in undesirable channels and canalising them into desired directions so that economic growth is accelerated and not slowed down. Commercial policy is so designed as to check undesirable imports and promote exports. Foreign exchange dealings are regulated and exchange control instituted to prevent balance of payments position getting out of hand.

Conclusion

Thus, the government in an under-developed country has a vital role to play in stepping up its rate of growth directly by participation in economic activity, by providing economic and social overhead capital or building the necessary infrastructure, by creating financial institutions and by moulding the social structure and adapting the legal framework to the tasks of development and indirectly by pursuing suitable monetary, fiscal and trade policies.

Rationale of Public Sector in Economic Development.

We have referred above to the direct participation of the government in industrial enterprises with a view to promoting economic growth in the country. This means the launching of public sector enterprises. The rationale of the public sector lies in a large number of imperatives of development which may now be dealt with at some length.

The *raison d'être* or a rationale for the public sector undertakings is to be found in the inadequacies or weaknesses of the price system. The price system, as it actually functions, is far from being an ideal mechanism for the efficient running of an economy—especially, in terms of the three vital considerations of resource allocation, income distribution and employment.

(i) **The Compensatory Role.** The participation of the public sector undertakings in the economic activities is called for when it has a compensatory role to perform. The compensatory role, in turn, would be necessitated when there is a need to compensate for the deficiencies or shortfalls of the price system.

When the public sector assumes a compensatory role it serves to provide a substitute for the private sector of the economy. In fact, the public sector enterprises, then, perform the functions of a corrective activity or device. This in itself provides a rationale for the participation of public enterprises in economic activity.

In the same way, where the price mechanism hinders the full utilisation of resources due to the existence of monopolistic tendencies or externalities, the public sector has to step in to remedy the

situation. The public sector, in such cases, makes up for the deficiency by its direct participation in the productive and distributive activities of the economy.

Again, the compensatory role of the public sector becomes necessary where the price system left to itself, fails to achieve some socially desirable objectives. For instance, if education, health and other welfare activities were in the purview of the private sector, it will lead to both inadequate quantity and inequitable distribution of the service. The public sector can compensate for these deficiencies by undertaking these activities under its own aegis.

(ii) **The Adjunctive Role.** The price system may not only fail to function satisfactorily, but also in a number of situations it may fail altogether. And when the market mechanism fails to operate, certain goods and services would not be produced in the economy. Under such a situation, it is necessary for the public sector to undertake to produce these goods and services. These public activities would, in effect, be an addition to the overall level of economic activity of the economy. That is how an adjunctive role is assumed by the Public sector undertakings.

In general, the public sector performs its adjunctive role when it aims at producing 'public goods' or what is the same thing satisfying 'public (or social) wants'. The market mechanism fails to register the true preferences of individuals for public goods (e.g., roads, bridges, courts, police, etc.) Since no private enterprise can afford to undertake activities aimed at satisfying 'public (or social) wants', the public sector has necessarily to step-in in this direction.

Role of Public Enterprises in Economic Development

It is now recognised that in the underdeveloped countries, the vicious circle of under-development can be broken only by a bold intervention by the government in the form of public sector enterprises.

The role of public enterprises both in accelerating development and realising the avowed social objectives of underdeveloped countries can be brought as under:

(a) Achieving Socialistic Pattern, (b) Building Industrial Base, (c) Capital Formation, (d) Optimum allocation of resources strategies, (e) Balanced and Unbalanced Growth, (f) Balanced Regional Development, (g) Achieving Social Objectives.

Some other ways in which public sector can promote economic development are as under:—

- (i) Diversification of economic structure.
- (ii) Enlargement of employment.
- (iii) Bridging the entrepreneurial gap.
- (iv) Generating foreign exchange earnings.
- (v) Supporting private enterprise.
- (vi) Bulwark against maleficent tendencies.

Part II

Development Planning

79

ECONOMIC PLANNING: MEANING AND TYPES

Popularity of Planning

In the previous part, we discussed the theory of economic development. But economic development has been closely linked with planning. Economic planning has become a craze in modern times especially in underdeveloped or developing countries. The idea of planning acquired a tremendous support after the end of World War II when advanced but disrupted economies had to be rehabilitated and the under-developed economies were fired with the ambition of rapid economic development. This idea was not taken up kindly in some countries by some people. It was perhaps due to the fact that planning came to be most actively associated with socialist economies. Hatred of socialism was transferred to planning too. But such unreasoned opposition to planning has now almost vanished. On the other hand, remarkable achievements of Nazi Germany and Soviet Russia popularised the idea of economic planning.

Even in capitalist countries, where the economy is governed and directed by market incentives, planning is being practised more or less in one or the other sector of the economy. Planning has become popular owing to the basic defects of capitalism and free enterprise and owing to the realisation that, unless a free enterprise economy is regulated and controlled, it would not ensure stable growth or maximise social welfare. That is why about 20 per cent of the American economy is planned, because to this extent current resources are controlled and disposed of by the State. Although the distinction between planned and the unplanned economy is there, yet planning has been universally accepted and the planned sector almost everywhere is expanding.

For the under-developed countries, desirous of accelerating development after achieving political freedom, planning is a *sine qua non* of progress. As

Robbins says, "planning is the grand panacea of our age". It is no longer a forbidden fruit. To quote Lewis: "There are no longer any believers in laissez-faire except on lunatic fringe." The popularity of planning may be summed up in these words: "The change in ideology of the people, their growing social consciousness and the realisation of the social and economic evils of maldistribution of income and wealth have drawn attention to the need for directing economic growth in a manner that would bring about not only increased production but would ensure more equitable distribution of the larger output; egalitarian measures have, therefore, been called for, and regulation of economic mechanism has become necessary to ensure social justice and equality."¹

Although both advanced capitalistic countries and the under-developed countries have adopted planning but there is this difference between them: in the former it is corrective planning to ensure economic stability, in the latter it is developmental planning to secure rapid growth.

Meaning of Planning

There is lack of unanimity among economists and political thinkers as to what planning means. No precise and universally acceptable definition can be offered. The idea underlying planning is a conscious and deliberate use of the resources of the community with a view to achieving certain targets of production. The State, through a planning authority, takes the responsibility of planning. It represents a complete break from the policy of laissez-faire.

Thus, Prof. H. D. Dickinson defines economic planning as "the making of major economic decisions—what and how much is to be produced and to whom it is to be allocated by the conscious decision of a determinate authority, on the basis of a

1. Bright Singh, D.—*Economic Development*, p. 557.

comprehensive survey of the economic system as a whole." ²In the words of the Second Five-Year Plan of India, economic planning is "essentially a way of organising and utilising resources to maximum advantage in terms of defined social ends. The two main constituents of the concept of planning are: (i) A system of ends to be pursued, and (ii) knowledge as to the available resources and their optimum allocations." ³Thus, planning is a technique for achieving certain self-defined and pre-determined goals laid down by a central planning authority.

The idea of planning will be clear by drawing a distinction between a planned economy and an unplanned economy.

Distinction between Planned and Unplanned Economy. The unplanned economy relies on market mechanism for the utilisation of the community's resources for productive purpose. The market mechanism interprets consumer's preferences to the producer through the medium of higher prices and promise of higher profits. A planned economy, on the other hand, represents a much more determinate organisation of resources and specifying goals to be achieved and the commodities to be produced. The State is vested with the necessary powers to pursue these goals and exploit the resources along the pre-determined channels in conformity with the goals already fixed.

Thus, the main implications of planning are:—

- (a) Formulation of objectives or goals;
- (b) fixing targets to be achieved and priorities of production for each sector of the economy;
- (c) mobilisation of the financial and other resources required for the execution of the plan;
- (d) creation of the necessary organisation or agency for the execution of the plan; and
- (e) creating assessment machinery for assessing the progress made.

It is immaterial whether there is public ownership and/or control of resources or not, although public ownership and control would be more conducive to effective planning. State initiative and State regulation and control are, however, essential for successful execution of a plan. Robbins says: "Planning in the modern jargon involves government control of production in some form or other." A central economic authority regulates output, prices and costs.

In the words of Mrs. Barbara Wootton, "Planning may be defined as the conscious and deliberate choice of economic priorities by some public authority." But the public authority must also carry out

these priorities through the agency of the State organs.

Thus, planning, in short, may be defined as conceiving, initiating, regulating and controlling economic activity by the State according to set priorities with a view to achieving well-defined objectives within a given time.

FORMS OF PLANNING

Authoritarian and Democratic Planning

The type of planning that has been done in Soviet Russia, China and other socialist countries is authoritarian planning and that in India and other democratic countries is democratic planning. In authoritarian planning, the government is the sole centralised agency which draws the plan and implements it. It is more comprehensive, systematic and rigid—and is more efficient. In democratic planning, the plan is prepared by an expert body called the planning commission, which is outside the government or the executive and it is finally approved by legislature which represents the people. It is based on the system of free enterprise, but economic activity outside the public sector is sought to be regulated and guided indirectly by providing incentives for investment through fiscal and monetary policies.

General and Partial Planning

Several other varieties of planning are now known to the students of Economics. There is general planning in which a comprehensive and integrated plan is conceived, initiated and executed by a central authority. The plan covers all aspects of the economy and the central authority completely controls the investment and utilisation of resources.

As against general planning, there is partial planning, a sort of piece-meal planning in which the plan covers only some important sectors of the economy. Strictly speaking partial planning is no planning.

Functional and Structural Planning

Then again, planning may be attempted within the existing socio-economic framework or it may seem to change the existing order radically. The former is known as **functional planning** and the latter **structural planning**. Functional planning assumes that planning is possible even in a capitalistic economy, whereas advocates of structural planning think that planning and capitalism are incompatible. Quite respectable opinions have taken sides on this question. For instance, Dr. Ludwig Von Mises is of the view that "planning and capitalism are utterly incompatible." On the other hand Professor Landauer holds the opinion that planning and capitalism could be reconciled. We are inclined to

2. Dickinson, H.D., *Economics of Socialism*, 1939, p. 41.

3. Government of India, *First Five-Year Plan*, 1951, p. 7.

agree with the latter view and hold that even capitalist countries can have a measure of planning and benefit from its technique in order to carry the economy forward on the road of economic progress or eliminate serious imbalances in the economy.

Planning by Inducement and Planning by Direction

Sometimes the States try to achieve objectives of planning in an indirect manner. There is private enterprise throughout the economy and market mechanism is in full operation. The State just offers certain inducements and incentives. This is what a predominantly capitalistic economy like the American economy would do. As against induced planning or indicative planning, there is compulsory planning or planning by direction under a central directing authority.

Indicative Planning. Planning by inducement is often referred to as indicative planning. In this type of planning, the planner either subsidises production or controls prices, if it is intended to increase the consumption of a commodity. The first acts on the supply side and the latter on the demand side. Cheaper price is an inducement for the consumer and subsidy an inducement for the producer. This is planning through the market mechanism. The citizen wants freedom of choice in consumption. This freedom exerts pressure for free adjustment of production to consumption. Similarly, the worker demands freedom to choose his own job. This means that besides consumers' market there must also be a labour market. This leaves a narrow sphere for State control.

The basic idea is that the market controls the entrepreneur and State can control the entrepreneur by controlling the market. The State tries to manipulate the market by means of incentives and inducements through price fixation, taxation and subsidies. The government seeks to influence economic and investment decisions by offering incentives to entrepreneurs via fiscal and monetary policies but does not control or regulate the functioning of the economy directly. Planning by inducements avoids swollen bureaucracy. Thus, it is planning by persuasion rather than compulsion. There is freedom of enterprise, freedom of production and consumption subject to some regulation or control by the state.

However, immobility of resources imposes serious limitations on planning by inducement. This immobility creates shortages which cannot be eliminated merely by price control and rationing. Measures have to be taken not only to distribute supplies equitably but also to augment supplies. There are writers who are not prepared to consider indicative planning as planning in the real sense of the word. According to them, there can be no planning without direct orders or directions so as to compel economic activities to conform to the plan programmes and objectives.

The merits of indicative planning are: (a) Consumer's sovereignty remains intact; (b) there is freedom of enterprise; (c) it is flexible; (d) it is democratic.

As against these merits, there are some demerits too: (a) It fails to achieve the objectives of planning or targets of production; (b) the private entrepreneurs care more for profit than for the growth of the economy; (c) the fiscal and monetary policies of the government are not so successful in the underdeveloped countries; controls lead to black markets. (d) the producers may not find the incentives offered by the state attractive enough to follow the state guide-lines. The disincentives for the consumers may not be deterrent enough to curb wasteful consumption; (e) the working of the market forces fail to bring about proper adjustment between demand and supply and thus create imbalances in the economy.

As Prof. Dobb observes: "Without large public sector and large government investment the plan targets may remain pious hopes that are unrealised in practice."

Planning by direction implies minute and detailed instructions being given both to producers and consumers. A list of all commodities to be produced with the quantity of each has to be prepared as well as a separate list for each of the complements and substitutes. Planning by direction is very comprehensive. It covers the entire economy. There is complete concentration of economic authority in the state. There is one authority which is in sole charge of planning, directing and execution of the plan in accordance with pre-determined targets and priorities. Only planning by direction can guarantee the success of the plan, otherwise the targets would turn out to be mere pious wishes. This means that the economic plan should have at its back the full authority of the state not merely in planning but also in its implementation or execution. As Dr. Oskar Lange observes, "With regard to the socialist sector the national plan represents a binding directive. The targets of the national plan and its financial provisions represent orders to be carried out of the various ministries and the enterprises subject to them. They are duty bound to carry out the directives of the plan."

Planning by direction suffers from certain shortcomings: (i) It is undemocratic since the people are ignored all along. It is bureaucratic and totalitarian and, as such, involves the treatment of human beings as mere pegs in a big bureaucratic machine. There is no economic freedom. Rationing and control result in black marketing and corruption. (ii) Owing to the complexity and many-sidedness of modern economic system, planning by direction does not yield satisfactory results. It is too formidable a task. No person or body of persons can perform this task satisfactorily. (iii) There is bound

to be shortage of some and surplus of other commodities. (iv) Besides, this sort of planning is bound to be inflexible. The plan once prepared must be adhered to, no part of the plan can be altered affecting the whole plan. (v) The fulfilment of the plan cannot be anticipated, because conditions keep changing. Black markets emerge to overcome the imperfections of the plan. (vi) Planning by direction also leads to excessive standardisation which impinges on consumer's sovereignty. (vii) It also involves huge administrative costs—elaborate censuses, numerous forms and army of clerks.

As Lewis remarks, "When government is doing only a few things we can keep an eye on it, but when it is doing everything it cannot even keep an eye on itself." These are a few difficulties or shortcomings of Planning by direction. But the choice between these two types of planning is determined by the system of government prevailing in the country. A democratic government adopts indicative planning whereas a socialist state will adopt planning by direction.

Centralised Planning vs. Decentralised Planning

Some other forms of planning may be (a) centralised planning and (b) decentralised planning. In the case of the former, planning is done by a central authority. It is done from the top. Each citizen, producer or consumer, has simply to carry out the instructions or the job or duty assigned to him. In the case of decentralised planning, however, we plan from the bottom. For instance, each village panchayat may be asked to prepare a plan for the economic development of the village and each industry may be asked to prepare its own plan. Out of these plans, an integrated plan may then be evolved for the country as a whole.

Physical and Financial Planning. Here we come to the question whether we fix the size of investment in terms of real resources which is known as physical planning or in terms of money which is known as financial planning. Ultimately, however, financial resources will have to be translated into real resources for money as such serves no purpose. If adequate finance is not available, it can be created through deficit financing. In underdeveloped countries, there always exist unutilised or under-utilised resources, for instance, uncultivated land, unemployed labour, hoarded wealth, etc. These resources can be mobilised by "creating" money.

