41 CRITIQUE AND RELEVANCE OF KEYNESIAN SYSTEM

KEYNES vs. CLASSICAL ECONOMISTS

While discussing Keynes's theory of income and employment, we have had often to refer in this connection to the classical economists. We may at this stage sum up the main differences between Keynes and the classical economists:

(i) The most important difference is that the classical economists said, according to Say's Law, that the economy was in a state of stable equilibrium at full employment. It might for a short time depart from full employment, but the equilibrium would be restored through wage adjustments. Keynes, on the other hand, said that, barring periods like wars, there was seldom full employment and the equilibrium was mostly at less than full employment.

(ii) Keynes's theory relates to Macro-Economics, which studies the economy as a whole but the classical economic theory dealt with individual aspects of the economy and was Micro-Economics. Keynes dealt with aggregates, whereas the classical economists studied the economic system in terms of its innumerable decision-making units, *e.g.*, consumer's equilibrium, producer's equilibrium, equilibrium of the firm, and so on. Keynes dealt with the general price level, instead of the price of an individual commodity. His concern was with the level of employment in the community, instead of the employment of any particular class of labour.

(iii) The classical economists believed that a state of full employment could be brought about through cuts in money wages, and whatever the state of demand, there will always be, via wage adjustment, a tendency towards full employment.

But Keynes held that this theory was not only unrealistic but theoretically unsound. According to Keynes, lowering of wages in any particular industry might increase employment there. But, if wages were reduced all round, it will reduce income and so effective demand and the volume of employment. In these days of democracy and trade unionism, only a foolish government would allow wage reductions.

(iv) According to classical economists, interest is the reward for 'waiting' or for time preference. But according to Keynes, it is a reward for parting with liquidity. The classical theory of interest states that the rate of interest is determined by the intersection of the saving and investment schedule. The Keynesian Theory gives us a set of liquidity preference schedules at various levels of income. These, together with the supply of money fixed by the monetary authority, give us a curve that tells us what the various rates of interest will be at different levels of income.

(v) The classical theory is based on the conception of static economy, whereas Keynes's theory is dynamic. The classical economists concentrated on equilibrium at a certain time, but Keynes introduced future expectations into economic analysis and thus analysed a dynamic economy. Keynes is thus realistic, whereas the classical economists all the time dealt with an unrealistic picture.

(vi) Keynes's theory is a general theory and as such has a very wide application to all situations —unemployment, partial employment and near full employment. The classical analysis relates only to full employment. They thought a general and permanent unemployment was impossible. They believed that wage flexibility provided a self-adjusting mechanism which made for full employment. Hence, all their theories are based on the assumption of full employment—a thoroughly unrealisitc proposition.

(vii) Keynes integrated the theory of money with the theory of value and output. The classical economists segregated these theories from one another and dealt with them as if they were unrelated to one another, which is actually not the case. Here again, Keynes is more realistic, whereas the classical econ-

omists were all theoretical and dealt with abstract situations. Money supply affects output and employment. Hence, the theory of money and prices cannot be isolated from the analysis of income and employment in the country.

(viii) The classical economists believed in orthodox finance and balanced budgets. But, according to Keynes, a country's budget should reflect the financial situation and should vary as the situation demands. There is no special virtue in a balanced budget. There are times when a deficit budget is dictated by the economic situation prevailing at the time. That is why deficit financing is the common feature in all developing economies.

(ix) According to the classical economists, increase in money supply brings about inflation and must, therefore, be avoided. This arose from their contention that there always existed full employment. But Keynes pointed out that full employment was a rare phenomenon; actually there was generally less-than-full employment so that some productive resources of the community lay idle and unemployed, totally or partially. That being so, an increase in money supply would increase employment and output and may not thus necessarily result in inflation.

Thus Keynes's theory has greater relevance to the world of reality and has great practical value; whereas the views of the classical economists are more or less theoretical and devoid of any practical importance.

These are a few points of departure of the Keynesian theory from the classical theory. In fact, Keynes's theory is entirely new and marks a revolution in economic thinking. It has been aptly called a **"Keynesian revolution".**

CRITICISM OF THE KEYNESIAN THEORY

Keynesian theory does not represent the last word in economic thinking as it is sometimes supposed. On the other hand, the Keynesian theory can be criticised on the following grounds:

(i) Some economists, *e.g.* Schumpiter, say that the Keynesian theory is really 'depression theory' and as such has limited application and has little relevance to general economic situation. But "his (Keynes's) models clarify both deflationary and inflationary episodes and prosperous and depressed economies".

(ii) It is said that Keynesian theory is a theory of capitalist economies. It is said that "if Communism comes, Keynes will be a dead as Ricardo". However, even the Socialist countries strive to raise their national income and have to use the Keynisian tools like savings, investment, consumption function marginal efficiency of capital, and so on.

(iii) It is further pointed out that the Keynesian theory is not sufficiently dynamic and it may more properly be called comparative statics. Thus it is not much different from the classical theory. Keynes does not use the concept of time-lag.

(iv) The Keynesian model is too static in character. It assumes the amount of capital to be fixed and the output as a function of employment only. The model fails to explain short-run fluctuations.

(v) It is also held that Keynes altogether ignores Micro analysis and as such is not helpful in the solution of the problems of individual firms and industries. The Keynesian theory is altogether a Macro theory concuring itself with national income and employment. The Keynesian theory is too aggregative.

(vi) The Keynesian theory has not given any place to the accelerator principle. But we know an integration between the multiplier and the accelerator is essential to explain adequately the economic problems.

(vii) It is also said that the Keynesian theory is largely a monetary theory since it pays excessive attention to money in economic analysis.

(viii) Shortcomings can also be pointed out in the various aspects of the Keynesian theory: For example, his interest theory is indeterminate and the theory of consumption function is inadequate.

(ix) The economists also question the various assumptions underlying the Keynesian model *e.g.* the assumption of a stable consumption function, the assumption that the aggregate production function is based on the law of diminishing returns, the assumption of fixed money wages and fixed speculative demand, schedule for money. Also, as Shapiro has observed, the Keynesian model is wrong in assuming that the supply of capital is available in unlimited quantity at the given rate of interest.

Retreat from Keynesianism: Supply side Economies

Keynesian theory has dominated economic thinking for nearly 50 years. But in view of the criticism of the theory in recent years, a major revalt ation in economic thinking is now under way representing a retreat from the Keynesian theory. Even in his time there were serious doubters but Keynes's brilliant and highly intellectual and persuasive exposition made them lie low. Economists like Milton Friedman and Friedrich Hayek rejected Keynesian conclusions. In the thirties, the British and American economies had been experiencing an unusually high rate of unemployment and depression and Keynes's theory seemed to have a great relevance as a corrective prescription for prolonged unemployment. But his ideas were not found appropriate for the U.S. economy of 1960's and 1970's. Hence retreat from Keynesian economics began in American universities. Some of this thinking is reflected in what has come to be called 'Supply side' economic

Slow economic growth, persistent inflation, diminishing increases in productivity have focussed increasing attention to supply-side economics. This new economic thinking emphasises measures to increase production as opposed to consumption. Keynesian economics was demand-oriented economics, whereas supply-side economics is supply or production-oriented economics. Supply-side theory puts emphasis on stimulating production side of the economic equation by means of *substantial tax cuts and reducing government spending as key incentives for individuals and businesses to produce, invest, work and save more, and imposition of non-inflationary monetary policy*. Professor Arthur Laffer of Southern California, a leading proponent of supply-side economics has in effect introduced what is known after his name as the **Laffer Curve** with the help of which he shows how to determine the optimum rate at which taxes can be set to maximise government revenue via increase in productor supply. He maintains that "Supply-side economics is nothing more than classical economics in modern dress." J.B. Say, a 19th century French economist laid down a law "supply creates its own demand". This law is the essential enactment of supply-side theory.[1] To use Dr. Laffer's words again. "Basically, supply-side economics is that brand of economics that focusses on very personal and very private incentives." with a view to increasing production and productivity and promote private savings.

It has been pointed out that supply-side economics has historical roots dating back to Adam Smith, who was known as father of political economy and who advocated a policy of Laissez-faire or government non-intervention in economic sphere to create a free market and give other incentives that will spur greater economic growth. This is in contrast to the prevailing Keynesian approach which emphasises the need for government to manage and manipulate through fiscal and monetary policies-aggregate demand so as to maintain full employment. Supply-side economists say that the government cannot really do this! This is too much for the government. But if private enterprise is permitted to function freely with minimum of government interference, it will innovate, produce more, save more and invest more so as to create requisite demand for the goods it produces. This will undoubtedly stimulate economic growth and increase national income and employment. Supply-side economics looks at the economy from the ground level, as it were, from the point of view of the enterpreneurs who are the prime movers. In contrast to this, Keynesian economists look at the economy from the above-from the stand-point of a government which is supposed to intervene, in its omniscience, intervene discretely to *preserve* a harmonious economic universe.

1. See *Impact*, Number 35, Supply-side Economics Innovative Ideas.

Conclusion

It is well to remember, however, that we cannot think of demand and supply to the exclusion of one or the other. They are really two sides of the same coin co-existing of necessity and there is no question of choosing the one or the other. It is only a question of emphasis depending on the prevailing economic climate.

SIGNIFICANCE OF THE KEYNESIAN THEORY

In spite of the criticism levelled against the Keynesian theory by some economists, the fact cannot be denied that it has great significance even today. It has continued to exercise considerable influence on economic thinking almost all the world over. The Keynesian theory has both theoretical and practical importance. Since the various points relating to them have been already discussed in the previous chapters, we shall dwell on these two aspects of this theory in a summary fashion.

Theoretical Importance

(i) Keynes must be given the credit for starting the macro-approach to the study of Economics. Before him Economics was studied and taught only from the micro-approach, *i.e.*, from the point of view of individual study, *e.g.*, the price of an individual commodity, the equilibrium of an individual firm and industry, how an individual consumer gets maximum satisfaction, and so on. But, thanks to Keynes, the study of Economics is now dominated by macro-approach in which economy is studied as a whole. It is, in short, an aggregative study. In fact, Keynes has brought about a revolution in economic thought, called Keynesian revolution.

(ii) Keynes has completely demolished the idea of full employment equilibrium so elaborately built up by the classical economists. Instead, he put forward the idea of under-employment equilibrium. He proved that the economy of a country is generally in equilibrium even though there is under-employment. He showed how employment could be increased by increasing investment.