In the case of financial planning, the planners determine how much money will have to be invested in order to achieve the pre-determined objectives or targets. Total outlay is fixed in terms of money on the basis of growth rate to be achieved, the various targets of production, estimates of the required quantity of consumer goods and the various social services, expenditure on the necessary infra-

structure, etc., as well as revenue from taxation, borrowings and savings. (The financing of economic development has been discussed in an earlier chapter No. 77). This money is then used to mobilise the required resources. There has thus to be an integration between physical planning and financial planning. Indian planning has been mostly financial planning although some targets have been set in concrete and real terms, e.g., the output of food-grains.

A merit of financial planning is that it facilitates adjustment between demand and supply. As India's Second Five Year Plan States, "The essence of financial planning is to ensure that the demands and supplies are matched in a manner which exploits physical potentialities as fully as possible without major and unplanned changes in the price structure".⁴

Finance holds the key to the success of a plan. If the country is able to raise adequate financial resources, the success of the plan is assured. But failure to raise the required resources will spell its failure. It will not be able to achieve the targets set out for it.

Limitations of Financial Planning. Financial planning has its own limitations: (a) An attempt to raise taxes to too high a level will adversely affect the capacity of the people to save which may hamper the development process. (b) Owing to smallness of organised money sector and the existence of a larger non-monetised sector, the estimates of financial resources may go wrong. Even the physical targets may be upset. Imbalances between the monetised and non-monetised sectors may result in shortages and in inflationary pressures. Hence financial planning is more suitable for sector planning than for over all planning. (c) Financial planning may not provide for the expansion of employment opportunities at a scale so as to absorb the new entrants to the labour market. Hence people's needs both for work and employment may remain unsatisfied.

Physical Planning. In physical planning, the planning authority has to work out how much land, labour, materials and capital equipment will be required to implement the plan and achieve the targets set out for it. Physical planning makes for concreteness in planning. As is stated in India's Second Five Year Plan, physical planning "is an attempt to work out the implications of the development effort in terms of factor allocations and product yields so as to maximise incomes and employment".⁵ It is an input-output analysis. It implies proper evaluation of the relationship between investment and output. In physical planning, the planners have to determine not only the

4. p. 16.

5. p. 14.

amount of investment but also work out its composition in terms of the various goods and services required to obtain a certain increase of output of product. For instance, it has to be worked out as to how much of cotton, coal or electric power and other ingredients will go into an output of 1,000 metres of cloth. That is how calculations have to be made for each type of goods to achieve the targeted quantity. In this way, planned increase in the output of various goods is matched with the amounts and various types of investments. Financial planning is only a means to achieve the various targets laid down in the plan.

Thus, in physical planning, we make an overall assessment of the available real resources like raw materials, manpower and capital equipment and devise ways and means to mobilise them in amounts sufficient to enable us to achieve the various targets of production. These targets are laid in physical terms, e.g., so many tons of steel, foodgrains, coal, sugar and so many million metres of cloth, etc., in agricultural and industrial sectors and also for economic overheads like roads and rail kilometrage, etc., or so many million jobs to be created, so many doctors and engineers to be trained and the number and type of educational institutions, and so on. But the various targets have to be properly matched and balanced. The test of the soundness of planning lies in the avoidances of imbalances, stresses and strains of any type in the economy.

Limitations of Physical Planning. It is not to be understood that physical planning is a straight and simple affair and presents no difficulties. Rather, there are formidable difficulties in the way: (a) In the under-developed countries there is statistical blackout so that adequate and reliable statistics regarding the various types of real resources are lacking. It, therefore, becomes really difficult to lay down with any degree of certainty the targets. (b) To build up a sound sectoral balance is also a tight-rope dance. That is why when the plan is being implemented all sort of stresses and strains, bottlenecks, shortages and gluts and inflationary pressures appear to thwart the planners' effort. (c) Physical planning is not enough to prepare a sound plan for economic development. It has to be supplemented with financial planning. If this is not done, the economic plan will go down against financial rocks. Lack of adequate financial resources has been a major cause of the failure of planning in India.

Thus, both physical and financial planning are necessary to assure the success of the plan. They are complementary to each other just as the right and left legs are needed for walking. There has to be a proper balance between the two. Both techniques must be integrated in the development process.

Conclusion

We have in the world today the above main types

of planning or their permutations and combinations. In Soviet Union and China there is general, structural and directional planning. In Nazi Germany and Fascist Italy, planning was general and directional. In the U.S.A. and the U.K. whatever planning is there it is partial, functional and by inducement. In India it is general and partly structural and a combination of planning by inducement and planning by direction. Also, physical and financial planning go side by side.

Case for Planning

An unplanned economy is like a ship moving rudderless on uncharted seas with no fixed destination and unlikely to reach it if there be any. Such an economy works blindly and haphazardly. It caters for the rich and makes them still richer. It ignores the real wants of the people and fails to promote general well-being. It is the profit motive rather than service of the masses which is the mainspring of economic activity in such an economy. How it operates is no guarantee of economic progress for the less developed economies. The economically advanced countries may not feel enamoured of the idea of planning but for the under-developed economies it is a stark necessity as economic development is now regarded as imperative. Majority of the under-developed countries realise very clearly that they must develop economically and that too very soon.

As Galbraith says, "There is much that market can usefully encourage and accomplish. But the market cannot reach forward and take great strides when these are called for. As it cannot put a man in space so it cannot bring quickly into existence a steel industry when there was little or no steel making capacity before . . . To trust the market is to take an unacceptable risk that nothing or too little will happen."⁶ It is planning alone which can guarantee quick economic growth in the under-developed countries. This explains why there is a clear and pronounced swing of opinion in favour of planning.

We shall now put forward a few arguments for economic planning. Some of these arguments are in favour of planning in general for all countries and some of them apply with a special force to under-developed economies:

(i) Planning is advocated on the ground that the **judgment of the State is superior** to that of the citizen, however wise and able he may be. As Arthur Lewis remarks, "The state now claims to know better than its citizens for how many years they should send their children to school, between what hours they should drink, what proportion of income should be saved, whether cheap houses are better than cigarettes, and so on." Economic development

6. Galbraith, John Kenneth—*Economic Development in Perspective*, p. 29.

is a more serious matter and should not be left to the individual entrepreneurs. The State represents the accumulated wisdom of centuries and provides talent and experience beyond the capacity of individual and isolated businessmen. Planning by collective action is indispensable if a country is to develop economically on the right lines and develop at the desired speed.

(ii) Planning also becomes necessary for **equitable distribution of economic power**. The price-mechanism rewards people according to the resources they possess but contains in itself no mechanism for equalisation of the distribution of those resources. There is no wonder, therefore, that there are wide gaps between the 'haves' and 'have-nots' which seriously offend against sense of social justice. Shocking economic inequalities are a marked feature of an unplanned economy. Inequalities result in heart burning and social tensions. They also paralyse some of the ablest members of the society. Reduction of inequalities in income, wealth and economic opportunities is, therefore, now the avowed aim of modern welfare States and it is impossible of achievement without the instrument of planning. In the absence of planning, inequalities will not only be perpetuated but accentuated from generation to generation.

(iii) It has been seen that labour legislation alone cannot protect labour and harmonise wage relations when market mechanism is permitted to operate freely. A planning authority must step in to so regulate the economic growth of the country as to ensure to the actual workers the fruits of their labour. If there was perfect competition and full employment, the price mechanism, shorn of its imperfections, would have afforded due protection of labour rights. But this is a big 'IF'. The State is a more effective guardian of labour rights than self-adjusting and automatic economic forces. By proper planning, it will be possible to provide perfect social security to all workers.

(iv) Planning has also proved to be a powerful instrument for eliminating instability which is necessary concomitant of free market economy. Private enterprise left to itself would produce trade cycles, unemployment and misery. As Barbara Wootton remarks, "the progress of an unplanned capitalist economy has always been liable to interruptions from the tendency of the system to fall over its own toes, from a certain continued instability in its gait." It is now generally agreed that planning of economic activity goes a long way in smoothening the violent oscillations and swings in business, thus preventing undeserved gains and undue hardships. It is on this ground that planning is advocated even for developed and advanced economies. These countries may not need any further economic development; but they certainly need a mechanism which would prevent violent ups and downs in the

movements of business activity and smoothen the course of business. In the last thirties, every country suffered from Depression except Russia, which was a planned economy.

(v) Again, it is planning alone which can ensure that the terms of **trade remain favourable** to a country. The volume and direction of foreign trade in a country admittedly plays a very important part not only in economic development but also in determining the level of general well-being in a community. But handling of foreign trade by the market has proved utterly inadequate. Foreign trade must be thoroughly planned, if fruits of economic development are not to be thrown away. This aspect of economic development has been paid special attention by planners everywhere.

(vi) Without the aid of planning no country can **cope with major economic changes**. Such changes, e.g., industrial revolution or rationalisation movement, are bound to turn the economy topsy-turvy. The economic system may be thrown out of gear altogether. Private enterprise will feel helpless and stand simply aghast. The planning authority with its resources of men and money can meet all such situations and control the disturbing factors. Major changes can even be anticipated and provided against in good time. The market mechanism cannot move the resources in the desired directions in quantity and with speed which a major change may necessitate. Only a planning authority can eliminate bottle-necks. Under a free market economy, a few persons receive abnormally large incomes at public expense and the scarce commodities are unjustly distributed. Overproduction is a common phenomenon bringing suffering to the poor. A planned action to speed up the movement of resources at times of major changes is absolutely essential.

(vii) **Planning eliminates wasteful competition**. The merit of the free market lies in competition being perfect; but in actual life perfect competition is a rare phenomenon. At any rate, there is nothing in the market mechanism that establishes or maintains competition. Only State action can ensure fair competition. Hence, market economy can also be helped to function adequately with the positive support of the planning authority. Huge man-power need not be dissipated in distributional trades nor huge funds frittered away in advertisement and salesmanship. Planning can be combined with a market economy in various degrees. Only by means of planning by direction rather than by means of persuasion or inducement can an economy achieve a desired objective. That is the only way to direct economic life economically, wisely and safely.

(viii) Only a planned economy provides for **proper co-ordination and avoids unnecessary duplication** of staff and equipment. In an unplanned economy, millions of producers work in an independent and isolated fashion without bothering as to

what the other businessmen are doing. The cumulative consequence may be confusion and chaos. We might well question with Professor Dobb: "How could order emerge from the conflict of a myriad of independent and autonomous wills?" An unplanned economy, according to Lerner, is like "an automobile without a driver but in which many passengers keep reaching over to the steering wheel to give it a twist." It will be a miracle indeed if the automobile reaches its destination safely.

On the whole, therefore, economic decisions in an unplanned economy are likely to be irrational, shortsighted, self-frustrating and socially disastrous. A planning authority, on the other hand, can take farsighted decisions and produce a balanced economy. It can take an overall view, whereas in an unplanned economy each entrepreneur looks to his own interest and nobody bothers about the economy as a whole as a central planning authority can do. As Prof. Durbin remarks, "the general officers on the hill must be able to see more than the ensign in the line of battle."

(ix) Planning makes for **optimum utilisation of a country's resources**. A planning authority is able to lay down what is essential and what is non-essential activity, encouraging the former and sharply cutting down the latter. On the other hand, private enterprise is guided solely by the profit motive regardless of social benefits or evils. Only a planning authority can ban lipstick and face powder, otherwise valuable national resources will be directed towards the production of useless luxuries for the rich and starve the masses of the necessities of life. It is to the obvious advantage of a country to concentrate on the production of essentials and avoid wasting its resources on the non-essentials. As Professor Harris says, "Surely no well functioning planned society would allow expenditure of 3 billion on education, and 2 billion on social security, as in the U.S.A. and seven billion on alcoholic beverages."

(x) A planned economy will **prevent artificial shortages** being created by profit-greedy businessmen. By means of trusts, cartels, price agreements and market sharing they increase their profits at the expense of the society. The planning authority can smash such designs by positive action in favour of the community. It possesses enough power to ensure the working of the economy in a healthy manner in the best interest of all rather than for the benefit of the few.

(xi) By planning it is possible to **keep down or eliminate social costs** which usually take the form of industrial diseases, industrial accidents, overcrowding and insanitary conditions and cyclical unemployment. These social costs are the by-products of capitalism. Since planning extends the sphere of public ownership and control, the evils of capitalism are mitigated. Full co-operation of labour can be

secured and anti-social 'go slow' tactics rendered unnecessary resulting in increase in national output.

(xii) Planning also results in **higher rate of capital formation**. Private enterprise is more intent on immediate gain rather than future good. It takes a short-sighted view of things. On the contrary, the planning authority, as the custodian of the national interests, takes a farsighted view. It can look more to the distant future than to the immediate present. It is in a position to sacrifice petty present gains for the future substantial benefits. The surpluses of the public undertakings add to the capital assets of the nation instead of going into the pockets of private persons and spent on consumption goods. That is why under planning capital formation receives a great fillip.

Special Case of Under-developed Countries

The arguments given above apply to all countries at all stages of economic development. They largely take their stand on the failure of laissez-faire policy and its general abandonment. It is now realised that lack of co-ordination, recurrence of business cycles, economic inequalities, social parasitism, economic insecurity, wastes of competition, absence of industrial peace and huge social costs which characterise an unplanned economy, can be done away with by resorting to planning. An unplanned economy must act in an erratic and irrational manner.

But planning has a specially strong case for the under-developed economies. In their case, it is not merely necessary to maintain the country's economy in sound health and to ensure a rational and optimum use of the community's resources but also to speed up economic development. They are lagging behind in the race and they are keen to catch up with the advanced economies or at any rate reduce dependence on them as fast as possible. This impatience for accelerating economic development leads inevitably to economic planning. The achievements of the Russian and Chinese economies under planning serve as an example.

The private enterprise in India has not taken India any far on the road of economic progress. It has left untouched and undeveloped some of the vital sectors of the Indian economy. The entrepreneurial ability is lacking in India or exists only in an insignificant measure. The Indian entrepreneurs take up hackneyed lines and give no evidence of innovation. They are more intent on rich quick methods and pursue speculative profits rather than long-term industrial development. They have been attracted more by commerce than by industry. In such countries, it becomes necessary for the State to intervene and provide the right type of entrepreneurship to bring about economic development.

Even in advanced countries the edge of price-mechanism has been blunted. It has failed to

function efficiently on account of economic rigidities and structural disequilibria. But in the under-developed countries, intent upon accelerated economic development, little reliance can be placed on price-mechanism for the optimum utilisation of resources and for giving a right direction to the productive machine of the community. It will only function erratically, fitfully and irrationally. There will be no guarantee that the quality and quantity of production is what the nation needs. Much more positive action is needed to give right direction to productive activity. In order to speed up the rate of economic development, price-mechanism, as governing economic development, must go or its functioning confined to unimportant sectors of the economy like the purchase and sale of consumer goods. Only then, the under-developed countries will come out of the morass of poverty and economic stagnation. Only by planning can specific objectives be attained and targets of production achieved. At every five-year period, progressively higher targets can be fixed and effective means to achieve them adopted.

Capital formation and skill formation are of crucial importance for any stage of economic development. These two determinants of economic growth have a very tardy and unsatisfactory development in backward and under-developed economies. Planning is essential to build up these necessary elements of productive power. Planning authority can launch a vigorous savings drive and control and guide investment of the mobilised resources in the desired channels. Normally in backward countries, rich people prefer investment in land, housing property and jewellery. This sort of investment is no good for speedy economic development of the country. That is why Indian government has come hard upon the gold hoardings. Drastic measures have to be taken to take over hoarded wealth lying unproductively in lockers and private hoards in order to help capital formation. This can only be done under planning.