(iii) The economists of today have got from Keynes several new tools of economic analysis which enable them to draw correct conclusions. Some of these tools are consumption function, the multiplier, the investment function, liquidity preference, and so on. These are now the current coins of the science of Economics. They are valuable allies of economists in the study of an economic system

(iv) Keynes integrated the theory of money the theories of value and output which when studied in an isolated fashion, led to one-sided and incorrect conclusions. The monetary theory now studied from a realistic and practical point of view. Thus, this study has been made more fruitful

(v) Another service that Keynes has rendered

Economics is the introduction of the dynamic element in its study. Before him, the classical economists made it a study of economic statistics in which the economy was supposed to remain standstill. The assumption of motionlessness was made to facilitate the study of the effects of a single change. The result obviously was to make the whole study unrealisitc and devoid of any practical value. Keynes made the study of Economics dynamic by introducing future expectations in the analysis of business activity.

(vi) Moreover, Keynes introduced in economic analysis the concepts of inflationary gap and deflationary gap, showing respectively excess or deficiency of aggregate demand. With their help, the analysis of economic fluctuations was not only made more intelligible but it also suggested practical remedies to bring about economic stability at higher levels of output and employment.

(vii) Keynes brought out the importance of investment as an important determinant of aggregate employment in the community. He explained that, since consumption habits of the people were more or less stable, output and employment could readily be increased by increasing investment. The marginal propensity to consume being less than unity, (*i.e.*, as income increases, consumption does not increase by as much as the increase in income), it brings out the crucial importance of investment.

(viii) Keynes' is a general theory and not a particular one applying to a particular type of economic system. His theory applies to all economic situations, whether full employment or under-employment.

Practical Importance

(i) The classical economists believed in the policy of laissez-faire but Keynes showed how this policy was utterly unsuitable to modern economic conditions and how inadequate this policy was to cure the economic ills from which a community might be suffering. The influence of Keynes on government policy can be seen from the increasing intervention of the State in the interest of promoting general welfare. Keynes showed that full employmet could only be achieved through State help, because effective demand could only be increased by enlarging State activity. Thanks to Keynes, the policy of laissez-faire is dead and gone.

(ii) Another way in which Keynes influenced practical policies was by criticising the policy of surplus budgets. He advocated deficit budgeting, if that suited the economic situation in the country. Thus, surplus budgeting is no longer regarded as sacrosanct.

(iii)Keynes put great emphasis on suitable fiscal policy as an instrument for checking inflation and for increasing output and employment in a community. Thus, extensive public works programme now forms an integral part of government programme in all countries for expanding employment opportunities.

(iv) Monetary policy, as an instrument of controlling cyclical fluctuations, received due attention from Keynes. He also pointed out the limitations of monetary policy. Central banking control over credit now occupies a very important place in the economic policies of a nation. These are the weapons taken from Keynesian armoury of economic instruments.

(v) Again, it was due to Keynes that deficit financing has come to play an important part in the economic development of under-developed economies. Keynes showed how deficit financing (*i.e.*, creating new money) could be used for a time to further economic development, if it is kept within proper limits,

(vi) Keynes completely demolished the classical doctrine which said that employment could be increased through wage cuts. Keynes refuted the theoretical validity as well as practical feasibility of wage-cut as a means of promoting full employment. He cautioned the governments against the dangers of such a policy.

(vii) We owe it to Keynes that the economists and governments today give a lot of attention to social accounting. We now see that, in every country, statistics of national income are being collected. This enables a suitable economic policy to be evolved and adopted.

Conclusion. We, thus, see that Keynesian theory has exercised tremendous influence not only on economic theory but also on economic policy. We find today that, on the one hand, economists conduct economic analysis on the basis of Keynesian theory (in fact Keynes has given birth to what is called Keynesian Economics) and, on the other, the governments are increasingly relying on Keynesian Economics for tackling their economic problems.

RELEVANCE OF KEYNESIAN ECONOMICS TO UNDER-DEVELOPED ECONOMIES

In order to see how far Keynesian income and employment analysis is relevant to under-developed economies, we have to bear in mind the assumptions on which this analysis is based. We have, therefore, simply to see how far the assumptions underlying Keynesian analysis are valid in the case of under-developed countries. To the extent that they do not hold good in the case of under-developed countries, the Keynesian analysis will not have relevance to such countries.

The assumptions on which the Keynesian theory of income and employment is based are of two types: (a) the assumptions which are associated with

the multiplier and (b) those which are required for a short-term analysis and do not apply to the long-term analysis. We first take the latter type, *viz.*, those which are needed for a short-term analysis. Keynes assumes that capital equipment, technology, organization, the working force and its efficiency in a country are constant and do not vary. He considers that the problem relating to income and employment in developed countries arises only on account of the deficiency of demand.

But the problem in the case of under-developed countries is to increase capital equipment, to improve technology and labour efficiency because only in this way can the level of income and employment in such countries be raised. The problem of unemployment or under-employment in the developed countries is a short-term problem since it arises from a deficiency of effective demand at a particular period of time. As soon as this deficiency is removed by monetary or fiscal measures or through a public works programme, the problem is solved. But, in the case of under-developed countries, the problem is chronic because capital formation, improvement of technology or of labour efficiency is a long process. Keynes regards these things as given. That is, what an under-developed economy requires, Keynes just assumes away.

Let us take the case of India. The basic cause of under-employment and unemployment in an under-developed country like India is to be found in the dearth of capital equipment, which, in turn, is due to low rate of saving and investment. The various policies like public works, deficit spending, *etc.*, advocated by Keynes as a cure for unemployment do not seem to have any relevance here. They have relevance only if unemployment is due to deficiency of demand as is the case in developed economies. In such countries, there is no dearth of capital equipment and of workers willing to work, so that an increase in government expenditure financed by deficit financing leads to an increase in output and employment. But, in under-developed economies, though there is no shortage of man-power, capital equipment is scarce and an increase in government spending is more liable to create inflation rather than lead to an increase in output. This happens because, for want of complementary resources in capital, the supply curve of output tends to be inelastic. Thus Keynesian analysis is not much helpful to an under-developed economy.

Let us illustrate it by referring to major sectors of the economy of an under-developed country. Agriculture is the predominant occupation in backward countries contributing to national income to the extent of fifty per cent or even more. Suppose the government tries to bring about an increase in national income by deficit spending. This will lead to increase in demand for food, as at low income level, income elasticity of demand for food tends to be high. But the supply curve of agricultural output in under-developed countries is notoriously inelastic. There are several bottle-necks in increasing agricultural output which arise because of extremely uneconomic size of holding, lack of efficient tools and implements. Thus an increase in the demand for food arising out of deficit financing is more likely to raise the prices of foodgrains rather than the supply of output. Similarly, in the industrial sector also, there is no idle capacity to be utilized, and, for these reasons, reliance of Keynesian remedies to remove unemployment and under-employment will simply plunge these countries into an inflationary spiral.

Now let us take the other type of assumptions underlying the Keynesian analysis, *viz.*, the assumption relating to the multiplier. For instance, Keynes assumes that in an industrial economy the supply curve of output is elastic. That is why he takes it for granted that when the Government spending increases demand, the supply of output will also increase. There is no difficulty in this because there is no deficiency of capital equipment and other productive resources. There exists in the economy excess capacity, *i.e.*, productive capacity which is lying idle for want of adequate demand. Another assumption is that the supply of working capital, raw materials, *etc.*, is also elastic and can also be increased without difficulty. This, however, is not the case in under-developed countries which suffer from all types of shortages.

Still another assumption underlying Keynesian analysis is of involuntary unemployment which means that people are willing to work but they do not get work. The working of the multiplier is based on such assumptions. Only on these assumptions can a multiplier increase income and employment. That is, the principle of the multiplier states that when a new investment is made, the incomes of productive factors will increase and the demand will increase. Keynes assumes that the supply of goods is elastic, since there is excess capacity in the economy and working capital and raw-materials can be increased. It is only on these assumptions that output can be increased and workers willing to work will be able to get jobs, and income and employment will increase manifold in accordance with the multiplier.

But these assumptions do not hold good in the case of under-developed countries like India. These countries are not predominantly industrial. On the other hand, they are predominantly agricultural, hence the supply of goods is not elastic; nor is there any excess capacity in the economy, because there is great scarcity of capital equipment. Nor can the working capital, raw material, *etc.*, be increased. Also, most of the people are self-employed and the number of workers engaged on wage is comparati-

vely small. The national output mostly is meant for domestic consumption and not for the market; there is also lot of disguised unemployment. In all these respects, the under-developed countries are different from developed countries. The Keynesian theory, on the other hand, is applicable to developed countries because all these assumptions hold good in their case. The case of under-developed countries is entirely different. They cannot, therefore, derive any help from the application of the Keynesian theory.

The multiplier does not work under the conditions found in under-developed countries. Suppose new investment is made in such countries, there is no doubt that increased investment will lead to establishment of new factories; workers will also get jobs; ther incomes will increase; thus demand will increase. But the chain stops here. Although demand has increased, the supply of goods cannot increase because there is no excess capacity and the supply of productive factors, specially capital, is not elastic. Hence, increased income will only be absorbed in enhanced prices without creating any additional output and employment. The primary increased income following a given increment of investment does get spent to a large extent on the output of agriculture and leads to a corresponding increase in the incomes of the agricultural producers. But it is not followed up by these producers increasing their output and thus adding to both employment and real income.

There is another thing to be found in the under-developed countries, *viz.*, that increased income in such countries is spent on consumers goods because propensity to consume in such countries is very high. The bulk of increased income is absorbed in increase in demand for food, because their income elasticity for demand for food is generally very high. As a result, the marketable surplus is reduced. This also raises prices in such countries. If there is any surplus income, it is spent on consumers goods but their supply cannot be increased. Hence their prices also rise. In this way, inflationary spiral starts both in the agricultural and the industrial sector. This has happened in India. Mounting investment undertaken under the five year plans financed by deficit financing has raised prices all round. The multiplier has not worked; neither the agricultural output nor the industrial output has increased; but the prices have continued to soar higher and higher. We, therefore, find that the Keynesian remedies to remove unemployment and under-employment in backward countries will only plunge them into an inflationary spiral.