Voluntary savings can be supplemented by revenue surplus 'Disguised unemployment', which is a special feature of an under-developed economy, is another source that can be tapped. We have surplus labour in agriculture which represents disguised unemployment. Such labour can be withdrawn from agriculture and put to more productive employment. The State, in an under-developed country, can also resort to deficit financing and thus increase the financial resources available for economic development.

Even then foreign aid may become necessary. For planned economic development, foreign aid is readily made available. A country which has no plan and which may rightly be considered as going nowhere, cannot hope to secure foreign financial assistance, but planned economies can. Colombo

Plan and foreign aid given to Pakistan and India are the examples which can be cited. These are a few measures by means of which financial resources of a country can be built up under planning.

Glaring inequalities of wealth and income and of economic opportunities is another painful feature of under-developed countries. These inequalities can also be reduced through planning. Slogan of equality whips up the enthusiasm of the people and induces them to put in their best effort.

The demographic factor is another hindrance in backward countries which can also be overcome by planning. A country with increasing population must run fast in order to keep up its present position. Increase in national wealth is swallowed up by still many more mouths. There is no escape from planning in such countries.

The socio-religious attitudes of the people also call for an effective State action to make them act in a more rational manner. It is well known that social and religious institutions of India have hindered economic growth in the past. A planned programme is essential to neutralise the adverse effect of such obsolete notions and institutions.

The paucity of trained, competent and honest administrators in backward countries has also to be made up and calls for a planned endeavour.

Conclusion. These are some of the special problems which an under-developed country has to tackle. It is now already realised and universally admitted that these problems can be effectively tackled by planning and by planning alone. Planning in such countries is needed, above all, for accelerating economic development. There is need in such countries, as Galbraith says, not only for development "but an urgent demand that it should occur promptly."

Prof. D.R. Gadgil indicates the need for, and justification of, planning in these words, "Planning for economic development is undertaken presumably because the pace or direction of development taking place in the absence of external intervention is not considered to be satisfactory and because it is further held that appropriate external intervention will result in increasing considerably the pace of development and directing it properly. Planning seeks to bring about a rationalisation and, if possible and necessary, some reduction of consumption to evolve and adopt a long-term plan of appropriate investment of capital resources with progressively improved techniques, a programme of training and education through which the competence of labour to make use of capital resources is increased, and a better distribution of the national product so as to attain social security and peace. Planning, therefore, means, in a sense, no more than better organisation, consistent and far-seeing organisation and comprehensive all-sided organisation. Direction, regulation, controls on private activity, and increasing the

sphere of public activity, are all parts of organisational effort."⁷

Pre-requisites of Successful Planning

Although planning has been almost universally adopted but the development plans have not invariably been successful. The successful implementation of the plan requires the existence of certain preconditions:

(i) It needs a **strong and efficient government** and a clean administration to ensure the success of the plan. It is the government which has to get the plan prepared and it is the government machinery through which the plan is to be implemented. Weak and inefficient government and corrupt administration will distort everything and the plan will end in a smoke. Planning will be a farce and not a reality.

(ii) Besides a sound and strong political frame, the **economic organisation of the country should also be sound** and susceptible to rapid growth. That is why stress is laid on reorganisation of the agrarian system or restructuring of the industrial system of the country to ensure success of planning. In India, zamindari system had to be abolished and tenants given proper protection to make agriculture efficient. There was reform also of the banking system and of company organisation.

(iii) The **objectives of planning** should be well-defined and co-ordinated. Confused and conflicting objectives will lead the economy nowhere. For instance, it should be clear whether the plan aims at increasing output or at more even distribution of wealth and income or whether food self-sufficiency is the aim or rapid industrialisation is the objective.

(iv) For the successful implementation of a plan a **whole-hearted co-operation of the people** is essential. People are no dumb-driven cattle. Unless they co-operate nothing can be achieved. Coercion will merely lead to the adoption of subterfuges. It is necessary that the people at large should feel the urge for development and should welcome planning for development. They should have the necessary will to carry out the plan and behave in a disciplined and patriotic manner. They should be convinced that their self-interest coincides with the broad objectives of the plan.

(v) It is also very necessary for the formulation of the plan that the **necessary statistical data** should be available. The data should be adequate, up-to-date and correct. In the absence of correct statistical information, planning will merely be a leap in the dark.

(vi) Successful planning requires that reasonable and **appropriate targets** should be fixed. If the targets are too ambitious, their non-achievement

may cause frustration, and, if they are too low, the pace of development may be less than it can be. Similarly, it is necessary that since the resources at the disposal of the country are limited, a proper order of priorities should be laid down so that first things are tackled first. Only in this way, the limited available productive resources will be made the best use of.

(vii) To ensure success of planning, it is also very necessary, that there should be proper balance in the various parts of the plan or sectoral planning. If the plan does not provide for proper balances, bottlenecks or shortages and gluts are bound to appear and upset the plan.

(viii) **Proper development policy** is another desideratum of successful planning. Proper development policy should embrace careful survey of national resources, scientific research, market research, building up of adequate infrastructure (transport and communications, irrigation and power, etc.), provision of specialised training and educational facilities, suitable legal framework, assistance for the entrepreneurs, promoting saving and investment, and so on.

Conclusion. Very few under-developed countries fulfil the above conditions. That is why there is generally a wide gap between promise and performance. It is seldom that the targets are fully achieved. People get despaired and disgusted and planning loses credibility. If planning is to succeed earnest effort should be made to create the conditions which will be conducive to the success of planning.

Objectives of Planning

Planning is regarded as a panacea for all economic ills. It is, therefore, advocated for the achievement of a variety of objectives. It may be introduced for increasing national income or raising living standards or to fill up gaps in economic structure or to achieve self-sufficiency in food and raw materials or for bringing about rapid and adequate industrialisation or to correct serious imbalance or lopsidedness in economic development or to reduce inequalities and establish a socialistic pattern of society, and so on.

The objectives are not the same for all countries or the same for a country at all times. What precisely are the objectives placed by the planners before them depends on the stage of economic development, the nature of economic development, socio-economic conditions prevalent at the time and the requirements of a particular situation. It may be pointed out at the same time that all these objectives are inter-related and complementary rather than exclusive.

We may now say a word about some major objectives of planning:

7. Gadgil, D.R., *Planning and Economic Policy in India*, p. 88.

Achieving Full Employment. In economically advanced countries, the aim of the State is to provide full employment. All modern States have, in fact, underwritten employment. If they cannot provide work, they have to give doles which are demoralising and inadequate. Unemployment is the by-product of capitalism and is considered to be the biggest headache of a modern capitalistic society. If capitalism cannot be ended, at any rate, unemployment must be ended. In such cases, efforts of planned development are directed to those directions and those sectors where unemployment is found to exist. The State can redistribute labour and create work opportunities.

We in India may not be able to create conditions of full employment at any foreseeable future but we can certainly reduce the incidence of unemployment. For instance, India's Five-Year Plans have aimed at providing additional employment opportunities for millions of additional hands. The objective of British planning during 1945-57 was one of achieving full employment. Thus, creating employment or reducing unemployment may well be a major objective of planning.

Maximisation of National Income and Raising Living Standards. This is another laudable objective that the planners seek to pursue especially in poor countries like India. Over the First Plan period, our national income increased by 18 per cent, over the Second Plan by 21.4 per cent and over the Third Plan it was estimated to have risen by 20 per cent. The Fourth Plan aimed to raise it by 25-27 per cent. Only a concentrated and planned effort can raise national income. The unplanned development does not register any substantial progress in this direction, because the productive effort is diffused. Maximisation of national income has been the objective before planning authorities in the U.S.A.

Rapid Industrialisation. This is another important objective which the planners try to pursue. This objective assumes importance in countries which have been left behind in the race of industrialisation. South America had this objective before it while framing its development plans. India also aimed at rapid industrialisation in the Second Plan. It is realised that industrialisation makes more significant contribution to the raising of national income and to the solution of the problem of unemployment. Few countries can become prosperous by merely confining themselves to agriculture as India has been doing in the past. Economies predominantly agricultural are bound to remain backward. Rapid industrialisation is, therefore, a very desirable aim of planning.

Self-sufficiency in Food and Raw Materials. As a preparation for more systematic and intensive planning, it may be considered necessary first to make the country self-sufficient in food and essential raw materials. That would provide a solid and sound

base for the economy and prepare it for further building up. India, in the First Plan, concentrated mainly on agriculture. Dependence on foreign food is dangerous. The first duty of a nation is to feed its people. Political freedom may prove a farce without freedom from foreign food, especially when war clouds may be hovering overhead. It is understandable, therefore, that this objective may take precedence over other objectives when a Plan is being conceived.

Reduction of Inequalities. It is now realised that political equality is illusory unless it is accompanied by economic equality. Glaring inequalities of wealth, income and opportunities are shocking to the democratic conscience. Socialism is in the air; it has a very wide appeal in modern times. In poor countries, it is a painful sight that the masses of people should be on the border line of starvation, whereas a few rich people should be rolling in all conceivable luxuries. It is natural, therefore, that the planners, who are custodians of general welfare, should so shape their plans as to make the poor people less poor and the rich a little less rich, so that the gulf between the two is narrowed down as much as is humanly possible. The Indian planners have before them the establishment of socialistic pattern of society as one of the objectives.

Redressing Imbalances in the Economy It is sometimes found that the economic development in a country is lopsided, for instance, an economy may be predominantly agricultural. In India, nearly three-fourths of her people are engaged in agriculture, whereas nearly one-tenth pursue industry. This is an example of an unbalanced economy. To lend stability to the economy, it becomes essential first to reduce this imbalance. The planning authority cannot ignore this aspect of development.

It is not necessary that the planning authority should adopt only one objective. That perhaps may be possible for countries like the U.S.A. and European countries which are economically well advanced and they have not much to seek now. But the under-developed countries suffer from several shortcomings and the planners must pay attention to various important objectives simultaneously. Their plans are generally multi-objective. However, lest the effort should get diffused, it is necessary to confine to a few principal objectives at one time, choosing those which may be felt to be most essential in the context of the economic situation prevailing at the time.

Formulation and Implementation of a Plan

Let us now have some idea about planning techniques or methodology. The first step that the planners take is to lay down the broad objectives of the plan. As we have said before, the choice of objectives depends on the economic situation that the country may be facing.

The next step is to fix the size of the plan or to determine investment. Growth models are now available with the help of which it is possible to arrive at the investment figure. The planners make use of the concept of the capital-output ratio or capital co-efficient as the necessary tool. This tool is used to ascertain how much capital would be needed to secure a given unit of increase in income. For instance, if in a country capital-output ratio is 3 : 1 it will mean that an investment of Rs. 3 will add to national income of Re. 1. The capital-output ratio is ascertained by means of a careful study of the industrial situation. In India, the capital-output ratio for the First Plan worked out at 1.8 : 1 though the Planning Commission had assumed it as 3 : 1, for the Second Plan it was estimated at 2.3 : 1 and for the Third Plan at 2.6 : 1.

The Harrod-Dommar model is the most popular growth model. This enables us to determine the rate of investment (or saving-income ratio) necessary for achieving a certain rate of economic growth. In Indian planning, investment as a percentage of the national income rose from 6.6 per cent in the First Plan to 9.5 per cent in the Third Plan. The Fourth Plan aimed at raising it from 11.3 per cent in 1968-69 to 14.5 per cent in 1973-74. In the Western countries, the rate of capital formation ranged from 10 to 15 per cent, in Japan 16 to 20 per cent between 1913 and 1939, The U.S.S.R. has maintained a high investment rate of 15 to 20 per cent.

It is generally considered desirable that underdeveloped countries, intent on rapid economic development, must be prepared to invest 15 per cent of the national income. According to Prof. Rostow, a rise of investment from 5 to 10 per cent of national income is essential to enable a country to reach the 'take-off' stage. Since, however, these countries are poor and having low living standards, the investment ratio cannot be very high if hardship is to be avoided. Thus, low saving-income ratio acts as a limiting factor on economic growth. On the basis of the capital-output ratio and considering the percentage increase in national income aimed at, it is possible to work out the aggregate investment required.

Having fixed the size of the Plan, the next stage is to work out the details and fix targets for each individual economic effort on the basis of certain priorities. In order to evolve a sound and workable plan, it will be essential to ensure a **proper balance between the several major portions of the plan** to avoid either gluts or shortages.

A **crosswise balance** will establish an equilibrium between the aggregate output targets and the aggregate resources available. For the soundness and efficiency of the plan, it is essential that there should be close correspondence between the available resources and the aggregate production schedules.

Power, labour and transport are the most important resources which require balancing with the targets of production. In order to ensure that the targets fixed are mutually consistent, balances will have to be established between production targets and the productive resources. Physical targets must be balanced against financial resources that can be mobilised. A 'backward balance' is also required between the final products and the numerous components which enter into their production. Inter-industry balances are a *sine qua non* of sound and efficient planning. The Indian plans did not establish cross-wise balances or backward balances so that bottlenecks held up the execution of the plans.

No plans need be considered as absolutely final. In the course of implementation of a plan, new situations appear and have to be provided for. Hence, there should be provision for supplementary planning or for a revised plan. For the underdeveloped countries, it is wise to split the plan into two parts: (a) 'core' plan which must be carried out at all costs and (b) 'contingent' plan which may be implemented if the funds are available. That is what India did in the case of re-appraisal of the Second Plan in 1958.

It is necessary that there should be a certain degree of flexibility in planning. The plan can then be modified in the light of new requirements or new situations or new experiences. However, the main structure or character of the Plan should stand firm. Too much flexibility may nullify planning altogether. The basic structure or the core of the plan should not be tampered with.

We have now reached the final stage in the process of planning. The broad objectives have been laid down, the size of the plan has been fixed, financial resources mobilised, priorities determined and targets fixed. Now administrative machinery must be created to carry out the plan with faith and vigour. Even a good plan may come to nought unless competent and efficient administration is there to implement it. There should also be provision for supervision and regular assessment or evaluation of the work done. In the Soviet Union, the Gosplan acts as the watcher. The Planning Commission in India has set up the programme evaluation organisation for community projects. But what is needed is that the work of the entire plan should be evaluated.

Features of a Planned Economy

If we have a look at the planned economies, say, Russian, Chinese or even Indian economy, we shall discover some common characteristics. Formulation of the plan and its implementation call for a certain type of economic and administrative organisation and a certain type of endeavour and set up. It is only natural, therefore, that the planned economies

reveal some common features. The distinction between planned and unplanned economies rests largely on the dominant role played by the State in the planned economy and the laissez-faire doctrine swaying the State in the unplanned economy. State initiative, State regulation, State control of foreign trade, investment, price, etc., largely shape the economy under planning. The desire for accelerated economic development colours the social, political and economic outlook. The attitude of the people is to look at the economy as a whole rather than looking exclusively at their own individual affairs.

The following are some of the main features of a planned economy:—

Existence of a Central Planning Authority. All countries, launching economic planning, have at the top of economic affairs a Planning Commission or a Central Planning Authority, e.g., Gosplan in the U.S.S.R. and a Planning Commission in India. Planning has no meaning unless it is centrally planned. Planning by individual industries or organisations will simply constitute plans and not planning. For successful and efficient planning, a central planning body is essential and all planned economies have established such bodies. This body conceives the plan, prepares the plan, suggests measures for its implementation, supervises the working of the plan and assesses the achievements. Only a central body can perform these functions so that it may look at the economy as a whole.