As we have already mentioned, in underdeveloped countries there is no involuntary unemployment in the Keynesian sense; yet millions of people are unemployed in the clearly economic sense as in the case of disguised unemployment. As Dr. V.K.R.V. Rao observes, "The particular form which unemployment takes in the under-developed countries, *viz.*, that of disguised unemployment makes the economies for Keynesian purposes practically analogous with one of full employment and to that extent prevents the multiplier from working in the direction of an increase in either output".

We should not, however, conclude from the above discussion that Keynesian remedies have no place at all in under-developed countries. Deficit financing, for instance, has a definite role to play in such countries for mobilizing resources for the public sector. Only, in resorting to Keynesian policies, we must bear in mind the inflationary effects and use it with all possible caution, keeping it within proper limits. If inflation occurs, strong measures should be taken in time to cure it as India has done recently with great success.

The basic solution for the problem of unemployment or under-employment in the under-developed countries is economic development. Economic development, however, is a long-term process. In a way, it depends on capital formation, which, in turn, depends on the surplus of income over consumption of the community. The greater the surplus, the faster will be the rate of growth, if there are entrepreneurs to utilize the resources for capital formation. To save more and to consume less, therefore, is a good remedy for under-developed economies, whereas for an advanced economy the opposite is the case during a depression. The Keynesian remedy is primarily for fighting depression.

While Keynesian policies may not have much relevance to the problems of under-developed countries, the tools of analysis developed by Keynes are indispensable even for under-developed countries. The discussion of monetary flows, the concepts of national income accounting, the problems of inflationary gap, *etc.*, are as useful to an economist in an under-developed country as to one in a developed country.

Conclusion

We may, thus, conclude that Keynesian economics, though originally developed to fight depression, has a good deal relevance to an under-developed country. Hence, these countries have lot to benefit from the study and application of policies advocated by the late Lord Keynes.

42 DETERMINANTS OF INCOME AND EMPLOYMENT: PROPENSITY TO CONSUME

It must have been clear from the previous two chapters how equilibrium level of income and employmen is determined. We have seen that in the position of equilibrium aggregate demand and aggregate supply in the economy are equal to each other. Also, aggregate demand is the sum-total of two types of demand: (a) consumption demand and (b) investment demand. In this chapter, we shall explain consumption demand. We shall study the factors which determine consumption demand, and we shall see what law can be enunciated in this connection. Consumption demand plays a very important role in the determination of the level of employment and income. Normally, if in a country consumption (or propensity to consume) is high, employment and income will increase, and vice versa. Hence, it follows that an effective way of increasing employment and income in a country is to adopt such measures as to increase consumption or strengthen propensity to consume.

Let us study the propensity to consume in some detail.

CONSUMPTION FUNCTION

Propensity to consume is also called 'consumption function'. In the Keynesian theory, we are concerned not with the consumption of an individual consumer but with the sum total of consumption spending by all the individuals. However, in generalising about the consumption behaviour of the economy, as a whole, we can draw some useful conclusions from the study of the behaviour of a normal consumer which may well be valid for the consumption behaviour of the economy also. Our observations about the consumption behaviour will help us immediately to generalise about the saving behaviour of the economy also, for saving equals income not consumed. Aggregate consumption depends on Consumption Function or propensity to consume, as it is called.

Meaning

The distinction between consumption and consumption function will make the meaning of consumption function clear. Consumption means the amount spent on consumption at a given level of income, but consumption function or propensity to consume means the whole of the schedule showing consumption expenditure at various levels of income. It tells us, in short, how consumption expenditure increases as income increases. The consumption function or propensity to consume, therefore, indicates a functional relationship between two aggregates, *viz.*, total consumption expenditure and the gross national income. It is a schedule that expresses relationship between consumption and disposable income.

Normally, when income increases consumption also increases but by less than the increase in income as we shall explain in Keynesian Psychological Law given below.

Factors Influencing Consumption

Consumption spending of the people is influenced, among others, by the following factors:—

(a) the real income of the individual,
(b) his past savings,
(c) rate of interest.

Of these, the influence of real income seems to be the strongest of all. For a great majority of people, past savings are very small and they too are for specific purposes like contributions to social security schemes, pension and provident funds and life insurance. These savings are not readily available for spending by the individuals. Therefore, their influence on current consumption seems to be negligible. The rich, who have sufficient savings, can satisfy their current needs adequately out of their current incomes; hence their consumption spending is not greatly affected by their past savings.

As regards an increase in the rate of interest, it may encourage some people to save more because the saved money now earns a higher rate of interest. But if a person is saving for some specific purpose a given sum at a future date, an increase in the rate of interest enables him to accumulate the given sum with lower current savings. Suppose I need 105 rupees at the end of one year. Now if the rate of interest is 5 per cent, I have to save 100 rupees to get Rs. 105 at the end of the year but if it is more than 5 per cent I need save less than 100 rupees. Hence, the net influence of the rate of interest seems to be indeterminate. This leaves income as the major determinant of consumption spending.

Average and Marginal Propensities to Consume

The relationship between income and consumption is measured by the average and the marginal propensities to consume. The average propensity to consume is a relationship between total consumption and total income in a given time period, while the marginal propensity to consume measures the incremental change in consumption as a result of a given increment in income. In other words, average propensity to consume is the ratio of consumption to income. But the marginal propensity to consume is the ratio of change in consumption to the change in income. Thus

$$\text{apc} = \frac{C}{Y}$$

where C stands for consumption and Y for income;

$$\text{mpc} = \frac{\Delta C}{\Delta Y}$$

ΔC is incremental change in consumption.

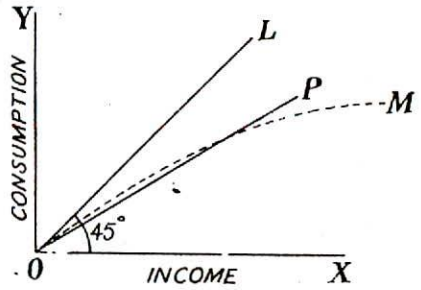
ΔY is incremental change in income.

The normal relationship between income and consumption is such that when income increases consumption also increases, but by less than the increase in income. In other words, in normal times, the marginal propensity to consume is less than one. It is drawn as a straight line with a slope of less than one. This slope indicates the percentage of additional disposable income that will be spent. It is less than one or unity, because it is assumed that the whole additional income is not spent, *i.e.*, a certain percentage of it is spent and the remainder is saved.

Take the following table:— *(Rupees)*

Income	*Consumption*	*Saving*
100	75	25
120	90	30
140	105	35
180	135	45
220	165	55

The figures of the above table have been plotted in the diagram Fig. 42.1 where income is represented on the X-axis and consumption on the Y-axis. OL is the line which makes an angle of 45° with



Income-Consumption Relationship
Fig. 42.1

both the axes and any point on this straight line will be equidistant from both the axes. Should the income-consumption curve coincide with this line, it will mean that the marginal propensity to consume is equal to one which is not normally true. Hence, the income-consumption curve OP lies below the 45° line through its entire length. The marginal propensity to consume will be measured by the tangent of the angle that the income-consumption curve makes with X-axis, *etc.*,

$$mpc = \tan \angle POX$$

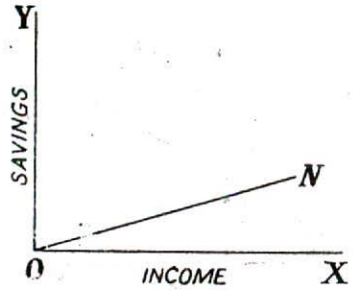
The curve as we have drawn turns out to be a straight line rising from the origin, which means that the marginal propensity to consume is constant throughout. This, however, need not be so and the curve may well become flatter as income rises, for as more and more consumption needs have been satisfied, a greater share of an increase in income than before may be saved. The dotted curve OM represents such a relationship showing that as income rises, marginal propensity to consume becomes smaller and smaller.

There is some level of disposable income at which the entire income is spent. This is often called a "point of zero savings". Below this level of disposable income, the consumption expenditure will exceed the disposable income. There may be cases in which the consumer has no income at all. In such cases, the income-consumption curve may not rise from the origin but from farther left showing that when income is zero, consumption is not zero and that the individual is living on his past savings. These complicated cases, however, we are not going to consider. From individual consumption-income relation, we can construct a consumption-income curve for the economy as a whole.

Propensity to Save

The income-consumption relation can be used to derive also the savings-income relation, for income not consumed is income saved (see the table in first column). Now plotting savings on Y-axis and

income on X-axis, we get the savings-income curve ON in diagram 42.2. Savings corresponding to a



Savings-Income Curve
Fig. 42.2

given level of income can also be read off from the distance between a point on income-consumption curve and corresponding point on the 45° line (Fig. 42.1). Just as the marginal propensity to consume is measured by the slope of the income-consumption curve, similarly the marginal propensity to save is given by the slope of the income-saving curve. Marginal propensity to save is the increment in savings caused by a given increment in income. The marginal propensity to save is always one **minus** marginal propensity to consume.

Marginal propensity to save $mps = \frac{\Delta s}{\Delta y}$

$$= 1 - \frac{\Delta c}{\Delta y}$$

Average propensity to save or *aps*

$$= \frac{S}{Y} = \frac{\text{total saving}}{\text{total income}}.$$

KEYNES' LAW OF CONSUMPTION

Keynes propounded a Law based on the analysis of consumption function. This law is called Fundamental Law of Consumption or Psychological Law of Consumption. It states that aggregate consumption is a function of aggregate disposable income.

Propositions of the Law

This law consists of three related propositions: (a) When aggregate income increases, consumption expenditure will also increase but by a somewhat smaller amount. The reason is that as income increases, more and more of our wants get satisfied, hence not as much is again spent on consumption as the increase in income. Consumption expenditure will no doubt increase but not to the same extent as increase in income.

(b) The second proposition is that when income increases, the increment of income will be divided in same proportion between saving and consumption. This really follows from the first proposition. Since consumption spending does not increase at the same rate as the increase in income, a part of the increase is saved and only a part is consumed. That is why consumption and saving go side by side. What is not consumed is saved. Saving is, thus, the complement of consumption.

(c) The third proposition included in Keynes' Psychological Law is that as income increases both consumption spending and savings will go up. An increment of income is unlikely to lead either to less spending or less savings than before. It will seldom happen that a person may decrease his consumption or his savings when he has got more income. He will spend a little more than before and also save more than before.

These three propositions form Keynes' Psychological Law of Consumption.

Assumptions

This law is based on three assumptions:

(i) It is assumed that habits of the people regarding spending do not change or that the propensity to consume remains the same. Normally, the propensity to consume does remain the same; it is more or less stable. This means that we assume that only income changes, whereas the other variables like income distribution, price movements, growth of population, *etc.*, remain more or less constant.

(ii) The second assumption is that the conditions remain normal; for instance there is no hyper-inflation or there is no war or other abnormal conditions.

(iii) The third assumption is that of a capitalistic laissez-faire economy. In an economy, where the State interferes with consumption or productive enterprise, the law will not hold good. In that case, the government may check consumption even when income increases. If a country is very poor, the question of choosing between consumption and saving does not really rise. This law can, therefore, apply to a free economy and in peace time and over a short period.

These assumptions are more or less valid in a short time and in normal conditions. We can, therefore, say that Keynes' Law is a rough approximation to the actual macro behaviour of free consumers in the normal short period. It is true that, as a rule and on an average, as income increases, consumption will increase, but not by as much as the increase in income.

There is one and only one essential characterisitc of the slope of the consumption function, *viz.*, the marginal propensity to consume. $\frac{\Delta C}{\Delta Y}$ will be less than unity. It ultimately results in low-consumption and high-saving economy. This law boils down to this that the position and the shape of the consumption function curve depends entirely on income. That

is, consumption can be increased only by increasing income.

Implications

Some implications of Keynes' Law may be noted. One implication is that since consumption largely depends on income and consumption function is more or less stable, it is necessary to increase investment to fill up the gap of declining consumption as income increases. If this is not done, increased output will not be profitable. This law, therefore, underlines the crucial importance of investment.

This law states that even when income increases, consumption lags behind. Hence general overproduction is possible. The government will have to step in to remedy the situation. The policy of laissez-faire will not do. If somehow consumption is not increased, marginal efficiency of capital will go down. The demand for capital will diminish and all economic progress will come to a standstill.

Keynes' Law explains the turning points in the business cycle. When the trade cycle has reached the highest point of prosperity, income has gone up. But since consumption does not correspondingly go up, the downward cycle starts, for demand has lagged behind. In the same manner, when the business cycle has touched the lowest point, the cycle starts upwards, because consumption cannot be diminished beyond a certain point. This is due to the stability of marginal propensity to consume.

Also, since marginal propensity to consume is less than unity, this law explains the over-saving gap. As income goes on increasing, consumption does not increase as much. Hence saving process proceeds cumulatively and there arises a danger of over-saving.

Keynes' law also explains the unique nature of income generation. If money is injected into the economic system, it will increase consumption but to a smaller extent than increase in income. This again is due to the fact that consumption does not increase along with increase in income.

To sum up, we can say that since marginal propensity to consume is less than unity, it brings out (a) the crucial importance of investment, (b) possibility of general over-production, (c) declining tendency of the marginal efficiency of capital, (d) turning points of business cycles, (e) danger of over-saving and (f) unique nature of income generation.

FACTORS INFLUENCING CONSUMPTION FUNCTION

When we say that the propensity to consume is stable, it does not mean the consumption expenditure remains constant. Consumption expenditure does no doubt vary as income varies. But consumption changes according to a set pattern. The amount of consumption changes as income changes, but the schedule remains the same. That is what we mean by saying that propensity to consume remains stable.

But there are certain factors which do bring about a change even in this propensity to consume in the long run. These factors are of two types:

(a) **Objective Factors;** and (b) **Subjective Factors.**

Objective Factors

We take the objective factors first. The objective factors are: (i) distribution of income, (ii) fiscal policy, (iii) substantial changes in rate of interest, (iv) changes in business expectations, (v) windfall gains and losses, (vi) liquidity preference.

Apart from the size of national income, consumption behaviour of the economy will also be influenced by the **pattern of income distribution.** It will be generally observed that the average and marginal propensities to consume of the poor people are greater than those of the rich. If, for example, you give an additional 10-rupee note to a poor man, the assumption is that of this additional income, he will spend a greater proportion than will be the case if the same amount were given to a rich man. This is because the poor man has a lot of unsatisfied wants and he is likely to seize every opportunity that comes his way to satisfy them. On the other hand, the rich have already a high standard of living and relatively less urgent wants remain to be satisfied, so that in their case, an addition to their incomes is more likely to be saved than spent on consumption.

Consumption is typically the function of the poor and saving typically the function of the rich. Therefore, given the national income, a more equal distribution of incomes will make for a higher marginal propensity to consume and, therefore, will raise the value of the multiplier.

Similarly, **fiscal policy** of the government will also influence the consumption behaviour of an economy. A reduction in taxation will leave more post-tax incomes with the people and this will stimulate higher expenditure on consumption; an increase in taxes will depress consumption. Of the two types of taxes, *i.e.*, direct and indirect, the latter will have more immediate effect on consumption than the former, particularly when direct taxes are progressive in their incidence. Commodity taxes penalise consumer expenditure directly by raising the prices of the commodities while taxes on income, reduce consumption only indirectly by reducing the post-tax income of the individual.

Hence, the structure of fiscal system has an important influence on the consumption behaviour of the economy. Changes in fiscal policy are liable to bring about shift in the consumption-income curve.

Modern trend towards welfare state financed by progressive taxation tends to shift upwards the consumption function.

Business expectations by affecting the incomes of certain classes of people affect consumption function. The **windfall losses and gains** arising out of changes in capital values affect the 'saving brackets' mostly and not the spending sections. Hence, their influence on consumption function is not so well marked. Also, if people prefer to keep their **income in liquid form,** consumption is reduced correspondingly.

Subjective Factors

It is the **subjective factors** which, according to Keynes, basically underlie and determine the propensity to consume. Keynes laid stress on the role of the psychology of human nature in determining the consumption function. Subjective factors relate both to the behaviour patterns of individuals and of business corporations.

As regards motives which lead individuals to save, Keynes mentioned factors such as building of reserves for unforeseen contingencies as illness or unemployment; the desire to provide for anticipated future needs such as daughter's marriage and son's education; the desire to enjoy an enlarged future income by investing funds out of current income, the desire to bequeath a fortune to one's heirs; the enjoyment of a sense of independence, power to do things and to hold one's head high in the society, and for some people the satisfaction of pure miserliness.

In regard to the behaviour patterns of business corporations, among the factors which induce them to save, Keynes mentioned: the desire to expand one's business; the desire to face emergencies successfully; the desire to demonstrate successful management; and the desire to ensure sufficient financial provision against depreciation and obsolescence.

We may repeat that the factors mentioned above can only produce effect in the long run. Over a short period, the propensity to consume remains stable more or less.

Since consumption function is a major factor determining the level of income and employment in the country, it is worthwhile considering what measures can be adopted to stimulate consumption. This, in turn, would stimulate investment and add to the national income and create more employment.

Measures for Raising Consumption

(i) **Redistribution of Income.** If income is redistributed in favour of the poor, whose propensity to consume is higher, from the rich whose propensity to save is greater, it will go a long way in raising the consumption function.

(ii) Comprehensive Social Security. The weaker sections of the society can be helped to increase their consumption through social security measures like unemployment doles, old-age pension, sickness insurance, *etc.* It will solve the paradox of thrift, which usually characterises the affluent sections of society.

(iii) **Liberal Wage Policy.** This will help the workers, who constitute the masses, in raising their living standards and increasing their consumption.

(iv) **Credit Facilities.** Poor and middle class people can be enabled to buy more consumer goods through liberal consumer credit. The nationalised banks in India are trying to do something in this direction.

IMPORTANCE OF CONSUMPTION FUNCTION

Consumption function is not to be considered merely a subject of study and analysis. It has a great theoretical and practical importance. All countries want to remove unemployment from their midst, raise their national income and enjoy prosperity. For this purpose a policy of planned economic development is essential. In the formulation of this policy, consumption function plays a very useful role.

We briefly discuss below the importance of consumption from various points of view:

Important Tool of Macro-economic Analysis. Consumption function is an important tool of macro-economic analysis given to us by Keynes. Without the consumption function, we would not have been able to find a determinate link between changes in investment and the resultant changes in income of a country. From this point of view, for the macro-economic theory, the consumption function is as important a tool as the demand and supply functions are in the theory of firm and the industry.

The Value of the Multiplier. From the consumption function, we derive the value of the multiplier, which as we have seen is equal to $\frac{1}{1-mpc}$. Here mpc is marginal propensity to consume. Since marginal propensity to consume is less than unity, an initial injection of purchasing power into the income stream leads to a multiple expansion of total income in a peculiar way. That is, original injection of money into the economy leads to several successive increments of income in the course of **responding to the increase in original purchasing power.** The multiplier gives us a quantitative link between changes in investment and changes in income. If, for example, the marginal propensity to consume is $\frac{3}{4}$, we know that the multiplier will be 4 so that if investment increases by say, Rs. 1,000, national income will rise by Rs. 4,000. Even before Keynes, the economists knew that changes in investment bring about changes in income but by how much and through what process was not clear, till Keynes

gave us tools of consumption function and the multiplier.

Invalidates Say's Law. Consumption function helps to invalidate Say's Law which said that supply creates its own demand. Since marginal propensity to consume is less than unity, the whole of the income is not spent on the output produced. According to Say's Law, general over-production in the country is not possible since supply is supposed to create its own demand. This law may hold good in the long run, but not in the short run. In the long run, the market forces establish equilibrium automatically so that demand may be equated to supply. But no such automatic adjustment is possible in the short run. Hence, for some time, there may occur general overproduction. According to Say's Law, an act of producing is simultaneously an act of creating proportional effective demand. There is no doubt production creates value equal to itself but that value is not **wholly** spent then and there. Since marginal propensity to consume is less than unity, the classical law of markets does not hold good, because the entire output cannot be taken off the market or the entire income is not spent. We know that marginal propensity to consume is less than unity, *i.e.*, as income increases, consumption increases less than increase in income. Hence, supply far from creating its own demand, exceeds demand and creates a glut in the market which means general overproduction and mass unemployment.