Laying down Objectives. Planning to be fruitful must keep steadily in view certain broad objectives which have to be realised. In the absence of such objectives, planning will merely be a leap in the dark. Planning is not a policy of drift and the economic endeavour under planning has not to be haphazard. Certain very desirable objectives are laid down beforehand after careful consideration and due deliberation. However, it is essential that objectives are not to be mere dreams or distant ideals but they should be realistic and should look feasible and within reach. As we have discussed in an earlier section, the usual objectives are maximisation of national income, rapid industrialisation, providing full employment, achieving a socialistic pattern, achieving self-sufficiency, etc. Of course, the objectives will be laid down in the context of economic situation.

Fixing Targets. Allied with the laying down of objectives is the fixing of targets. The objectives indicate the directions in which the economy is to move and targets are fixed for the realisation of those objectives. Targets are fixed for each industry and for each sector of major industries, transport and communication, for imports and exports, and also in the field of education and public health. The target indicates the job assigned to each sector of the economy. When we take the aim carefully the

chances are that we may hit the target. Thus, fixing of targets is essential to give a concrete shape to our aims and make each sector of the economy move on the road to progress with determination. Fixing of targets enables the Planning Commission to determine the success or failure of each component part of the economy. In the case of failure, weak spots can be discovered and remedial measures adopted.

Controls. A planned economy has of necessity to be subjected to a variety of controls. The working of free market economy has to be modified and controlled in the interest of overall planned development. Price mechanism ordinarily guides the capitalistic economy, but, when planning is adopted, free functioning of price mechanism has to be restrained. A limit has to be put on consumer's sovereignty. All types of markets, e.g., consumer's markets, producer's markets, labour market, capital market, etc., must either be suspended or their activities seriously curtailed so as to make them conform to the requirements of planning. Thus, in a planned economy, we have price controls on the distribution of essential goods and scarce raw materials through fair price shops and co-operative stores, import control, export control, exchange control, control of capital issues, licensing of factories, etc. Laissez-faire is dead and gone in all planned economies and extensive State control takes its place.

Systematic and Co-ordinated Effort. Planning has to be comprehensive and not isolated and piecemeal. Hence individualistic, isolated and independent action on the part of various sectors is naturally out of place. All economic efforts aiming at accelerated economic development must be properly co-ordinated. The plans of individual industries for instance must be dovetailed. This will secure the necessary balance between the various parts of the plan. Only an intergated and co-ordinated plan can bring a community nearer to the objectives it has set before itself. The economic endeavour must be regular, sustained and systematic and not haphazard, diffused, indiscriminate and fitful. Without co-ordination, a country will land itself into chaos and economic mess.

Growing Public Sector. Another important feature of a planned economy is the vital role played by the public sector and its growing importance. Private sector cannot be expected to sink capital in enterprises in which the return is long-delayed and is uncertain. It will avoid pioneering tasks which are naturally hazardous. Nor can the private sector be expected to build up a modern steel plant. In certain lines of industry, the market may not be sufficient to attract private capital. In under-developed countries, the entrepreneurs prefer to invest in commerce to investing in industry. Thus, many industries of vital national importance remain neglected. Heavy industries are beyond the means of private entrep-

reneurs but they are indispensable for building up a self-reliant and self-generating economy.

The State as the custodian of national interests must step in where private enterprise is shy and is found wanting. The public sector really provides the essential framework for spreading out the planned economic activity. In India, quite a large number of important industries have been exclusively reserved for the public sector under the Industrial Policy Resolutions of 1948 and 1956. The public enterprises not only fill up the gaps in industrial structure but also provide the foundation and pave the way for further economic development. In all planned economies, the public sector is steadily expanding and assuming greater and greater importance.

Other Features. Better balance, more even distribution of economic power, greater economic stability, higher level of employment, fuller utilisation of resources, greater security for the workers, elimination of recurring business cycles are some other features of a planned economy.

Concept of Rolling Plan

The Indian Planning Commission decided in September 1977 to introduce the rolling plan concept with effect from April 1, 1978 with a view to ensuring greater flexibility and realism in planning. This decision constitutes a major departure from the past pattern of five-year plans.

It was felt that the past pattern proved to be vulnerable to changes in the domestic and international economies and did not adequately provide for the inevitable fluctuations in agricultural output.

Under the rolling plan concept, a five-year plan is formulated as before, but it is revised every year in the light of the performance of the various sectors of the economy and availability of resources. That is, there is an annual operational plan for each year with a fresh five-year perspective. Thus, there is a five-year plan in continuous existence, being reviewed and extended year by year.

In essence, the new system provides a continuum of realistic annual plans each rolling on to the other with a changing five-year perspective, which would be readjusted in accordance with changing economic conditions.

For almost a quarter of a century, the Planning Commission in India has been formulating five-year plans in a bid to attain the nation's economic objectives more expeditiously and according to a scale of priorities. But each of its blueprints turned out to be bigger, more ambitious and yet less fruitful in its impact on the basic problems of poverty and unemployment. The common man's frustration mounted as each Plan failed to bring about noticeably improvement in his life. At many places there was gross accentuation of economic disparities despite all the grandiose planning exercises. These led to derisive comments and a widespread dis-

content. The practice of fixing a specific five-year period for each plan also posed other problems. The mounting price spiral made nonsense of all estimates of costs and other projections. The tragedy of the Fifth Plan was particularly great on this account and much of the time spent on its formulation was a waste. The planners found it hard to finalise the schemes even after half the five-year period was over. Backlogs and overflows from one quinquennium to the next became a familiar feature of the planning process.

But it would be unfortunate if long-term perspectives are sacrificed on grounds of expediency and excessive reliance placed on short-term changes in programmes. The complexities of the situation and structural problems make a clear sense of direction imperative. It is equally true that ad hoc cuts in planned investment can disturb the basic plan balances.

In fact, the critics of the Rolling Plan complain that it may lead to no plan at all. They argue that a rolling perspective plan cannot take care of heavy industries with very long gestation periods. But it is not true that a rolling perspective plan cannot plan for heavy industries at all. Only, the attainment of the targets in their case will depend upon the prevailing circumstances in any one year.

Some people hold the view that it would usher in an era of "realistic and purposeful" planning in the country in the period to come. It is said that the rolling plan concept is eminently practical. It is considered that the rolling plan concept would make the government action-oriented, as accountability would increase when the yardstick for judging the results is short-term. It might help the administration cut bureaucratic red-tape, and corruption involved in clearing industrial licences, as the people are impatient for results.

Conclusion

Thus, the concept of Rolling Plans adopted by the Indian Planning Commission under the Janata Government is basically a rational one. Instead of a rigid framework, there has to be an annual operational plan with a fresh five-year perspective every year of a Rolling Five-Year Plan. This system, which marks a major departure from the past, calls for continuous adjustments in plan projections on the basis of resources availability, production trends and other economic developments. The Planning Commission is involved not only in updating the plan every year but also in keeping a continuous watch on the progress of plan projects, changes in price and production trends and other important developments which have a bearing on planning. However, the new system calls for more sophisticated techniques on the part of the Planning Commission to monitor not only the progress of plans but also other economic trends.

BOOK EIGHT :
ECONOMICS OF WELFARE

We studied the nature of Economics in the beginning of the book. Economics in a nutshell refers to the prudent management of scarce resources. The economists are generally agreed that the scarce resources of the community should be so utilised as to maximise total satisfaction or welfare of the people. Economics has mainly concerned itself with welfare as some of the well-known definitions of Economics would indicate. For instance, according to Cannan, "the aim of Political Economy is the explanation of the general causes on which the material welfare of human being depends." According to Pigou, Economics studies "that part of social welfare that can be brought directly or indirectly into relation with the measuring rod of money." Thus, Economics in its origin, development and content has coincided, by and large, with welfare economics. But let us see what welfare economics means.

Definition of Welfare Economics

Welfare economics is a branch of Economics which is primarily concerned with the promotion of the welfare of a community as measured in the satisfaction derived from the economic goods at the disposal of the community. It is the function of welfare economics to help in the formulation of economic policies calculated to maximise social welfare. "The analysis of the efficiency of an economy with maximum total satisfaction as the yardstick is known as welfare economics."¹ Quite a good definition would be: "Welfare economics is that branch of economic analysis which is concerned primarily with the establishment of criteria that can provide a positive basis for adopting policies which are likely to maximise social welfare."²

According to the definitions given above, we can say that the principal function of welfare economics is to provide standards of judgment by which one can judge economic policies and events from the point of view of social welfare. As Scitovsky observes: "Welfare economics is that part of the general body of economic theory which is concerned primarily with policy"³ In short, welfare economics has to define what an economic optimum may be. It has to lay down conditions for maximising welfare and prescribe policies with that end in view.

Economic and Non-Economic or General Welfare

A distinction may be drawn between economic welfare and general welfare. An individual's welfare may relate to his physical well-being, spiritual well-being or economic well-being. "The concept of welfare," according to Robbins, "embraces many states of mind, some of a merely 'sensual', some of more spiritual nature. ... But the class 'economic' will not be one of them."⁴ Obviously, economics is not concerned with physical or spiritual well-being. It is only concerned with that aspect of an individual's well-being which is derived from economic goods and services. In Pigou's words, "The range of our inquiry has become restricted to that part of social welfare that can be brought directly or indirectly into relation with the measuring rod of money. This part of welfare may be called economic welfare."⁵

Welfare refers to a state of mind or, as Pigou says, "the elements of welfare are states of consciousness." This is no doubt a subjective concept, but it

3. Scitovsky, Tibor—*Papers on Welfare and Growth*, 1962, p. 174.

4. Robbins, L.—*Robertson on Utility and Scope, Economics*, May, 1953.

5. Pigou, A.C.—*The Economics of Welfare*, 1948, p. 111.

1. Bober, M.M.—*Intermediate Price and Income Theory* (First Edition), p. 483.

2. Syed Fakharul Hassan—*Introduction to Welfare Economics*, 1962, p. 1.

can be imparted an element of objectivity by linking individual welfare to individual choice so that his welfare map is his preference map. For instance, if he chooses apples rather than oranges, he would increase his welfare by consuming apples rather than oranges. A person's choice is determined by a large number of variables some of which are economic and others not. Welfare economics ignores the non-economic variables. We might say that economic welfare refers to satisfaction derived from the consumption of economic goods, whereas general welfare refers to the satisfaction derived from both economic and non-economic goods.

But the two types of satisfactions are merged in a man's mind and cannot be clearly distinguished. Professor Little explains this by a metaphor thus: "The utilitarians imagined the mind to be like a well of known depth into which parcels of satisfaction, duly labelled economic or political or religious, were thrown. . . . On the later analysis it is imagined that the mind is like a well of unknown depth, partly filled with water, the level of which could be altered by turning on various taps labelled economic, political, etc. Once the water is in the well there is no way of saying which tap it came from, and also it is impossible to say how much water there is in the well."⁶ Hence, economic and non-economic welfare are not easily distinguishable.

As Professor Cannan says, ". . . there is no precise line between economic and non-economic satisfaction and, therefore, province of economics cannot be marked out by a row of posts or a fence, like a political territory or a landed property. . . ."⁷

It is possible that some economic causes affect economic welfare and total or general welfare differently. But there is a strong presumption that qualitative conclusions about effects on economic welfare hold good also of effects upon total welfare.

Positive Economics and Welfare Economics

We should now be in a position to lay down a clear line of demarcation between positive economics and welfare economics. We may refer once again to what we have discussed in the beginning of the book regarding the scope of economics. There we drew a distinction between positive economics and normative economics. That distinction practically holds good here.

Positive economics explains an economic phenomenon and normative economics comments on the desirability or otherwise of that phenomenon. For instance, positive economics explains why wealth in the community is unequally distributed and normative economics would say whether the unequal distribution of wealth is desirable or not. The

question of desirability falls in the purview of welfare economics. Again, positive economics would explain why the price of wheat has risen so high; welfare economics would suggest price control measures to promote the greatest good of the greatest number. In short, positive economics formulates economic generalisation or laws, whereas welfare economics is concerned with economic policies.

The idea underlying the essential difference between positive economics and welfare economics can be explained in another way. The principle of the economics can be falsified and rejected if they cannot be verified and established in the light of actual experience in the real world. The propositions of welfare economics are rather different. They are based on assumptions some of which may or may not be realistic. From the assumptions, we deduce conditions for maximising welfare. Even if the conditions are fulfilled, the welfare may not increase, because the assumptions may turn out to be inappropriate.

Also, it is difficult to say whether welfare has actually increased since welfare is not an observable quantity like a market price or an item of personal consumption. Testing a welfare proposition is an exceedingly difficult affair for private estimation of welfare is likely to differ widely. "Whereas the normal way of testing a theory in positive economics is to test its conclusions, the normal way of testing a welfare proposition is to test its assumptions."⁸

In positive economics, assumptions are simplified and adopted as convenient to draw conclusions and one worries only when conclusions come to be applied in the real world. But the assumptions of welfare economics are a more serious affair. They have to be carefully scrutinised, since they are going to form a basis of actual policy. "It is clear that the interest attaching to a theory of welfare depends almost entirely upon the realism and relevance of its assumptions, factual and ethical in a particular historical context."⁹

Individual Welfare and Social Welfare

A student can say at once that individual welfare refers to the sum-total of satisfaction derived by an individual from the consumption of economic goods, whereas social welfare is the total satisfaction of the society as a whole. Social welfare has been defined as "an aggregate of the utilities or satisfaction of all the individuals in the society." But the matter is not so simple as that.

The individual welfare can be linked with his choice. We cannot say that social welfare depends on society's choice. The society consists of millions of individuals who choose differently. The society

6. Little, I.M.D.—*A Critique of Welfare Economics*, 1960, p. 51.

7. *Wealth*, pp. 17-18.

8. Graff, J. De V.—*Theoretical Welfare Economics*, 1968, p. 3.

9. *Ibid.*, p. 3.

has no mind of its own apart from individuals. If in a society, an economic measure or policy makes some individuals better off and others worse off, we cannot say what has happened to social welfare: whether it has gone up or down.

Difficulty also arises from the immeasurability of utility or satisfaction. If the satisfaction derived by an individual could be measured cardinally (i.e., by assigning definite numbers), as the Marshallian utility analysis made us believe, then it would have been possible to arrive at an exact measure of social welfare by adding the individual utilities. But utility is not an extensive magnitude like length and is not, therefore, measurable numerically. It is, on the other hand, an intensive magnitude and we can, therefore, speak of it as more or less. In other words, although cardinal measurement of utility is out of the question, ordinal measurement is possible as by indifference curve technique.

This, however, is sufficient for our purpose. We can assume rational behaviour on the part of consumers in the mass. It will be possible for us to see whether an economic event or policy will increase or decrease economic welfare. That is all what is needed for practical purposes.

In deriving social welfare from individual welfare, we are confronted with the problem of inter-personal comparisons which we shall discuss separately. In the meantime, let it suffice to say that the problem is not insoluble. All are agreed that a rich man enjoys a greater measure of economic welfare than a poor man. It is not really **inter-personal** comparison, i.e., comparing the utility of a rich person with that of a poor person. It may, on the other hand, be considered an **intra-personal** comparison in which the same person compares the two situations. He can say if he became rich he would derive greater satisfaction. We shall see as we proceed that various theories of welfare economics have been put forward to facilitate the transition from individual to group or social welfare.

Divergence between Individual and Social Welfare

Broadly speaking, the welfare of the individuals is synonymous with the welfare of the society. But the cases of divergence are not uncommon. Pigou has mentioned several situations in which there is divergence between the value of marginal social and marginal private net product.¹⁰ For instance, when a tenant leaves the land in an improved condition at the end of the lease, the private net product will be less than the social net product. Such a divergence will be found to occur in all cases in which the contract between the two parties provides for the return of a durable producer's good in a better condition.

Again, there are cases when a person incidentally renders a service to some other persons, for which

he gets no payment or no payment can be exacted. In such cases, again, private net product will be less than the social net product, e.g., a light house benefiting ships on which no toll could be levied, investment made in private parks improving the air of the neighbourhood, lamps installed at the doors of private houses, investment on prevention of smoke from factory chimneys, etc. If the smoke is not prevented, the social net product will be less than the private net product, for the smoke inflicts a heavy uncharged loss on the community in the form of damage to buildings, vegetables, increased expense on washing clothes, cleaning rooms, etc. Moreover, when investment is made on research leading to inventions which cannot be kept a secret or got patented, the investor passes on to the society a part of the benefit. Here also private net product is less than the social net product.

On the other hand, there are cases where social net product is less than the private net product. This will happen when there are technical difficulties of enforcing compensation for disservices incidentally rendered as in the case of a factory smoke inflicting loss or damage on the neighbourhood, as mentioned above. The other examples are the game preserving activities of some landlords resulting in damage to the neighbours' crops by rabbits and other wild animals, owner of a factory in the heart of the city, production and sale of intoxicants, evils arising out of foreign investments, a loan financing a foreign war, women working in factories immediately before and after confinement. In all such cases, private net product is greater than social net product. In other words, the individuals gain at the expense of the society. Individual welfare is promoted but social welfare is reduced.

Thus, divergence between individual welfare and social welfare arises from the existence of uncompensated services and uncharged disservices. They occur in all market forms, viz., perfect competition, monopolistic competition, monopoly, etc. The state can reduce this divergence and bring about harmony between individual and social welfare through fiscal measures like bounties and taxes.

Old Welfare Economics : Pigou's Analysis

Credit of systematising the study of welfare economics belongs to Professor Pigou. The basic postulate put forward by him relates to man's equal capacity for satisfaction when placed in similar circumstances. He says: "If we take random groups of people of the same race and brought up in the same country, we find that in any features that are comparable by objective tests, they are on the average pretty much alike." Again, "On the basis of analogy, observation and intercourse, inter-personal comparison can, I think, properly be made; and, moreover, unless we have a special reason to believe

10. Pigou, A.C.—*Economics of Welfare*, 1948, Ch. IX.

the contrary a given amount of stuff may be presumed to yield a similar amount of satisfaction, not indeed as between any one man and another, but as between representative members of groups of individuals."¹¹

Pigou, therefore, holds the view that inter-personal utility comparisons are possible. He observes, "utilities though not measurable (strictly in cardinal sense) are comparable both intra-personally and inter-personally"¹² He, therefore, accepts the ordinal measure of utility (i.e., more or less and not measurable by assigning definite numbers).

Since, according to the postulate of equal capacity for satisfaction, different people derive the same satisfaction out of the same real income, it will increase social welfare if some real income is transferred from the rich to the poor. In keeping with the law of diminishing marginal utility, such a transfer will mean less loss of utility to the rich than the gain to the poor.

The relationship between the welfare of a society and the distribution of its income can be explained with the help of the following diagram (Fig. 1). Let

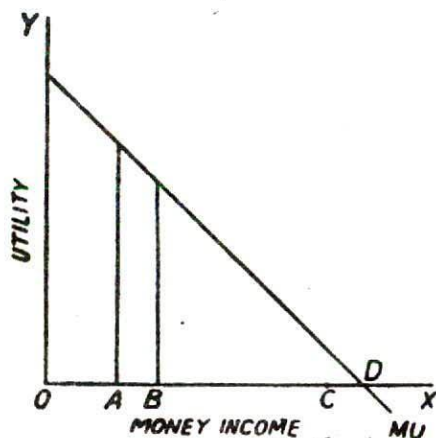


Fig. 1

us take the case of two individuals of identical capacity for experiencing utility but with extremely different incomes. Let us draw a curve to represent the marginal utility to each of these persons of added increments of money. They will, because of their different incomes, be able to consume different quantities of whatever gives them utility. The above diagram shows the situation on a utility curve of two persons of extremely different money incomes. The rich man can easily settle at D beyond which there is no point in further outlay (because utility is negative beyond point D). The poor man may well be at A (because of his very much lower

income). If the rich man's income is reduced, he may not have to contract his current consumption at all or, in any case, we may suppose him only to be forced to reduce from D to C. This transferred income to the poor man enables him to move from A to B. On these assumptions, redistribution of income from the very rich to the very poor cannot but help increase social welfare.

According to this view, a perfectly equal distribution of wealth will maximise social welfare. But it is objected that such a re-distribution of wealth will militate against capital formation and will reduce social welfare by damaging the productive capacity of the community. Pigou, however, takes care to say that such a transfer of real income should be accomplished so as not to affect adversely "production effect, enterprise and development of capital equipments."¹³

The principal objection put forward against this view is that the presumption of man's equal capacity for satisfaction is not scientifically tenable and cannot, therefore, form the basis of inter-personal comparisons of utility. In this connection, Robbins observes: "The postulate of equal capacity for satisfaction rests on ethical principle rather than upon scientific demonstration."¹⁴ Since, according to this view, utility of different individuals is not comparable, economist is stultified as an adviser in policy matters.

Harrod, however, does not agree with this view. He says some postulate of this sort must be assumed if study of economics is not to lose its utility altogether. Even Robbins suggests "that such assumptions should be made and their implications explored with the aid of economist's technique." But under the weight of Robbins' criticism, welfare economics lost its scientific purity and ceased to be accepted as a guide to policy. It, however, was rescued from this situation by the new welfare economists like Kaldor and Hicks, which we shall study presently.

NEW WELFARE ECONOMICS

The New Welfare Economics represents a break with the utilitarian tradition in Economics. The new welfare economists claim to arrive at optimum conditions of production and exchange without adding the utilities of different persons or comparing the satisfactions of different individuals. The new welfare economics is claimed to be objective and scientific and not ethical. It is said that welfare economics furnishes an analysis of the causes governing the measure of welfare or an increase or

11. *Ibid.*, p. 292.

12. *Ibid.*, p. 293.

13. *Ibid.*, p. 301.

14. Robbins, L. - *Interpersonal Comparisons of Utility*, E.J., December 1938, p. 637.

decrease thereof. Pareto is said to be the founder of new Welfare Economics, although there have been introduced some subsequent refinements since then. About the welfare propositions laid down by Pareto even now there is general agreement. We shall, therefore, presently deal with them.

Pareto's Welfare Criterion

Italian economist Vilfredo Pareto has laid down the conditions for maximising social welfare or for achieving a social optimum. A Paretian optimum refers to a situation in which it is impossible to make any one better off without making some one worse off. For judging such a situation, Pareto has enunciated a very simple and straightforward criterion thus: "Any change which harms no one and which makes some people better off (in their own estimation) must be considered to be an improvement."

Graphical Representation. The Paretian criterion may be put in graphic terms as under:

For simplicity, let us deal with a community in which there are only two persons X and Y. In Fig. 2

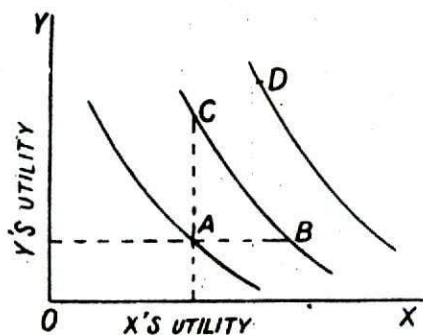


Fig. 2

let us represent the utility of individual X along the horizontal axis and that of Y along the vertical axis.

The Pareto criterion states that if we start off from a situation which is represented by a point like A, then a policy change by the Government is an improvement if it results in a move to any point like B or C which lies to the right of A or above. At B, X is better off than at A with Y as well off as before, whereas the move to C benefits Y without harming X and the move to D, benefits both the persons.

Conditions of Paretian Optimum

The conditions of Paretian optimum are given below:—

(i) **Optimum Allocation of Products.** Allocation of products to be optimal must be such as to make it impossible for any pair of individuals to exchange any quantity of any pair of consumer goods result-

ing in increase in one's satisfaction without decreasing that of another. That is, if any alternative allocation can increase some one's satisfaction without decreasing another's, it is not optimal. To put in terms of indifference curve technique, the marginal rate of substitution (MRS) between any two goods must be same for any pair of owners of the same two goods. We know that marginal rate of substitution (MRS) is the rate at which units of one good can be exchanged for the units of another without lowering the level of satisfaction.

This can be explained with the help of an Edgeworth Box diagram. The Edgeworth diagram for consumption shows the indifference curve preference maps of the two individuals and their derived levels of satisfaction from the various combinations of the goods. Fig. 3 (i) shows four ordinary indifference curves, i.e., I_1, I_2, I_3 and I_4 , showing the various combinations of the goods X and Y at different levels of income of A. Similarly, Fig. 3 (ii) shows four indifference curves, i.e., I_5, I_6, I_7 and I_8 , showing the various combinations of the two goods X and Y at different levels of income of B.

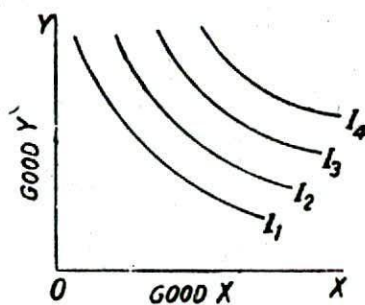


Fig. 3 (i)

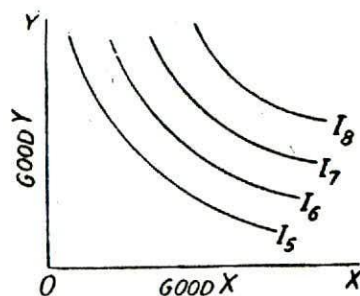


Fig. 3 (ii)

The indifference curve preference maps of both A and B have been combined and shown with the help of an Edgeworth Box in Fig. 3 (iii).

The indifference curve preference map of A starts from the origin, O, whereas the indifference curve

preference of B starts from the origin O' . The slope of an indifference curve, as we know, at any point is the marginal rate of substitution between X and Y

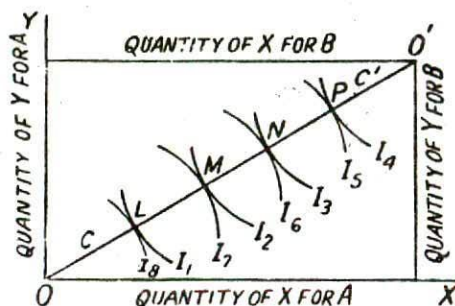


Fig. 3 (iii)

(MRS_{xy}) at that point. We know that the MRS_{xy} is the marginal amount of one good which is lost in order to get a marginal unit of the other, in order to maintain the same level of satisfaction. The point would be the optimal where the (MRS_{xy}) of both the individuals is the same. If the marginal rate of substitution between any two goods is not the same for the two individuals, then with the help of exchange, it is possible to increase the level of satisfaction of one without diminishing that of the other. Now, if we join the points L, M, N, P where the different sets of indifference curves of the individuals A and B are tangent to each other, we get a curve known as **contract curve**, i.e., cc' . The points L, M, N and P, lie on the contract curve cc' . At each of these points, the MRS_{xy} for A and B is the same. Therefore, each point along a contract curve cc' represents a point of Pareto-optimality. In other words, any redistribution of the goods X and Y between A and B will yield a lower level of satisfaction.

(2) **Optimum Degree of Specialisation.** There is a necessary (though not a sufficient) condition for determining the optimum output of each product by each firm. The condition is that the marginal rate of transformation (MRT) between any two goods must be the same for any pair of firms producing both of them. The Marginal Rate of Transformation between two goods is the amount of one good which would have to be sacrificed to produce one unit of another good. This only means the ratio of marginal opportunity cost of the two goods. Obviously, if marginal rate of transformation is not the same for any pair of producers, it would be possible to increase the combined output of the two goods or increase the output of one without decreasing that of another. This will mean that the present degree of specialisation is not the optimum.

(3) **Optimum Factor Utilization.** This represents optimum relationship between the factor and the product. The utilisation of a factor will be optimal if

the marginal rate of transformation (MRT) between any factor and any product is the same for any two firms using the factor and producing the product. If marginal rate of transformation is not the same, it will be a departure from the optimum. For instance, if marginal productivity of any factor is not the same for the two producers, the total product can be increased by shifting some factor units from low to high productivity firms.

(4) **Optimum Allocation of Factors.** All factors of production must be so allocated among the various uses that the marginal production in each use is the same. If it is not the same, it will pay to shift some units of a factor from one use to another. In terms of new economics, the marginal rate of technical substitution between any pair of factors must be the same for any two firms using both to produce the same product. Only then, the allocation will be optimal. If it is not, it will be possible to increase the total product by shifting a factor from one firm to another.

(5) **Optimum Direction of Production.** Another condition for maximising welfare is that the marginal rate of substitution between any pair of products for any person consuming both must be the same as the marginal rate of transformation for the community between them. In terms of utility analysis, it means (a) that the ratios of marginal utilities of the two goods must be the same for all consumers, i.e.,

$$\frac{MU \text{ of A}}{\text{Price of A}} = \frac{MU \text{ of B}}{\text{Price of B}}$$

and so on. This will represent maximum satisfaction of the consumer. (b) The ratio of their marginal costs must be the same for all producers producing them, i.e.,

$$\frac{MC \text{ of A}}{\text{Price of A}} = \frac{MC \text{ of B}}{\text{Price of B}}, \text{ and so on.}$$

(c) These ratios must be equal. This condition relates to the maximum efficiency of the economic system. The goods must be produced in such combinations that they not only conform to consumers' preferences but are also produced at the minimum average cost. If it is technically possible to substitute one good for another and make one better off without making another worse off, the production is not optimal.

This may be explained with the help of a diagram (Fig. 4). Let us take a community producing two goods. The quantity of each good it produces will depend on its factor endowments and on its existing technical knowledge. By factor endowments we mean the amounts of factors of production the community possesses. Let us assume that the community can produce either 100 bushels of wheat or

100 yards of cloth when all its factors are fully and most efficiently employed in the production of either wheat or cloth respectively. The various combinations of the goods, *i.e.*, wheat and cloth, that it can produce can then be shown by the production possibility curve or the transformation curve. If the community chooses to produce only wheat, it can produce 100 bushels. If it would also like to produce cloth, it must forgo the production of some of its wheat. The amount of wheat which the community foregoes in order to have an extra unit of cloth is known as the opportunity cost of wheat in terms of cloth. In other words, the opportunity cost of a particular service X in producing a particular commodity A is the benefit or opportunity lost, if X is instead put to its best alternative use.

In the diagram (Fig. 4) AB is the community's production possibility curve drawn on the assumption of increasing opportunity cost. The meaning of increasing opportunity cost is that the amount of extra wheat the community produces by decreasing production of cloth with a given factors is steadily increasing.

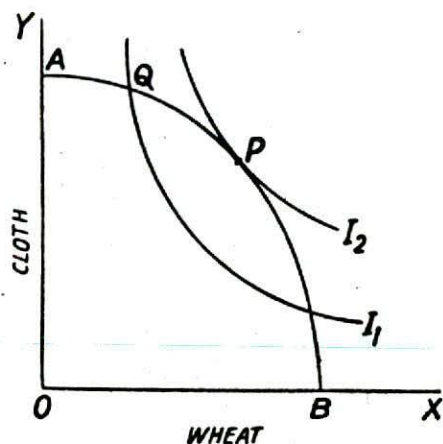


Fig. 4

Let us superimpose the indifference curve preference map, *i.e.*, I_1 and I_2 of an individual A on AB. Now the Pareto-optimal point would be where the slope of the production possibility curve AB and of the indifference curve of A is the same.