Shows Crucial Importance of Investment. Consumption function also underlines the crucial importance of investment. Because propensity to consume is stable, employment can be created only by increasing investment. Consumption function tells us that people spend proportionately less than the increases in their income. Therefore, it becomes necessary to fill the gap between income and consumption by increasing investment, otherwise it will not be profitable to increase output and employment. We also know that consumption function is more or less stable. Hence, it is instability of investment which is responsible for fluctuations in income and employment in a country. It is, therefore, clear that investment plays a vital role in increasing income and employment in a country. If propensity of consumption could also increase, income and employment could be increased even without increasing investment. But, since consumption function is stable, investment is the crucial and initiating determinant of the levels of income and employment.

Explains the Declining Marginal Efficiency of Capital. Consumption function explains the declining marginal efficiency of capital. Since consumption function does not increase which could raise the level of consumption expenditure, the prospective yield of capital assets falls. Once the demand for capital goods decreases, the marginal productivity of capital cannot rise unless the marginal propensity to consume rises. Thus, the fall in the marginal productivity could be checked, if the marginal propensity to consume could be increased. Hence, the marginal efficiency tends to decline because the demand for goods is discouraged on account of the marginal propensity to consume not rising or the marginal propensity to save not falling. It is the stability of the marginal propensity to consume which explains the declining marginal efficiency of capital.

Explains the Turning Points of the Business Cycle. Consumption function explains the turning points of the business cycle. The trade cycle takes the downward course because the marginal propensity to consume is less than unity, *i.e.*, the people do not spend proportionately more as their income increases. Similarly, the consumption function explains the upturn of the business cycle. This is due to the fact that since consumption is stable, people are unable to cut down their consumption expenditure to the full extent of a decrease in their income. It shows the danger of permanent over-saving gap and thus explains the secular decline in the marginal efficiency of capital.

Thus, consumption function occupies a very important place in the theory of employment.

POST-KEYNESIAN DEVELOPMENTS REGARDING CONSUMPTION FUNCTION

There have been several developments and refinements in regard to consumption function since Keynes. These have been briefly noticed below:

Duesenberry Doctrine

The Ratchet Effect. Among the factors affecting consumption function, we may take a note of the observations made by Prof. Duesenberry known as the **"Duesenberry Hypothesis."** He says that in matter of consumption, an individual is not merely influenced by current income, but also by the standard of living he has enjoyed in the past. There is no doubt that consumption expenditure will decrease as income decreases, but not to the same extent since it is difficult to depart from the standard of living to which a person has got accustomed. The consumers are not easily reconciled to fall in their income. They do not find it easy to scale down their consumption as their income falls. On the other hand, they try hard to maintain their previous standard of living. This is to maintain their position and status among their neighbours. They do not want their neighbours to know that they cannot now afford to keep to their former mode of life. Whatever the reason, a study of family budgets has revealed that a fall in income leads to a smaller

reduction in consumer expenditure. Consumption, as a proportion of income, goes up as income increases but does not fall in the same proportion as income falls. In other words, the consumption function is not reversible. This is known as the **'ratchet effect'.**

Demonstration Effect. Statistical evidence suggests that after the families have adjusted to the change in their incomes, they save roughly the same proportion of their income as before. As income increases, the poor families no doubt save more but their savings do not reach the level of richer families at those income levels. The Duesenberry Hypothesis suggests that the consumer expenditure depends on **relative** and not on absolute incomes. The consumption function is linear rather than curved, because it is the income of a family **relative to that of other families** which determines how much it consumes and how much it saves. People base their expenditure not on their own tastes but on the tastes and pattern of expenditure of their neighbours. People are anxious to show that they can spend as much as their neighbours can.

Prof. Duesenberry points to the **"Demonstration Effect"** as a factor influencing consumption. Poor people imitate the living style of the rich. People in under-developed countries try to follow the consumption pattern of the affluent nations. This is dangerous because money which should be saved and invested is spent on consumption goods. This retards economic growth (For fuller discussion see Ch. 70).

We may also take note of two other factors which affect a person's consumption, *viz.*, (a) 'Pigou Effect' or Real Balances Effect and (b) Government expenditure.

Pigou Effect. When prices fall as a result of a cut in money wages, the purchasing power of money with a consumer increases or there is increase in the real value of money balances. People feel that they are now better off and they increase their consumption expenditure. This leads to economic expansion or increase in G.N.P. The way in which an increase in the real value of money balances results in the expansion of economic activity has been described as the "Pigou effect" after the late Prof. A.C. Pigou. It is also called the real balances effect.

Many modern economists are sceptical about the real balances effect being so strong as to bring about full employment. But it seems to be theoretically possible. Keynes seems to be agreed that theoretically it is possible to bring about full employment by sufficiently lowering the money wages. But according to him the process was so slow that it could be ignored as a practical possibility. It would be more realistic to assume that wages are not so flexible as to permit the working of the Pigou effect to bring about full employment.

The main point is that from the practical point of view, employment can be increased more by increasing the supply of money than by reducing money wages. The reasons are: (a) The trade unions will not permit an all round lowering of the wages. (b) Sense of social justice dictates that workers alone shall not be expected to accept a reduction in money wages to increase employment. (c) A cut in money wages (*i.e.*, a fall in prices) would increase the debt burden which would be intolerable for the debtors most of whom are businessmen and as such are engaged in gainful economic activity. Hence, the best short-run policy is to keep wages as stable as possible. Stability of wages and prices will enable the entrepreneurs to plan their business properly so as to minimise the possibility of economic fluctuations. It will ensure a steady employment level.

Government Consumption. Another factor which affects consumption and therefore the level of economic activity is the government expenditure or government consumption. The size of government expenditure is determined by political attitudes and decisions. It differs from country to country and in the same country it differs over time. It depends on the decision of the community about the extent to which it would meet its needs collectively rather on an individual basis. It should, however, be borne in mind that it is the total expenditure on public and private account which determines the level of economic activity and not how much is spent by the government and how much by private individuals. Thus, the division of expenditure into public and private has little bearing on the level of income and employment in the country.

THREE THEORIES OF CONSUMPTION FUNCTION

In the short run consumption increases less than increase in income, but it increases equal to increase in income in the long run. Hence consumption-income relationship is one of non-proportionality in the short run but that of proportionality in the long run.

There are three different theories explaining consumption-income relationship: (a) Absolute Income Theory; (b) The Relative Income Hypothesis and (c) The Permanent Income Hypothesis.

Absolute Income Theory

According to Keynes, on average "men increase their consumption as their income increases, but not by as much as the increase in income." In other words, the average propensity to consume goes down as the absolute level of income goes up. Hence, according to this theory, the level of consumption expenditure depends upon the absolute level of income and the relationship between the two variables is non-proportionate. However, it is

pointed out that although this relationship is one of non-proportionality, yet there is illusion of proportionality caused by factors other than income, viz., accumulated wealth, migration to urban areas, new consumer goods, etc. Owing to such factors as these, the consumers spend more and the relationship appears to be proportional.

Relative Income Hypothesis

The Relative Income Hypothesis was first introduced by Dorothy Brady and Rose Friedman. It states that the consumption expenditure does not depend on the absolute level of income but instead on the relative level of income. Dussenberry lent it empirical and psychological support.

According to Dussenberry, there is a strong tendency for the people to emulate and imitiate the consumption pattern of their neighbours. This is the 'demonstration effect' already explained above i.e., relative income affecting consumption.

Also, the relative income theory tells us that the level of consumption spending is determined by the households' level of current income relative to the highest level of income earned previously. People are then reluctant to revert to the previous low level of consumption. This is the 'Rachet Effect' discussed above.

The Relative Income Theory states that if the current and peak incomes grow together changes in consumption are always proportional to change in income. That is, when the current income rises proportionally with peak income, the average propensity to consume (APC) remains constant.

This proportionality relationship can be illustrated by the following diagrams:

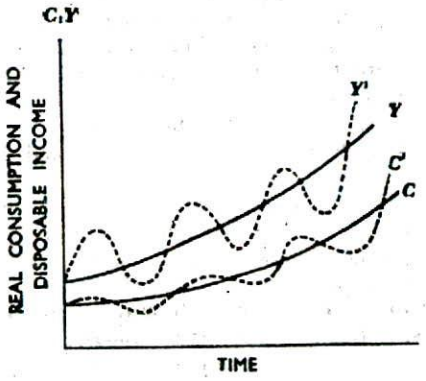


Fig. 42.3 (a)

Figure 42.3(a) depicts long run relationship. Solid lines Y and C show proportional relationship, when income grows steadily. Similarly, if income grows in spurts and dips, the response of consumption is the same. Thus C'Y' show proportional relationship. Fig. 42.3 (b), however, shows non-proportional relationship. Here we have only one Cycle as compared with many shown in Fig. 42.3(a).

Permanent Income Hypothesis

Friedman draws a distinction between permanent consumption and transitory consumption. Permanent consumption stands for that part of consumer expenditure which the consumer regards as permanent and the rest is transitory. Distinction can also be made between durable and non-durable consumer goods. Durable consumption is concerned with purchasing capital assets and in the case of non-durable good the act of consumption destroys the good. Ordinary consumer expenditure relates to non-durable consumption, *i.e.*, consumption of goods which are quickly used in consumption. These are the 'flow' items since a flow of them is being continuously consumed. On the other hand, durable consumption, which relates to the purchase of capital assets, is an act of investment. They are the stock items.

The permanent income hypothesis takes into account this distinction. This hypothesis gives the relationship between permanent income and permanent consumption and states that the ratio between the two does not merely depend on the size of the permanent income, it also depends on some other variables.

Friedman gives his permanent hypothesis in the form of three equations:

(1) $Y = Yp + Yt$
(2) $C = Cp + Ct$
(3) $Cp = k(i,w,u)\ Yp$

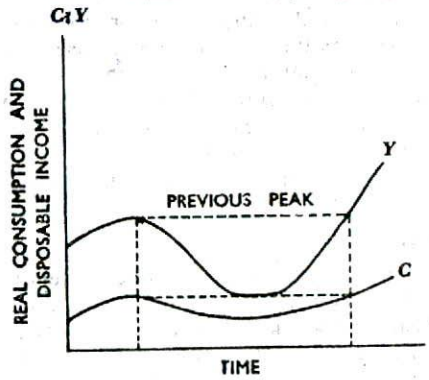


Fig. 42.3 (b)

Here Y stands for income, Yp is permanent income, Yt is transitory income. Similarly, C stands for consumption; therefore, Cp is permanent consumption and Ct is transitory consumption.