In this diagram, point P is the optimal point, as the slope of the indifference curve I_2 and PB on curve AB is the same. The point Q is not the point of optimum as here the slope of the production possibility curve AB and indifference curve I_1 is not the same, and moreover the point Q lies on the indifference curve I_1 , indicating that the consumer's satisfaction can be increased by moving from point Q to point P which lies on a higher indifference curve I_2 .

(6) **Optimum Allocation of a Factor-Unit's Time.** The owner of a factor unit has the option of using

the factor to render him a direct service or hiring it out to others for aiding in production. Hence, the problem for the owner of a factor is to allocate in an optimal manner the time of the factor unit between rendering direct services or working for a money reward. The condition for maximising welfare is that the marginal rate of substitution between the amount of product X received for aiding in its production and the time spent in rendering this aid must be the same (for each factor unit owner) as the marginal rate of transformation between the time of his factor unit spent in aiding production and the product X. This means that an individual's marginal valuation of his productive work must be equal to what his work adds to the community's total product. In other words, the money reward paid to the owner of a factor unit must be equal to the value of the marginal physical product of the factor unit. If it is not the same, the allocation will not be optimal, because it will then be possible to get more of X by transferring a moment of a factor unit's time from the production of direct services to production of X, or *vice versa*.

(7) **Inter-temporal Allocation of Assets.** Every firm (an individual) has to bring about an optimal allocation of factor inputs and product output over time. "A firm may produce a given output stream with various time patterns of factor inputs and, conversely, it may have various time patterns of outputs with a given input stream of factor services." This is only a special case of the more general problems of optimum allocation of products and factors, *i.e.*, cases where some of the products or factors may relate to different moments of time. In this case, the allocation will bring maximum welfare when the marginal rate of substitution between any pair of moments is the same for every pair of individuals or firms. One inter-temporal situation relates to borrowing and lending. The condition of maximum welfare in this case would mean that the rate of interest at which an individual is willing to lend a given amount of money (capital) must be equal to its marginal productivity to the borrowing producer.

Second Order Conditions. From the above, it is clear that the Pareto-optimum can be attained if the several marginal conditions as outlined above can be fulfilled. These are known as **first order conditions**. However, it is possible in some situations that the fulfilment of these first order conditions may not lead to welfare optimality. To achieve an optimum welfare position, it is very essential that the second order conditions along with the first order conditions should also be satisfied to achieve the maximum welfare. These second order conditions are no other than the stability conditions for equilibrium position. The fulfilment of second order conditions means that all the indifference curves and the production possibility curves should have the right

curvature in the neighbourhood of any position where marginal conditions are satisfied. Prof. Reder puts it like this that in the neighbourhood of maximum welfare, all indifference curves must be convex to the origin and all transformation curves must be concave to it.

This is illustrated in the following diagram (Fig. 5). AB is the production possibility curve of the community. I_1 and I_2 are the indifference curves of an individual. The point b is a point of optimum welfare as the indifference curve I_2 is a tangent to the production possibility curve AB . At point a , the indifference curve I_1 is also a tangent to the production possibility curve AB but it is not a point of optimum welfare, as by moving from a to b , the community reaches on a higher indifference curve I_2 .

Conclusion. These are a few conditions of welfare maximisation. It may, however, be emphasised that these conditions are necessary but not sufficient

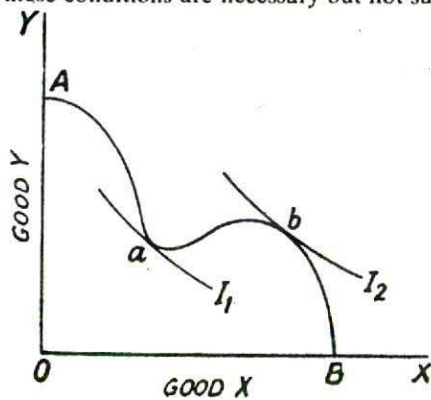


Fig. 5

for achieving optimum welfare. There may be other conditions in production and exchange which may have to be fulfilled in certain cases. Samuelson thus sums up: "Between any two variables, the marginal rates of substitution must be (subjectively) equal for all individuals, and (technically) equal for all alternative processes with the common technical and subjective ratios being equivalent; otherwise there exists a physically attainable position that makes everyone better off."

Relation Between Paretian Optima and Perfect Competition

In what follows, we would discuss how far a perfectly competitive economy can be said to satisfy the optimal conditions given by Pareto.

(i) Under conditions of perfect competition, the consumer in order to maximize his satisfaction makes the marginal rate of substitution between any two goods equal to the ratio of their prices. At equilibrium, we know that the marginal rate of substitution between two goods is equal to the ratio of their prices for any consumer. Therefore, the first

condition of optimum allocation of goods is satisfied under perfect competition.

(ii) Under conditions of perfect competition, the producer in order to have the minimum cost combination of the factors to produce a given output tries to equate the marginal rate of transformation between two factors to the ratio of their prices. At equilibrium, we know, this condition is satisfied. Hence, the condition about the optimum allocation of factors is also satisfied.

(iii) The producer under perfect competition, in order to maximize his profits, tries to equate the marginal rate of transformation between the two commodities to the ratio of their prices and at equilibrium this condition is met. Thus, the condition about the optimum utilization of a factor is satisfied.

(iv) The producer in order to maximize his profits tries to equate the marginal product of each factor to its price and, at equilibrium, this condition is satisfied. Therefore, the condition of optimum factor-product relationship is satisfied.

(v) Under conditions of perfect competition, we know that at equilibrium, the marginal rate of substitution between the two commodities is equal to the marginal rate of transformation between the two commodities and both are equal to the ratio of their prices. Therefore, the condition about the optimum direction of production is also satisfied.

(vi) Under perfect competition, a factor will be utilized to the point where the marginal rate of substitution between the employment of the factor and its leisure equals the rate of payment made to it. Similarly, with a view to maximizing his profit, a producer equates the marginal rate of transformation between the factor and its product. Since the price of the product is the same for all the producers and the rate of payment is the same for all the factor units, the condition of optimum allocation of a factor unit's time is also satisfied.

(vii) An owner of an asset makes the marginal rate of substitution between present income and future income equal to his rate of time preference. In the same way, a borrower of the asset equates the cost of borrowing with the marginal rate of substitution between the present asset and future asset. Since under perfect competition, the rate of payment for all similar assets is the same, as also the cost to the borrowers, it is equal to the marginal productivity of the asset. In this way, the condition relating to the inter-temporal optimum allocation of assets is also fulfilled under perfect competition.

From the above it is clear that under perfect competition all the marginal conditions of Paretian optimum are satisfied.

However, the fulfilment of these conditions is subject to the following bold assumptions:

(i) There is perfect knowledge about both the

future and the relevant activities of others in the present;

(ii) All the producers are genuine cost minimizers as well as profit maximizers.

(iii) There exists perfect competition among the buyers and sellers;

(iv) There exists no external effects.

With the above-mentioned assumptions, if the economy comes to an equilibrium, so that demand and supplies are equal at some stable prices—then the resulting allocation of resources will be an optimal one.

However, in spite of all these bold assumptions, the resulting allocation of resources may not be an optimal one. Why?

(i) Under perfect competition, at equilibrium, there is an equality between price and marginal private cost of production and not between price and marginal social cost of production. Marginal private cost of production is calculated from the point of view of the producer, whereas the marginal social cost of production is calculated from the point of view of the society as a whole. And there may be a wide divergence between the marginal private cost and the marginal social cost. The following example will make this point clear. A producer may be responsible for polluting the air through the smoke emitted by his chimneys. He is not being charged for this disservice to the society. Now the price charged by the producer may be equal to the marginal private cost but not to the marginal social cost.

(ii) The conditions of optimum production and exchange, as dealt with by Pareto, do not take into account the optimum pattern of income distribution. The allocation which is brought about through the operation of the market forces under perfect competition can be said to be efficient only with respect to a given distribution of income which may be far from the optimum distribution from the social point of view.

(iii) Finally, if there are external economies in an industry, under conditions of perfect competition, then the supply curve of the industry will be downward sloping and the equilibrium price then will be equal to the average cost of production and not to the marginal cost of production.

The above limitations have restricted very much the usefulness of the Paretian welfare analysis as a tool for policy recommendations.

Compensation Principle

A notable advance in welfare economics since Pareto has been the Compensation Principle, which is associated generally with the names of Kaldor, Hicks and Scitovsky.

Assumptions. The important assumptions on which this principle is based are as follows:

(i) There is constancy of individual's taste and

the absence of external effects both in production and in consumption;

(ii) Inter-personal comparison of well-being are not possible;

(iii) Individuals are the best judges of their welfare.

This principle can be presented as follows: Let us consider the effects of any new economic policy introduced by the Government in a society. It is possible then to divide the society into three categories, *i.e.*, those persons who would gain, those who would lose and those who would remain unaffected. In Hicksian terminology, or in terms of indifference curves, it means some would move to a higher indifference curve and others to a lower indifference curve and still others would remain on the same indifference curve. Here nothing is assumed about the quantities of satisfaction. It is argued that those who remain on the same indifference curve are quite indifferent about the change. We are therefore left with the gainers and the losers. Suppose the persons who have gained can compensate the losers, *i.e.*, can offer them something regarded by the losers as moving them back to their previous indifference curve. If the gainers are in a position to restore the losers to their original position and themselves move to an indifference curve lower than the one they were on after the initial change, but not so low as on the indifference curve they were on initially, *i.e.*, before the policy measure took place. Something has taken place in this situation that can be described as an increase in welfare on the part of the society. According to the advocates of this doctrine, this can be labelled as an increase in welfare.

To use Kaldor's words: "In all cases, where a certain policy leads to an increase in physical productivity, and thus of aggregate real income, the economists' case for the policy is quite unaffected by the question of the comparability of individual satisfactions; since in all such cases it is possible to make everybody better off than before, or at any rate to make some people better off without making anybody worse off. . . . In order to establish his (*i.e.*, economist's) case, it is quite sufficient for him to show that even if all those who suffer as a result are fully compensated for their loss, the rest of the community will be still better off than before."¹⁵ In other words, no inter-personal comparisons of satisfactions are involved in judging a policy aimed at increasing aggregate wealth.

The Compensation Principle was endorsed by Prof. Hicks in these words: "A permitted reorganisation must be taken from now on to mean a reorganisation which will allow of compensation being paid and which will yet show a net advan-

15. Kaldor, N.—*Welfare Propositions of Economics and Inter-Personal Comparisons of Utility*, E.J., 1939, p. 550.

tage."¹⁶ In other words, it is possible to increase welfare taxing the beneficiaries of an economic policy and out of the funds so raised to compensate fully the sufferers therefrom in the form of bounties and still develop a surplus. Thus, the gainers compensate the losers.

Criticism. The compensation principle has been subjected to criticism by economists like Little, Baumol and Samuelson. The main points of criticism are:

(i) For the purpose of compensation, the theory assesses the loss and gain of individuals on the assumption of the equal marginal utility of money for the rich and the poor. This involves inter-personal comparisons which the new welfare economics wanted to avoid.

(ii) This principle would work only if the compensation is actually paid by the gainers to the losers. If the compensation is not in fact made, some members of the society have in fact lost. Actually compensating the losers may prove quite a tall order. To begin with, we have to find out who they are, and this, in turn, raises the question as to what evidence bears on who is a gainer and who is a loser. Are we to take their word for it? And if not, how do we know whether someone is a gainer or a loser without making an interpersonal comparison?

(iii) The payment of compensation creates its own difficulties. Apart from estimating the exact magnitude of loss or gain without knowing everybody's utility scale, there are the administrative difficulties involved in the payment of actual compensation which make this principle impracticable.

(iv) The problem arises about the manner in which compensation is to be made. Typically, it was assumed that compensation would take the form of money payments. This may work, if someone has been damaged in a very obvious way, such as losing Rs. 5,000 or Rs. 10,000 a year in money income. But in a society, where the exciting and interesting changes profoundly alter the whole character and manner of life, the damage that occurs as a result of social change may often, and is likely to, take a form that cannot possibly be remedied simply by offering somebody hard cash.

(v) Then, there is a problem of the so-called 'external effects.' It assumes that a person's welfare depends solely on his own economic state and is not affected one way or the other by the states of those around him. This is not true. If an economic change has left you where you were before, able to buy about the same things, but has made other people much better off, you will not feel as well-off as you did originally. Here the gain by the gainers has

simply had an unfavourable external effect on the situation of the other group, without the other group's own actual economic situation having changed in any direct or observable way.

(vi) This theory isolates production and exchange from distribution and thus ignores distribution. It is impossible to ignore the nature of distribution while considering the problem of productive efficiency. The pattern of distribution depends on the composition of national output and it also affects marginal utilities of the mass of consumers. How can distribution, therefore, be ignored?

(vii) Dr. Little and Prof. Scitovsky take exception to Prof. Hick's argument that it is possible that after the lapse of sufficient length of time all would be better off as a result of a certain reorganisation of economic activity. But good and bad effects of economic changes on real income distribution may not cancel out in the long run, especially major changes. Besides inter-personal comparisons at a certain time, it involves inter-temporal comparison which is even worse.

(viii) Kaldor's argument implies that the State is responsible for maintaining equitable distribution of income in the community. This can be the case only in a socialist state. In a free enterprise economy, it is, on the other hand, undesirable for the state to interfere in the distribution of income brought about by market mechanism.

Conclusion. Thus, we come to the conclusion that the compensation principle fails to put welfare economics on a sound footing so as to be beyond the criticism of positive economists.

Scitovsky's Double Criterion

In an article in 1941, Scitovsky has shown that the Kaldor-Hicks' criterion may be contradictory in itself. According to Kaldor-Hicks' criterion, let us assume that the position B is more efficient than the position A. Once the position B is chosen by the community, the same criterion can reveal that the return move from B back to A in which losers bribe the gainers to return to the original position A is an improvement as well. This inconsistency in the Kaldor-Hicks' criterion is labelled as the 'Scitovsky Paradox' or the Reversal Test. In order to remove this inconsistency and to have a correct criterion of welfare, Scitovsky suggested that the non-fulfilment of the reversal test should be added to the Kaldor-Hicks' criterion. The non-fulfilment of the reversal test means that the losers from an economic change may not be in a position adequately to bribe the gainers to oppose the change. In other words, the position A is socially better than the position B and also, the losers could not bribe the gainers into making the change.

Little's Criterion

According to Prof. I.M.D. Little, neither the

16. Hicks, J.R.—*The Foundation of Welfare Economics*, E.J., December 1939, p. 706.

Kaldor-Hicks' test nor the Scitovsky's double test can be taken as a criterion of welfare. He develops a new welfare criterion which is based on two-value premises. First, that an individual becomes better-off if he is enabled to reach a position higher up on his order of choice. Secondly, any social change that makes everybody better off is a good change. In the words of Little, this criterion can be stated as follows: "A change is economically desirable if it results in a good redistribution of welfare, and if a policy of redistributing money by lump-sum transfers could not make everyone as well-off as they would be if the change were made." In other words, this means that an economic change will constitute social improvement if (i) the resulting redistribution is no worse than the old one and (ii) it is impossible to make the community as well-off in the initial position as it would be after the change.

SOCIAL WELFARE FUNCTION

The social welfare function represents another new approach to welfare economics. This system of welfare economics was first worked out by Professor Bergson in his article "A Reformation of Certain Aspects of Welfare Economics."¹⁷ It has been endorsed and further developed by Professors Samuelson and Tintner. Since some sort of value judgment is essential for inter-personal comparisons, welfare economics, they say, is essentially a normative study, but it can be made a scientific study nevertheless. For this purpose, they have introduced into welfare analysis what has been called a 'Social Welfare Function.'