Equation No. (1) means that total income Y is made up of permanent income Yp and transitory income Yt, and equation No. (2) means that total consumption C is equal to permanent consumption Cp and transitory consumption Ct. In other words, the first two equations state that both income and consumption are made up of permanent and transitory elements.

Equation 3 gives the permanent income hypothesis. Look at equation 3 again. As mentioned already, it gives the relationship between permanent income and permanent consumption. It gives the variables on which the ratio between the two depends. These variables are interest (i); the relationship between the income from his property and that from his own abilities and efforts (w); and the preference of the consumer for immediate or transitory consumption as distinguished from addition to his wealth, *i.e.*, permanent consumption (u).

Thus equation 3 means that permanent consumption Cp is a function of (a) the rate of interest, (b) rates of consumer's income from property and his personal effort, *i.e.*, human and non-human wealth (w) and (c) his preference for immediate consumption (u) multiplied by permanent income Yp.

Actually, it is the size of income rather than the rate of interest which determines consumption. As for the second element, *viz.*, human and non-human wealth, statistical evidence suggests that the size of consumption expenditure depends a great deal on the value of consumer's assets. A consumer, who has considerable income from his assets, is likely to spend more on consumption and save a smaller proportion of his income than one who has no assets at all but desires to have them. This shows the importance of (u) in equation 3.

Permanent income is derived both from human and non-human capital of the consumer. The permanent income hypothesis really emphasises the important role of capital assets or wealth in determining the size of consumption. It shows how both income and consumption are closely linked with the consumer's wealth. It is capital and wealth (both human and non-human) which affects the level of consumption rather than consumer's income.

Life Cycle Hypothesis [1]

There is another approach to consumer expenditure. It is said that consumption function is affected more by consumer's whole life income rather than his current income. This view has been put forward by Modigliani, Brumberg and Ando.[2] The permanent income hypotheiss focusses attention on the income of the consumer earned in recent past as well as expected future earnigs (and wealth). But the 'Life cycle' hypothesis makes the consumption function depend upon consumer's whole life income. In childhood, the consumer earns nothing but spends all the same (his parents spend on him); in the middle age, when he comes to have a family, he earns and spends. But he will be earning more than he spends. He tries to save enough to maintain himself in his old age when he will not be able to earn or earn much. Over his life span, the consumer tries to maintain a certain uniform standard and with that end in view he organises whole life's uneven income flows of cash receipts. In other words, he will arrange his income and expenditure in such a manner as to maintain a certain standard of living which he desires.

If all individuals forming the community earn just enough to maintain their standard of living till the end of their life, such a community will have no net savings. But since nobody can say precisely when he would die it will not be possible for people just to balance their income and expenditure. Hence it is very likely that people will leave some saving at their death. Most people consciously want to leave some money for their heirs. Hence, over life time, people will earn more than they spend and saving is inevitable. The amount of net saving of the community will depend on the growth of population, their age-structure, on income and the amount they desire to leave to their heirs.

Thus, the life cycle theory links the net saving of the community to the growth rate of population and to the rate of increase in incomes. When in a country population is increasing and people are earning to spend, at any moment of time there will be net saving. Net savings will go on increasing as time passes; there will be more saving in each year than in the previous year. If people are better off than their parents, as is usually the case, more saving will be effected.

The 'Life Cycle' hypothesis seems to be quite realistic and plausible. It may be noted, however, that this hypothesis emphasises income as derived from wealth more than cash receipts. It also draws our attention to the fact that the consumers have to make a choice between immediate consumption and accumulating of assets for future use. Thus, **economic theory is progressively moving from theory of consumption to the theory of capital.** In other words, the life cycle hypothesis brings out the fact that consumers build up capital stock which they might hold in cash or invest in various ways and a part of the consumer's stock invested is in durables. It is clear that the theory of consumption function in future is likely to be firmly linked to capital theory. The consumers are keen to build up a stock of capital assets of a certain size which they consider appropriate to their level of income.

1. See Stonier and Hauge, *A Text Book of Economic Theory*, p. 476.

2. Modigliani F. and Brumberg R., *"Utility Analysis and Consumption Function* in Kurihara (ed.), *Post Keynesian Economies*, pp. 383-436; and Ando, A and Modigliani, F., The Life Cycle Hypothesis of Saving, *etc.*, American Economic Review, 1963, pp. 55-84.

43 DETERMINANTS OF INCOME AND EMPLOYMENT: INDUCEMENT TO INVEST

Meaning of Investment

It may be stated at the outset that the meaning of investment here is different from the common use of the word. One often hears of a person investing money in buying shares of a company or buying an existing security or bond or property or title to property. These are purely financial transactions and are merely transfers of assets from one person to another. It is an investment by one and disinvestment by another and as such, such transactions cancel out. They do not constitute real investment since they do not **add** to the nation's physical stock of capital.

Investment, in the theory of income and employment, means an addition to the nation's physical stock of capital like the building of new factories, new machines as well as any addition to the stock of finished goods or the goods in the pipelines of production. Investment includes additions to inventories as well as to fixed capital. Investment in this sense does not refer to the total stock of capital **in existence,** but **net addition** to this capital over a period of time, say a year.

Thus, investment in the present context does not mean the purchase of **existing** securities or titles—bonds, debentures, shares, *etc.* Such transactions do not add to the existing capital but merely mean a change in ownership of the assets already in existence. They do not create income and employment. Real investment, on the other hand, means the purchase of **new** factories, plants and machines, because only newly constructed or created assets create employment or generate income.

Types of Investment

Investment may be counted on the **gross** or the **net** basis. Net investment is gross investment minus depreciation. In the theory of income and employment, investment means net investment and not gross investment.

Investment may be **ex-ante** or planned or anticipated or intended investment; or it may be **ex-post**, *i.e.*, actually realised investment or when investment is not merely planned or intended but which has actually been invested or implemented.

Another classification of investment may be **Private Investment** or **Public Investment. Private Investment** is on private account, *i.e.*, by private individuals and public investment is by the government. Private investment, *i.e.*, by private investors or entrepreneurs is influenced by marginal efficiency of capital (*i.e.*, profit expectations) and the rate of interest. It is profit-elastic. **Public Investment** is by the State or local authorities, such as building of roads, irrigation projects, school buildings, public parks, electricity works, *etc.* In the public investment profit motive does not enter into consideration. It is undertaken for social good and not for private gain.

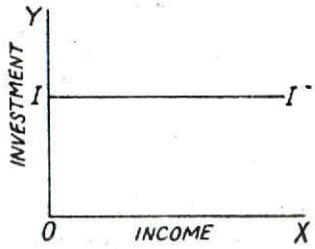
From the point of view of the theory of income and employment, the more important classification of investment is into autonomous investment and induced investment.

Autonomous Investment. Investment which is independent of the level of income is called autonomous investment. Such investment does not vary with the level of income. In other words, it is **income-inelastic.** Autonomous investment depends more on population growth and technical progress than on anything else. The influence of change in income is not altogether ruled out, because higher income would probably result in more investment. But the influence of income is negligible as compared with the influence of population growth and progress of technical knowledge.

Examples of autonomous investment are 'long-range' investments in houses, roads, public buildings and other forms of public investment. Such investment is generally done by the State as necessitated by the growth of population and facilitated by technical progress and not as a result of change in national income. Most of the investment undertaken

to promote planned economic development or defence, investment comes under autonomous investment. It also includes long-range investment to bring about technical progress or innovations. In Hicks' words, "Public investment means investment which occurs in direct response to invention and much of the long-range investment (as Harrod calls it) which is only expected to pay for itself over a long period, all of these can be regarded as autonomous investments." These investments are independent of changes in income and are not governed by profit motive. They are generally made by governments and local authorities more for promoting general welfare than for making profit.

Autonomous investment can be represented diagramatically as in the figure given below.



Autonomous Investment
Fig. 43.1

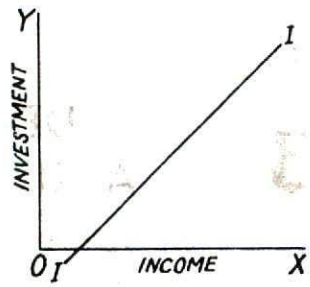
Income is shown along the X-axis OX and investment along the Y-axis OY. II is the investment curve drawn parallel to the X-axis. This means that whatever the level of income (changes in income are shown on OX), investment remains the same.

Induced Investment. Investment which varies with the changes in national income is called induced investment. Changes in national income bring about changes in aggregate demand which in turn affects the volume of investment. When, for instance, national income increases, aggregate demand too increases. Investment has to be undertaken to meet this increased demand. Thus induced investment is income-elastic, *i.e.*, it increases as income increases, and vice versa.

Induced investment is investment not only in fixed capital but also in inventories which is undertaken to enable the economy to produce a larger output in order to meet the increased demand.

Induced investment is made by the people as a result of changes in income level or consumption. It is also influenced by price changes, interest changes, *etc.* which affect profit possibilities. It is undertaken for the sake of profit or income and it changes with a change in income. Thus induced investment is governed by profit motive. It is sensitive to changes in income, *i.e.*, it is income-elastic.

Induced investment is illustrated by the Fig. 43.2 below. As before, income is shown along OX and investment along OY. The investment curve II has been shown as rising upwards to the right. This means that as income increases, investment also



Induced Investment
Fig. 43.2

increases, and as income decreases, investment too decreases.

In a nutshell autonomous investment is income-inelastic and induced investment is income-elastic.

Importance of Investment

We have seen that, in the Keynesian system, employment depends upon effective demand. There are two major constituents of effective demand—investment and consumption. Of the two, investment is more volatile and unpredictable as well as a more strategic variable. "A fundamental principle is that as the income of a community increases, consumption will also increase but by less than the increase in income. Hence, in order to have sufficient demand to sustain an increase in employment, there must be increase in real investment equal to the gap between income and consumption out of income. In other words, employment cannot increase, unless investment increases".[1]

In the previous chapter, we have already emphasised the crucial importance of investment. The real solution of the problem of unemployment is to step up the level of investment in the economy. Being a more volatile variable, investment determines effective demand more than its other constituent, *viz.*, consumption spending.

Factors Affecting Investment

We have said above that there are two determinants of income and employment in a country which constitute effective demand, *viz.*, consumption and investment and we have also said that the more important of the two constituents of effective demand is investment. What induces businessmen to undertake investment? Obviously, profit expectations seem to exercise a major influence on investment decisions of businessmen and these profit

1. Dillard, Dudley—*The Economics of J. M. Keynes*, 1958, p. 29.

expectations in turn are influenced by the current and the expected level of economic activity, changes in technique, *etc.*

Broadly speaking, inducement to invest depends on two factors, *viz.*,

(a) the marginal efficiency of capital (which according to Keynes is another name for the expected rate of profit); and
(b) the rate of interest.

Suppose a man borrows money to invest. He will have to pay interest on the loan. But he expects profit from this investment. He must compare the rate of interest which he has to pay and the rate of profit that he expects to obtain. Obviously, the rate of return or profit must at least be equal to the rate of interest, otherwise no investment will be made. So long as the expected rate of profit exceeds the rate of interest, investment will continue to be made. The yield expected from a new unit of capital is called by Keynes **marginal efficiency of capital.** This marginal efficiency of capital must never fall below the current rate of interest, if investment is to be worthwhile.

Hence, the inducement to invest depends on the marginal efficiency of capital on the one hand and the rate of interest on the other.

Of these two determinants of inducement to invest, *viz.*, the marginal efficiency of capital and the rate of interest, which is of greater importance? The rate of interest does not quickly change, it is more or less sticky or constant. Hence, the inducement to invest, by and large, **depends on the marginal efficiency of capital.** If the business expectations are good or if the marginal efficiency of capital is high, more investment will be made in spite of high rate of interest. On the contrary, depression or bleak prospects of profits will discourage investment. even if the prevailing rate of interest is low. Thus, fluctuations in investment are mainly due to the fluctuations in the marginal efficiency of capital.

Other Factors. There are some other factors that affect investment. For instance, if a firm has already **excess capacity** and can easily handle increased future demand, it will not go in for further investment to increase its capital equipment.

Technological progress also affects current level of investment. For example, a new invention may render the present capital stock of a firm obsolete and adversely affect its ability to compete. In this case, further investment will be called for.

We may sum up the Keynesian argument at this stage: The level of income and employment depends on effective demand which in turn depends on (a) consumption and (b) investment. Consumption being more or less stable, we are left with the more important factor, *viz.*, investment. Investment depends on (a) the rate of interest and (b) marginal efficiency of capital or the expected rate of profit. Now the rate of interest being more or less constant, we are left with the marginal efficiency of capital as the sole determinant of the level of income and employment in a country.

We discuss these two determinants of investment. *viz.*, marginal efficiency of capital and the rate of interest, in the following sections.

MARGINAL EFFICIENCY OF CAPITAL

Meaning

In the modern world, an act of investment involves a great amount of risk. It means locking up of funds for a long time to come in the hope of getting profits as a reward over the expected economic life of the capital asset. When an entrepreneur instals a new machine, he is undertaking an act of investment, expecting to reap profits in future from the sale of the output of the machine. But the future by its very nature is uncertain. It is quite possible that when the machine is ready for production, the demand for its product may no longer be there, so that instead of profits there may be losses.

The great uncertainty about the future gives rise to the extreme instability and fluctuations in the rate of investment in modern capitalist economies. To compensate them for bearing these risks, the entrepreneurs want a high enough rate of profit so as to induce them to take such risks on behalf of the community. If this rate of profit is not adequate, the inducement to invest will be very weak.

The businessmen try to reduce the unpredictability of the future by trying to base their decision in the light of past and present trends. **Marginal efficiency of invesment is the highest expected rate of profit which is likely to be had by a marginal increase in the rate of investment.** Since it refers to the expected rate, rather than the current rate of profit, marginal efficiency of investment is liable to a great deal of fluctuations in the short run. **It is the prospective yield which gives the marginal efficiency of capital its most important characteristic,** *i.e.*, **instability.**

While making investment, the businessmen compare the supply price or replacement cost of the machine and its prospective yield. The marginal efficiency of a capital asset can be calculated by relating the prospective yield of the asset to its supply price. Keynes himself defines marginal efficiency of capital thus: "I define the marginal efficiency of capital as being equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital asset during the life just equal to its supply price". In other words, marginal efficiency of capital is the rate at which prospective yield of an asset is discounted so as to make it just equal to the

supply price or replacement cost of the asset. The formula is

Supply Price = Discounted Prospective Yields

$$\text{Or} \quad Cr = \frac{R_1}{1+r} + \frac{R_2}{(1+r)^2} + \frac{R_3}{(1+r)^3} \cdots\cdots + \frac{R_n}{(1+r)^n}.$$

Here Cr is the replacement cost or supply price. R_1 R_2 . . . . . R_n are the series of the prospective annual returns or yields; r stands for the rate of discount which would make the present value of the series of annual return just equal to the replacement cost or supply price of the capital asset. This is really the marginal efficiency of capital.

The above is the marginal efficiency of a particular asset. But in macro-economics we are concerned with the marginal efficiency of capital in general. The marginal efficiency of capital in general is the highest of all individual marginal efficiencies. We can prepare a schedule of the marginal efficiencies at various levels of investment.

Investment Demand Curve

The marginal efficiency of capital falls as investment increases. There are two reasons for this: One, the installation of a larger number of similar machines leads to a reduction in their prospective yields just as consumption of more units leads to a decrease in marginal utility. Secondly, the prices of such machines will go up as their demand increases. This will add to the costs. Thus costs go up on the one hand and the market price of their products goes down as production increases. Hence, the marginal efficiency of capital goes down as investment increases. This is because with more investment the productive capacity of the economy will increase and this will depress the expected rate of profit. It is clear that marginal efficiency of capital will be different at different levels of capital investment. As investment increases, marginal efficiency of capital goes down. Thus, the curve of marginal efficiency of investment is likely to be a curve falling from left to right.

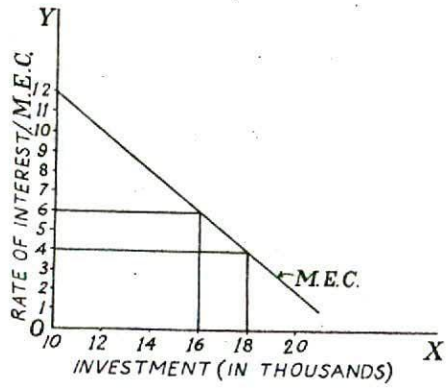
We can construct an imaginary schedule as under:

Diminishing Marginal Efficiency of Capital

Investment Rs.	*Marginal Efficiency of Capital*
10,000	12%
12,000	10%
14,000	8%
16,000	6%
18,000	4%
20,000	2%

We see from the above schedule that when investment is Rs. 10,000, the marginal efficiency of capital is 12 per cent. But as investment increases, say to Rs. 20,000, the marginal efficiency goes down to 2 per cent.

This schedule can be easily converted into MEC curve as shown in Fig. 43.3 below. On the OX-axis



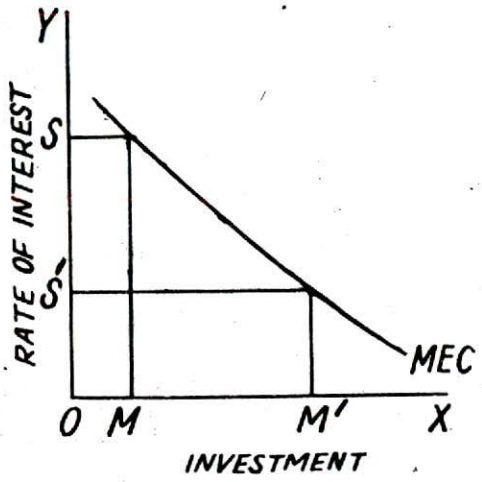
Marginal Efficiency Curve
Fig. 43.3

are shown the different amounts of investment and on OY the marginal efficiency of capital and the rate of interest. The MEC curve represents the marginal efficiency of capital. It slopes down from left to the right which means that as investment is increased its marginal efficiency goes down.

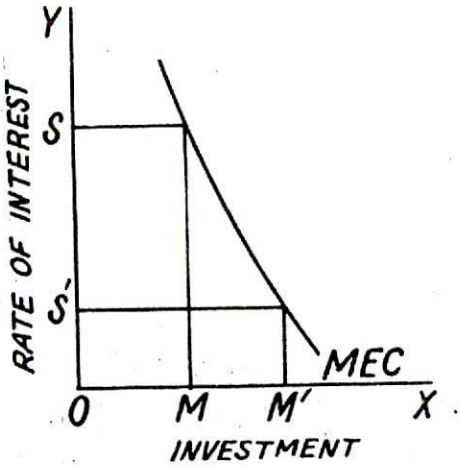
Investment at any time depends on the rate of interest prevailing at that time. If the rate of interest is 6 per cent, then it will be seen in Fig. 43.3 that the entrepreneurs will invest Rs. 16,000 in capital goods, because, at this investment, marginal efficiency of capital is equal to the rate of interest. The marginal efficiency of capital represents the investor's return and the rate of interest is his cost. Obviously, the return on capital must at least be equal to the rate of interest, which is its cost. Suppose the rate of interest goes down to 4 per cent, then it will become worthwhile to invest Rs. 18,000. Thus, the marginal efficiency of capital and the rate of interest move together. We may thus conclude that **given a marginal efficiency schedule or curve, the investment will depend on the prevailing rate of interest.**

The Position and Shape of the MEC Curve

The elasticity of the MEC determines the extent to which the volume of investment would change consequent upon changes in the rate of interest. If the MEC is relatively interest-elastic, a little fall in the rate of interest will result in a considerable expansion in the volume of investment. On the other hand, if MEC is relatively interest inelastic, then a considerable fall in the rate of interest may not lead to any increase in the volume of investment. This is shown in the Fig. 43.4 and Fig. 43.5.