The Social Welfare Function consists of a set of value judgments in order to determine which of the alternative situations is socially most desirable. Bergson defines social welfare function "as a function either of the welfare of each member of the community, or of the quantities of products consumed and services rendered by each member of the community."¹⁸

The social welfare function is completely general inasmuch as it takes into account external economies and diseconomies as well as dependence of one person's satisfaction on other people's welfare. Professor Bergson says that the value of welfare function "is understood to depend on all variables that might be considered as affecting welfare: The amounts of each and every kind of good consumed by and services performed by each and every

household, the amount of each and every kind of a capital investment undertaken, and so on."¹⁹ Thus, the social welfare function can be considered as a function of each individual's welfare, which in turn depends not only on his personal well-being, but on his assessment of the distribution of welfare among all the members of the community. It is a sort of collective utility function.

It can be seen how Bergson's theory differs from that of Kaldor and Hicks. Bergson emphasises inter-relations of the welfare of individuals whereas Kaldor and Hicks assume them away and also ignore the problem of distribution. Bergson takes into account all possible determinants of individual welfare function and builds them into single social welfare function whose value is to be maximised.

But aggregating individuals' preference into a single social preference presents serious problems: There is the problem of specifying the shape of the social welfare function and its exact dependence on the welfare of each individual. In order to determine the shape of the social welfare function, we have to decide about the relative weights to be attached to each individual's preferences. We have to decide whether everybody's preference is to be given equal weight or different weights are to be assigned and, if so, on what principle? It would then involve a value judgment which the new welfare economics wanted to eliminate.

Another difficulty has been pointed out by Professor Arrow in his 'Social Choice and Individual Values.' He points out that a consistent and truly representative social welfare function cannot be constructed if choice is to be made from among more than two alternatives. A social ordering must be consistent (transitive) and non-contradictory. For instance, an ordering will be consistent (transitive) if I say X is better than Y and Y is better than Z, I also must say that X is better than Z. But Professor Arrow shows that the majority rule will lead to contradictory social ordering. This, however, only shows its limitation and does not altogether rule out the use of the social welfare function.

Hence, social welfare function cannot be operationally defined and has little practical importance as a policy measure.

Welfare Criteria

From the above discussion, we can deduce some criteria for welfare judgments. These criteria enable the economists to make welfare pronouncements. That is to say, whether welfare has been increased or decreased or whether it has been maximised. The following criteria may be mentioned:

(i) **Pareto Criterion.** Italian economist Vilfredo Pareto enunciated a very simple and straightforward

17. *Quarterly Economic Journal* (1937-38), pp. 310-34.

18. Scitovsky, T.—*Papers on Welfare and Growth*, 1962, p. 184.

19. See Scitovsky, T.—*Papers on Welfare and Growth*, p. 186.

criterion thus: "Any change which harms no one and which makes some people better off (in their own estimation) must be considered to be an improvement." The optimum allocation of goods among consumers is based on this criterion. According to this criterion, points rationing which permits every consumer to benefit by adjusting his purchases in accordance with his own tastes and desires without harming anyone, is better than fixed rationing. Obviously, this criterion does not cover cases in which an economic change, while benefiting some, harms others. Such cases are simply brushed aside. Thus, the crucial issue of inter-personal comparisons is bypassed.

(ii) **Kaldor-Hicks Criterion.** According to this school of thought, economic welfare will be increased if those who benefit are made to compensate those who lose by an economic reorganisation and still retain a part of the gain for themselves. Thus, the change results in a net gain in welfare. Kaldor states the criterion thus: "A change is an improvement if those who gain evaluate their gains at a higher figure than the value which the losers set upon their losses."

(iii) **Scitovsky Criterion.** It is a double criterion. It is possible that not only an economic change may be beneficial from the welfare point of view but reverting to the original position may also be an improvement. To avoid this paradoxical possibility, Scitovsky suggested 'double test, i.e., (a) movement from the original position to a new position should be an improvement and (b) return movement should not be an improvement.

There is an implicit value judgment in both Kaldor and Scitovsky criteria; because the potential money compensation to the losers is a concealed value judgment through money. They have both thus ducked the basic problem of inter-personal comparison to evaluate policy change.

(iv) **Bergson Criteria.** Bergson has suggested that the only way out of the problem is the formulation of a set of explicit value judgments, which assist in the evaluation of the situation. For instance, as to what is just or reasonable or desirable may be laid down by an outside authority, legislature or the highest executive. This involves the construction of social welfare function described in the previous section. By its help, one can judge whether one situation is an improvement on the other, because the social welfare function is an indifference map ranking different combinations of the satisfaction or utility which may accrue to the various individuals in the community. But how to get the welfare judgments is a task by itself.

Assumptions and Limitations of Welfare Concept

We give below a few assumptions on which the welfare concept rests:

(i) **Measurability of Utility.** The early welfare economists assumed that utility was a quantifiable quantity and peoples' satisfaction could be measured. Man's economic welfare is said to be a sum of total of his satisfactions. Also, welfare of individuals could be added to arrive at total social welfare. But there is no objective measurement of a person's satisfaction since it is just a state of mind. Hence, according to some critics, welfare economics is hypothetical and lacks scientific character.

(ii) **Inter-personal Comparisons.** We have said that social welfare can be increased by making some one more satisfied without making any one less satisfied. But we can assess the increase in welfare only if we compare satisfaction of one with that of another. Pigou implicitly assumed inter-personal comparison, but trenchant criticism by Professor Robbins made the economists sceptical. Later writers, as we have seen, have attempted to formulate welfare theory independently of inter-personal comparison of satisfaction. This had led some economists to hold that inter-personal comparisons of satisfaction or happiness are illegitimate or unscientific. "I cannot believe," says Robbins, "that it is helpful to speak as if inter-personal comparison of utility rest on scientific foundations." Thus, assumption of inter-personal comparability of satisfactions imposes a serious limitation on welfare analysis.

(iii) **Concept of Maximum.** Welfare analysis assumes that there is a determinate maximum. But actually, there may be several optima or points of maximum satisfaction. Economic theory has concerned itself with the movement from a lower to a higher optimum. Economic welfare concerns itself with a single optimum.

(iv) **Consumer's Preferences.** It is assumed that consumer's preferences are independent of prices or other changes. This assumption is not realistic. The consumer's preferences are bound to be affected by changes in prices, or, say, changes in fashion. But the welfare economist says that if new indifference curves have to be drawn consequent on a change in price; "the diagrams of indifference maps melt into chaos."

(v) **New Welfare Economics** has given up the assumption of measurability of utility and inter-personal comparability of satisfactions. This has rendered still more difficult to judge an economic policy or economic measure on welfare grounds alone, especially a measure resulting in redistribution of income. "Our refusal to attempt inter-personal comparisons of utility makes it impossible to judge, on welfare grounds, the propriety of measures involving (or aiming at) a redistribution of income or wealth."²¹

(vi) **Normative.** Welfare economics necessarily

21. Reder, M.W.—*Studies in the Theory of Welfare Economics*, p. 20.

involves value judgment and is thus essentially normative. "Welfare economics and ethics cannot be separated. They are inseparable because the welfare terminology is a value terminology. . . . Getting rid of value judgment would be throwing the baby away with the bath water."²² This has made welfare economics less scientific. But most welfare economists contend that welfare analysis is quite scientific and does not lean on any ethical assumptions. Pigou, for instance, says that economics is both light-giving and fruit-bearing.

Conclusion. In spite of the above limitations, welfare economics has assumed great importance in recent times. The governments are looking to the economists more and more for advice and suggestions in policy matters in order to promote welfare of the community.

APPLICATIONS OF WELFARE ECONOMICS

We know that welfare economic analysis is intended to enable the economist to make policy recommendations so that social welfare is maximised. Such recommendations may cover the diverse fields of the economy. Hence, policy implications of welfare economics can be numerous. We shall just pick up a few prominent ones.

Pricing Policy of Public Undertakings. The pricing policy of public undertakings occupies an important place in a mixed economy. The price and output policy of such undertakings must be such as to maximise welfare. The optimal pricing will be one which makes prices: marginal cost ratio equal to the average prevailing elsewhere. When the marginal cost is zero, there is a prima facie case for rendering the service free. This is especially the case when there is some investment check and losses can be covered other than by marginal taxation and in an equitable manner. When average costs are considerably higher than the marginal cost, which is not small, the price charged should not be less than the average cost. But, where it is possible to finance losses, then there is a strong case for reducing prices below average cost. These undertakings should at least aim at covering total cost.

International Trade. There is no doubt that trade policies, free trade or protectionist, have welfare implications. If the post-trade position is actually better than the pre-trade position; and if the distribution of real income is not adversely affected, opening of international trade will increase welfare.

In a world of pure competition, imposition of a tariff results in mis-allocation of resources and in a reduction in net social welfare when all concerned

nations are taken together. It is assumed that the pre-tariff allocation of resources was optimal. Imposition of tariff will affect prices and result in reallocation of resources which must be presumed to reduce welfare. The tariff levying country can gain but only at the cost of other nations. However, from the point of view of a backward country free trade is not ideal. Free trade maximising welfare presupposes optimum conditions of production and exchange within all countries which is unrealistic.

Rationing

From the point of view of maximising welfare, points rationing (which gives each consumer some fixed number of ration points) is better than fixed rationing which permits a consumer to buy only a fixed quantity of each commodity. This is so because the points rationing gives a consumer a wide choice in making his purchases even though his total consumption is restricted. The ration points will replace the money prices. Welfare will be maximised when each consumer purchases commodities in such proportions that the marginal rate of substitution of any one commodity for another will be equal to the ratio of their fixed point prices. The marginal rates of substitution for all consumers must be the same.

Taxation

When a Government has to resort to taxation to raise resources, welfare will be increased if the revenue is sought to be raised through direct taxation (*i.e.*, income tax) rather than indirect taxation (*e.g.*, sales tax or excise duty). If a person pays income tax (instead of the same amount as a sales tax on the purchase of a commodity), he can still purchase the combination of goods he prefers the most out of the combinations available to him. The sales tax tends to reduce his purchases. A sales tax or excise duty distorts prices from their optimum levels and forces the consumer to reallocate his expenditure among commodities in a less desirable fashion. On the other hand, the income tax only reduces his overall purchasing power, but does not directly affect the relative prices. It does not, therefore, force him to readjust his expenditure.

There is no doubt that income tax also affects the tax payer's behaviour but it does not distort his consumption pattern; it only distorts his income earning plans. It may affect his will to work and save. However, excise duties have their own merits. They are anti-inflationary and fall on those who have a large propensity to spend.

Monopoly versus Competition. The welfare economist is opposed to monopoly since it stands in the way of optimum conditions of production and exchange. There is, therefore, strong support for perfect competition on welfare grounds. It is only

22. Little, I.M.D.—*A Critique of Welfare Economics*, 1960, pp. 79-80.

under perfect competition that both by equalising utility to the price and by equalising marginal utilities of the various items, the consumers and producers can attain an equilibrium position. A consumer will be able to maximise his satisfaction by equating his marginal utilities of purchase. The producer is able to maximise his profit by producing that output at which marginal cost equals price. The marginal cost pricing, which brings about a social optimum, is possible only under conditions of perfect competition.

National Income

The welfare economist is able to demonstrate the intimate relation between national income and welfare. Increase in national income or favourable redistribution (*i.e.*, favourable to the poor) is bound to increase the measure of welfare in the community. This can be achieved through well-known fiscal devices of taxation, bounties or beneficent public expenditure. Thus, the egalitarian principle underlying public finance is provided by welfare economics.

Socialist Ideology

Welfare economics provides a strong support to socialist ideology. Only a socialist dictatorship can bring about conditions of production, exchange and distribution which may be conducive to welfare maximization. Free enterprise economy, where conditions of perfect competition do not exist, is helpless in the matter. A strong government action is called for to establish a social optimum.

Conclusions. Above are given a few illustrations (the lists is not exhaustive) which show that welfare economics has a strong say in shaping vital economic policies and in the introduction of far-reaching welfare-increasing economic measures.

OBSTACLES TO WELFARE MAXIMIZATION

If maximum welfare is to be attained, optimum allocation of factors of production is essential. This allocation must be in keeping with the consumer's preferences. For this purpose, there must prevail perfect competition. But, in the real world, perfect competition does not prevail; instead there is imperfect competition. This constitutes a big obstacle in the way of the attainment of maximum welfare. Imperfect competition may take the form of monopoly or monopolistic competition or oligopoly. We shall see how these market forms stand in the way of welfare maximization.

Monopoly. By pursuing restrictive price and output policies, the monopolists exploit the consumers' weakness by charging exorbitant prices and by restricting output. They reduce the national income.

In all these ways, they reduce social welfare, especially because they cause mis-allocation of productive resources.

We have seen that a condition of welfare maximization is that the marginal rate of substitution between any two commodities (or, to use terms of utility analysis, the ratio of their marginal utilities) must be the same as the marginal rate of transformation between the same two commodities (or, the ratio of their marginal opportunity costs) for every producer in the economy. In this way (*i.e.*, by equating the ratio of marginal utilities of the goods with the ratio of their prices) the consumers get maximum satisfaction.

At the same time, the producers get maximum profits by equating the ratio of marginal costs with the ratio of prices. This is possible if there is perfect competition, because perfect competition ensures maximum efficiency of the economy and maximum satisfaction of the consumers. Under perfectly competitive conditions, private marginal utility or benefit tends to equal the social marginal utility or benefit on the one hand and private marginal cost and social marginal cost on the other, because the price is the same for all consumers.

The case is different in a monopoly. The monopolist faces a downward sloping demand curve (instead of horizontal straight line as under-perfect competition). Hence, marginal revenue is less than average revenue or price. In order to maximise profit, the producer will equate marginal cost and marginal revenue. But marginal revenue, we have seen, is less than price. Hence, his marginal cost is less than the price or price is kept higher than the marginal costs. Thus, the monopolist does not operate at the optimum output level. This means higher prices for the consumers and lower remuneration for the factors of production. By creating a divergence between factor price and the value of its marginal product, a monopoly distorts factor allocation. Too little resources are used in monopolised industries and too much in competitive industries producing too small quantities of certain goods and too much of other goods; which is not in conformity with consumer's preferences.

Monopsony. It is a buyers' monopoly. It compels a firm to pay higher prices for factors in case of a buyers' monopoly in a factor market. Hence, the marginal cost of the factor will exceed its price per unit. For profit maximization, the factor will tend to be used up to a point where its marginal cost is equal to its marginal revenue product. But as said above, marginal cost exceeds price. Hence, the price paid to the factor is less than marginal product. Thus, the factor is not being paid its worth, which shows a faulty allocation of factors which in turn militates against welfare maximization.

Take the case of monopsony in a product market.

e.g., a consumers' co-operative being a single purchaser of some goods. In this case, the marginal cost of the product will be higher than the price paid by the monopsonist. The quantity purchased will be smaller and the price paid lower than under competition. This results in misallocation of resources in the economy.

Monopolistic Competition. In this case, there are too many firms in the industry operating at less than optimum scales of output having excess capacity which is socially wasteful. Product differentiation compels waste. Hence, a reduction in social welfare.

Oligopoly. In pure oligopoly (without product differentiation, i.e., all firms producing identical goods), there is a misallocation of resources and hence a reduction of social welfare. In this case, a dominant firm determines the price and output policy. In order to maximise profit, the firm equates marginal cost with the marginal revenue. But the price will exceed marginal cost and distort resource allocation.

A FURTHER NOTE ON COMPENSATION PRINCIPLES

The Social Welfare Function and theory of Compensation Principles are sometimes treated as attempts to rehabilitate welfare economics and together are referred to as New Welfare Economics. This was necessary because of wide criticism of Pigovian and Paretian analyses. Pareto held that if any policy change benefited some people without harming others, it will be assumed that social welfare has increased. But in the real world, the economic situations are not so unambiguous that any policy change may benefit some people without harming others. Pareto appears to have deliberately confined his analysis to unambiguous changes in order to avoid value judgements and inter-personal utility comparisons. Kaldor, Hicks and Scitovsky introduced the theory of Compensation Principles as a reformulated criterion on Paretian foundations. The theory of compensation principles states that whenever a policy change is effected it will benefit some and harm others. In case, those who gain compensate those who lose and still be gainers, then such a policy change may be considered desirable and shall be deemed to have increased social welfare.

The theory of compensation principles is based on the following assumptions:

(a) Individuals are supposed to be best judges of their welfare; (b) changes in the level of production are assumed to affect social welfare; (c) there is no provision for interpersonal utility comparisons and cardinal measurement of utility is ruled out; and (d) production and consumption are assumed to be unaffected by external factors and individual tastes are supposed to remain constant. Let us now ex-

amine the compensation principles as enunciated by Kaldor, Hicks and Scitovsky.

Kaldor's Compensation Principle

We start with situation A. Let us suppose that a policy change results in situation B. This change results in gain to some and loss to others. If gainers gain X and losers lose Y , then the gainers have to compensate the losers. Let the gainers pay X_1 of X ($X_1 > 0$) to losers so that $X_1 = Y$. If after compensating the losers, the gainers are still left with a positive net gains i.e. $X - X_1 > 0$, the policy change is considered socially desirable and social welfare will be assumed to have increased. Thus $X - X_1$ is treated as an addition to the real income hence to the economic welfare of society making policy change from an alternative A to alternative B.

This is a simple compensation principle. It advocates a change only when it produces net overall gain. The extent to which 'section of society becomes' better off must be greater than the extent to which another section becomes worse off so that a margin is left with the gainers which puts them in a better position than before.

Hick's Compensation Principle

Hick's compensation principle is reverse of Kaldor's principle. As before, we take two alternative situations A and B and two categories-gainers and losers. If the losers bribe the gainers into not wanting a change, then the policy change may not be considered socially desirable, and as such not adding to the social welfare. If the losers cannot bribe the gainers then situation B is preferable to situation A.

The two compensation principles appear to be similar. In both the principles, gainers remain better off in the new situation. There is no marked departure from the Paretian analysis. It is an improvement over the earlier analysis by suggesting a few tests on the basis of which, after balancing positives and negatives of a policy change, we can form a judgement as to whether a policy change is socially preferable or not.

Scitovsky Compensation Principle

We may discuss this principle in two parts viz. the Scitovsky Paradox and Scitovsky Double Criterion. Scitovsky pointed out a contradiction in Kaldor-Hicks Compensation Principle. Both Kaldor and Hicks considered a movement from situation A to situation B and the benefit resulting there from. Scitovsky pointed out that a backward movement from situation B to situation A may become socially gainful by the same criterion. There is thus a contradiction which is referred to as Scitovsky Paradox. To overcome this paradox, Scitovsky provided a Double Criterion. There can be a reverse movement from situation B to situation A if the

gainers from such a move can profitably compensate the likely losers. Scitovsky therefore prescribes a double test for an economic change. One in the form of Kaldor-Hicks Principle i.e. the gainers must be in a position to compensate profitably the losers and secondly there should be no possibility of returning to the original situation. In other words, while the gainers may be able to compensate the losers, the losers should not be able to bribe the gainers to revert to the original position.

Criticism of the Compensation Principles

The compensation principles have been criticised on several grounds:

(i) These principles give an improved definition of welfare but do not provide any sound criterion to measure it. For assessing welfare, we cannot ignore income distribution. Compensation principles take a hypothetical income distribution which may be far from real.

(ii) Compensation principles are supposed to be value-free, but actually value judgements are implicit in them. The principles work if the gainers overvalue their gain than the losers value their losses. This poses a serious problem of assessing the magnitude of gains and losses which cannot be tackled without value judgement. The gainers and losers constitute heterogeneous sections of people who measure their losses and compensations differently. This creates a difficulty about balancing the losses with gainers' compensation.

(iii) Compensations are only imaginary and hardly take a practical shape. It looks theoretically plausible but hardly practicable. In actual practice, it is impossible to identify the gainers and losers and determine the compensation payable by the former to the latter.

(iv) The theory of compensation principles suffers from the same limitations as the Paretian analysis in so far as the distribution analysis is separated from the problem of production. Viewed in relation to welfare, distribution is more important than the productive efficiency of the system. The ordinal utility analysis implied in the compensation principles does not facilitate the compensations by gainers to the losers. The difficulty of measuring the gains and losses makes the theory of compensation principles more rational than pragmatic.

Conclusion. We may thus conclude that the theory of compensation principles is not of much practical value in the matter of promoting social welfare.

MARKET STRUCTURE AND SOCIAL WELFARE

In the Paretian sense, if a policy change makes at least one individual better off without making any

one worse off it is said to maximise social welfare. Let us see how this social optimum can be attained under different market structures. In this connection, we shall examine the possibility of attaining maximum social welfare under perfect competition, the monopoly, the monopolistic competition and oligopoly.

Social Welfare Under Perfect Competition

To achieve maximum social welfare, the allocation of resources would be considered efficient if marginal rate of substitution between any two commodities for a consumer is equal to the marginal rate of transformation between these two commodities for every producer. This would lead to the equality of the ratio of marginal utilities and the ratio of commodity prices for the consumers and the equality between the ratio of marginal costs and the ratio of commodity prices for the producers because the former would result in maximum satisfaction and the latter in maximum profit. This results in equality of the ratio of marginal costs because both these ratios equal the ratio of prices under conditions of perfect competition.

The conditions of perfect competition also bring about the equality between the private marginal product and social marginal product. The basic condition for maximum social welfare is that social marginal utility be equal to social marginal cost. The equality between private marginal utility and social marginal utility will depend upon the distribution of money income in the community. The distribution must be such as would equalise its marginal utilities for all the consumers. The marginal cost of producing any alternative commodity would be the same as for the one that is being produced. This will lead to equality between private marginal cost with private marginal utility and hence the social marginal utility and social marginal cost. This is how conditions of perfect competition result in the attainment of maximum social welfare.

Monopoly

Since conditions of efficient allocation of resources as explained above do not exist in a monopoly, it does not lead to maximum social welfare. The monopoly equilibrium is based on the equality of marginal revenue and marginal cost. We know that under conditions of monopoly price is greater than marginal revenue of output. It follows therefore that price is higher than marginal cost too. The inequality between price and marginal cost represents the violation of the basic condition of efficient allocation of resources and hence of maximisation of social welfare. Under monopoly, the entrepreneur neither achieves optimum levels of output nor does he seek it. Also, a productive factor is not paid according to its marginal product because price exceeds the marginal cost of a commodity.

Since productive factors do not get paid according to the principle of marginal productivity under monopoly, they are not attracted to this form of business enterprise to the fullest extent, whereas in the interest of maximum social welfare, factors must be employed where their marginal productivities are highest. It is thus clear that monopoly type of market structure is not consistent with the maximisation of social welfare.

There are some other obstacles too to the attainment of maximum social welfare under monopoly. Whatever the form of monopoly, whether in the commodity market or in factor market or buyers' monopoly (i.e. monopsony), it works as a hindrance to the fuller utilisation of resources. For instance, trade unions pressure curtails employment opportunities and high labour costs stand in the way of expansion of industry to the optimum limit which means that other productive resources too are not fully utilised. Not only are these resources misallocated but it is also detrimental to social welfare. Thus monopoly market form is not conducive to the attainment of maximum social welfare.

Monopolistic Competition

Under monopolistic competition, efficient allocation of resources is not possible as under perfect competition. Under monopolistic competition, the demand curve is not tangential to the average cost curve at its lowest or optimum point. On the other hand, demand curve is tangential to the average cost curve at a point higher than the optimum scale point. Since the levels of output produced are not optimum, the allocation of productive resources under monopolistic competition cannot be termed efficient. On the other hand, there is under-utilisation of capacity. If social welfare is to be maximised there must be fullest use of the installed capacity.

So far as there is product differentiation, monopolistic competition is better than perfect competition from the point of social welfare because variety in the products is calculated to give better satisfaction to the consumers of diverse tastes and temperaments. If the excess capacity under monopolistic competition is diverted to the production of a variety of goods, it will promote greater social welfare than it would be possible under perfect competition.

Oligopoly

Under oligopoly, there is misallocation of resources. That is why oligopoly is not considered consistent with the achievement of maximum social welfare. Misallocation of resources is due to the fact that a single firm determines the price of the commodity for the entire industry. This price is calculated to yield maximum profit i.e. where firm's marginal cost is equal to marginal revenue. Since

price is higher than the marginal cost, it results in the misallocation of productive resources in the economy. When there are several competing firms, there is too much of product differentiation and unnecessary competition among the firms. This unwarranted competition causes considerable misallocation of resources and leads to considerable wasteful expenditure. Hence oligopolistic market structures do not promote social welfare.

Conclusion

We may thus conclude that perfectly competitive markets are consistent with the attainment of maximum social welfare. On the other hand, monopoly, monopolistic competition and oligopoly do not promote social welfare because of some inherent characteristics. The main reason is that efficient allocation of resources is possible under perfect competition but not under other market structures. But since under competition only standardised goods are produced, they do not yield perfect satisfaction to the consumers. Monopolistic competition, on the other hand, causes misallocation of resources but satisfies consumers' tastes and preferences better because of the variety (product differentiation) of the products turned out.

FISCAL POLICY AND SOCIAL WELFARE

In considering the impact of fiscal policy on social welfare we shall take income and tax structure. Let us first see the impact of income distribution.

Impact of Income Distribution on Social Welfare

It is generally believed that more even distribution of income promotes social welfare. We assume that monetary income is an index of real income, although price variations cannot be ignored altogether. Price variable may be kept constant assuming that the State assures an optimum distribution of goods through a public distribution system or other policy measures. Subject to these assumptions, we may say that optimum distribution of money income is conducive to maximisation of social welfare.

Take a situation A with a given income distribution and levels of satisfaction. Any change in this situation would be undesirable if (a) it makes some people more worse off than those whom it makes better off, and (b) if the losses of the losers and the gains of the gainers balance with each other leaving the society at a level, which in totality is not better off than the situation A. On the other hand, if a change in money income distribution makes at least some people better off without making any one worse off, it may be considered a desirable change on welfare grounds.

We can make use of the law of diminishing marginal utility of income in determining the effect of a shift in income distribution on social welfare.

From the point of view of social welfare, we have to see that in any redistribution of money income the marginal utility of gainers is higher than the marginal utility of the losers. Until that happens income redistribution would be desirable for promoting social welfare.

However, it is not certain that equalisation of marginal utilities of all the individuals would tend to maximise the total satisfaction and hence welfare of society. We may have to be content with the maximisation of the probable total satisfaction with an egalitarian distribution of income. In other words, for the purpose of maximisation of social welfare it is desirable that there should be income redistribution from the rich to the poor i.e. from those with less marginal utility to those with higher marginal utility.

Impact of Tax Structure on Social Welfare

It goes without saying that social welfare is vitally affected by the tax structure of a country. There is no doubt that individual welfare is adversely affected by taxation. In the absence of a tax, an individual would have derived much greater satisfaction from his money income. But we cannot be sure whether society as a whole would benefit from the abolition or reduction of taxes. If taxes are reduced money incomes would increase. But if output and employment levels remain unchanged prices will rise. Rise in prices will harm the low income groups. Their standard of living will fall and social welfare will decrease.

When taxes are aimed at providing funds for economic development and public utility projects or for promoting efficient utilisation of resources, they are welfare promoting. Welfare is affected by the type of commodities taxed. If a tax is levied on commodity A and not commodity B those who consume more of A and less of B will suffer and those who use less of it and more of B will benefit. That is why compensation principle is advocated to increase social welfare. The losers should be compensated by subsidies and other concessions so that they are not worse off than before the tax is levied. If after this, some people still enjoy better levels of satisfaction than before, the tax may be regarded as welfare increasing rather than welfare decreasing. We usually find that public utility projects benefit the society at large though taxes are not levied on all sections of society. But the fact that taxes may enable the reorganisation of resources in such a way that those who pay taxes are not worse off than before and at the same time promote welfare of others makes the tax ideal for welfare.

All taxes, direct and indirect, sales tax and excise duties are levied in the interests of public good but there are some gainers and some others losers from the tax which necessitates compensating practices so

that total welfare is not reduced. A careful study has to be made of the incidence of various taxes in order to find out which are conducive to social welfare. Pros and cons of each tax have to be weighed. In this way, fiscal policy should be designed so as to maximise social welfare either by increasing the satisfaction levels of all people or at least of some of them without reducing that of others.

Arrow's Impossibility Theorem

Arrow's Impossibility Theorem has dominated the discussions on welfare economics in recent years. It is well recognised that welfare as a concept is broadbased and depends both on economic and non-economic variables. Measurement in welfare economics is not easy. We cannot quantify all that falls within the scope of welfare economics in spite of increasing use of mathematics in economics.

In the new welfare economics, stress is laid on social welfare and not on individual welfare. But social welfare function is much more complex than individual welfare function. The individuals' welfare, though subjective can be made objective through his choice. But the choice criteria cannot be applied to social welfare, as we cannot think of a social choice. The society consists of individuals whose choices are seldom uniform. The problem therefore is how to make social decisions consistent with individual preferences. Kenneth Arrow has provided lucid analysis of this problem. He has demonstrated that it is impossible to make social decisions consistent with individual preferences on the basis of a majority vote as in a democratic set up. This is his Impossibility Theorem.

If, however, we make certain reasonable assumptions about human behaviour, it would be possible to construct a social welfare function that may satisfy some reasonable conditions. According to Arrow an effective social welfare function must satisfy the following conditions:—

(i) One condition is that social choices must be consistent. For instance, if choice A is preferred to choice B and choice B is preferred to C then choice C must not be preferred to A. In other words, if an equal proportion of people prefer A to B, B to C and also C to A, then social choices are not consistent or transitive, and in such a case no social welfare function can be constructed.

(ii) Another condition is that a social welfare function should be non-responsive to perverse changes in individual preferences. If, for instance, in an initial ordering of the choices, an alternative is selected to reflect the social choice, this must not be altered because some individuals have changed their preferences or ranking of other alternatives. Even when a social welfare function is revised an alternative may be given a higher rank but in no case a rank lower than one given to it initially.

(iii) A social welfare function must include only those choices or preferences which are capable of being realised. It should not be dependent on irrelevant or impossible individual choices.

(iv) The individuals should have full freedom to express their choices or ranking of alternatives. That is, a social welfare functional should not be dictatorial. No one individuals' choices should be permitted to determine the social welfare function.

(v) Social welfare function must not be imposed on a community either by custom or by constitution. The individuals should be free to express their choices.

Arrow was guided by two conventional axioms in formulating these conditions viz., (a) Individual preference can be ranked and (b) every individual

rank his preferences in a consistent fashion. Thus Arrow developed the conditions of consistency and non-perversiveness of individual choices in a social welfare function. Arrow's Impossibility Theorem states that it is impossible to formulate a social welfare function which does not violate at least one of the above mentioned conditions.

Conclusion

We may conclude by saying that Arrow's Impossibility Theorem is an outstanding contribution to welfare economics. But it has its own limitations which mainly arise from the conditions he has laid down. If some of these conditions are relaxed a bit, it may be possible to construct a social welfare function.