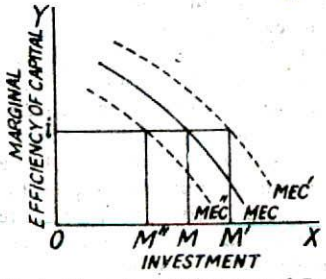
Interest-elastic MEC Curve
Fig. 43.4



Interest-inelastic MEC Curve
Fig. 43.5

Shifts in MEC

It can be easily understood that as the expectations regarding the prospective yields change, the marginal efficiency of capital will change too and the MEC curve will shift upwards or downwards. This is shown in Fig. 43.6 below. Suppose a war



Shifts in Marginal Efficiency of Capital
Fig. 43.6

breaks out or demand for goods increases on account of some other reason. As a result, entrepreneurs' expectations of profit will rise high and the investment demand curve or the MEC curve will shift upwards to MEC'. This means that at a given rate of interest, investment will be greater than before. From the Fig. 43.6, it will be seen that whereas the rate of interest i, investment was OM before, it now becomes OM'. Similarly, if for some reason demand for goods has decreased bringing down the marginal efficiency of capital to MEC'', at the same rate of interest i, investment will only be OM'' as compared with OM before.

Influence of the Rate of Interest. Thus, the rate of interest, along with the marginal efficiency of investment, determines the volume of investment. If the rate of interest is higher than the marginal efficiency of investment, it will not be profitable to create a new physical asset. This is because we assume that the aim of the individual investor is to maximise his money profits. Two courses of action are open to an investor; either he can use his money to create additional physical assets, *i.e.*, he can invest in the Keynesian sense of the term, or else he can lend his money to others at a certain rate of interest. Now, if marginal efficiency of investment is lower than the current rate of interest, it is more profitable to lend one's money rather than use it for creating new assets. On the other hand, if marginal efficiency of investment is higher than the rate of interest, it is better to invest more. At the point, where marginal efficiency of investment equals the current rate of interest, we have the equilibrium level of the rate of investment.

It follows, therefore, that the rate of investment also depends on the rate of interest. It is interest-elastic. A low rate of interest tends to stimulate investment. But it may fail to do so, if marginal efficiency of investment is already lower than the rate of interest (as may well happen during a depression). Of the two determinants of the rate of investment, marginal efficiency of investment is more volatile than the rate of interest.

The rate of interest is usually 'sticky' in the short run, while marginal efficiency of investment can fluctuate from one extreme to another. If there is a divergence between the two, usually the marginal efficiency of investment will adjust to the rate of interest. If, for example, the marginal efficiency of investment is 6 per cent, while the current rate of interest is 4 per cent, forces will be set in motion so as to bring the former to the level of the latter. In such a situation, there will be more investment, because marginal efficiency of investment is greater

than the rate of interest and, with an increase in investment, marginal efficiency of investment will fall. At the point, where it is just reduced to the level of the current rate of interest, further investment will cease.

The level of investment is not always influenced by the cost of borrowing or the prevailing rate of interest. It is possible that investment has somehow proved unprofitable. Fixed interest payments will then reduce the future earnings on the equity issue of the firm and thus discourage investment.

Also, instead of borrowing the firm has the option of increasing the ordinary stock issue.

Besides, if profits increase proportionately to increase in share capital, the proposition cannot be attractive to the investing firm. Moreover, the firm can plough back its accumulated profits and may not resort to borrowing.

Thus, although, for the economy as a whole, the supply of funds may be interest-elastic, yet an individual firm may not find borrrowing from the market worthwhile. In actual practice, we find that investment demand is not much influenced by rate of interest (*i.e.*, it is interest-inelastic). Investment demand is largely determined by marginal efficiency of capital.

ROLE OF BUSINESS EXPECTATIONS IN DETERMINING MEC

There is no doubt that business expectations play a very important role in determining marginal efficiency of capital and therefore investment. We know that the volume of employment or the size of national income is determined by two factors, *viz.*, propensity to consume and the inducement to invest. Of these two, propensity to consume (or consumption function) is more or less stable, fluctuations in income and employment, therefore, depend primarily upon the inducement to invest. The inducement to invest, in turn, depends on (a) the rate of interest and (b) the marginal efficiency of capital. Since the rate of interest is relatively stable or 'sticky', fluctuations in investment depend primarily upon the changes in the marginal efficiency of capital. There are two determinants of the marginal efficiency of capital, *viz.*, the supply price or cost of the capital asset and the prospective yield or return from the asset.

It is the expectations of the businessmen regarding the prospective yield which play a vital role in determining the marginal efficiency of capital and hence investment, which in turn determines the volume of employment or size of the national income. The most important characteristic of the marginal efficiency of capital is its instability and this is caused by the uncertainty in prospective yield or business expectations.

In a capitalist economy, the instability of economic life (or economic fluctuations) is mainly attributable to the unstable character of prospective yields from capital assets. Whether the demand for capital goods is stable or unstable will be determined by the stability or instability of prospective yields, *i.e.*, by business expectations. As business expectations change, the volume of investment changes and so does the volume of business activity or the volume of employment.

It may be emphasised that the marginal efficiency of capital refers to the yield that is expected in future from investment in a brand-new asset and not the return actually obtained from an existing plant, till it becomes useless. Further, it may also be borne in mind that the prospective yield is made up of the total returns expected from the asset during the **whole** of its life, and these returns may vary from year to year.

Following are the two types of expectations regarding the prospective yields of capital assets:

(a) **Short-term expectations;** and
(b) **Long-term expectations.**

The short-term expectations are based on existing facts which are more or less known to be certain such as the size of existing stock of capital assets and the intensity of consumer demand for the goods which can be produced with these assets. Short-term expectations relate to the sale proceeds of the goods made with the existing plant.

On the other hand, **long-term expectations** relate to the sale proceeds of output resulting from the alterations in the size of the plant or from entirely a new plant. In other words, they are expectations about future changes in the size of the stock of capital assets and about changes in the level of aggregate demand during the future life of these assets. Obviously, the factors on which long-run expectations are based are uncertain.

Thus, short-term expectations are more stable because what has happened in the recent past is a safe guide for the near future. But no past experience will tell us as to what will happen in the long run. The long-term expectations are highly unstable. The horizon becomes more clouded as we look ahead. But long-term expectations are more important in explaining fluctuations in investment and employment.

Factors Influencing Expectations

In view of the important role that the business expectations play in determining marginal efficiency of capital, let us analyse the forces which influence the prospective yields of an asset.

The long-term expectations are influenced by the following factors:

(a) **The State of Confidence.** Much depends on

how confident the businessmen are about the future changes, *i.e.*, not only what they expect to happen but how certain and confident they are that it will happen.

(b) **Stock Exchange Valuation.** The value of the assets also depends a great deal on the value attached to it by the dealers in stock exchanges. Given the rate of interest, changes in the capital values of investments will depend on the prospective yields as shown by dealings in stock exchange.

(c) **Irrevocable Decisions.** Investment decisions depend not so much on cold calculations or precise calculations of expected profits but decisions are irrevocably made and risks taken by bold and dynamic entrepreneurs. In other words, investments are not based on accurate knowledge of prospective yields but on mere ad hoc decisions of entrepreneurs who ventured to take the risk.

(d) **Elements of Instability.** In modern times, elements of instability have been imported into the economic system by divorce between ownership and control and by the working of stock exchanges. Prospects of the various investments are assessed and reassessed almost daily, even several times in a day. It has now become possible to invest one day and disinvest the next day.

(e) **Link with Investments.** The stock exchange dealings regarding the revaluation of the existing investments inevitably influence similar new investments. Thus, the present investments are linked with new investments which is the real investment.

(f) **Behaviour of Investors.** Dealings in the stock exchange by ignorant and unintelligent investors may give a perverted view of the entrepreneur's long-term expectations. They rather think that the present state of affairs will continue. But actually conditions often change. Since there is mass valuation of assets on the stock exchange, there are alternating waves of pessimism and optimism. Even a professional dealer is more concerned with making money than with giving a correct valuation of the assets. He also takes a short-run view.

(g) **Non-economic Factors.** Then there are several non-economic factors. Some political events such as threat of a war, success of a particular party in elections or a diplomatic triumph also affect the value of assets or their prospective yields.

THEORY OF SECULAR STAGNATION

It has been observed that the marginal efficiency of capital shows a declining tendency in the long run. The economists used to call it a falling rate of profit, but now they call it a diminishing marginal efficiency of capital. It is the view of most economists that in a capitalist society, the rate of profit goes on falling in the long-run. It is called **"Stagnation Thesis."**

Although most economists agree that the rate of profit continues to fall in the long run. There is, however, difference of opinion on 'why is it so?' According to Adam Smith, the rate of profit falls because the amount of capital in a country goes on increasing. Ricardo and Mill were of the opinion that this was due to the niggardliness of nature. Owing to increase in population even inferior lands have to be brought under cultivation and naturally the output decreases. Keynes's view is somewhat similar to the view of Adam Smith and that of Karl Marx. He thinks that as the stock of capital goods increases, its return goes on decreasing. He says that marginal efficiency of capital decreases in the long run because with a growing stock of capital assets, prospective yield decreases.

The marginal efficiency of capital depends on two factors: (a) Supply price or cost of production and (b) prospective yields. The marginal efficiency of capital decreases because either the cost of production increases or the prospective yield decreases. In the short run, marginal efficiency of capital decreases because the cost of production of capital increases, but the longer the period the greater is the influence of the prospecive yields. Thus, the secular decline in the marginal efficiency of capital is almost entirely the result of a fall in the prospective yields. The prospective yield decreases because there is increase in the supply of capital goods. As investment increases, production increases. The increase in capital and other factors leads to an increase in output which results in fall in prices. The result is that future expectations from investment go down.

But so long as the marginal efficiency of capital is more than the current rate of interest, further investment will continue since the rate of interest is less than the rate of profit. If the rate of interest falls to zero, the production of capital goods will increase up to the point where the rate of profit also falls to zero. The capital goods will be no longer scarce and the marginal efficiency of capital will drop to zero. Keynes is of the view that if the output of capital goods continues to increase without any limit, the situation as above will be created in a generation or two. But because some difficulties do appear in the way of production of more capital goods, the marginal efficiency of capital has not fallen to zero.

What checks the decline in marginal efficiency of capital? Some of the factors which prevent the marginal efficiency of capital from falling to zero are increase in population, territorial expansion and technical progress. These are growth factors. Also, the wars break out off and on and they check the fall in the rate of profits. In case these growth factors cease to operate, there will be secular stagnation. In rich countries, where there is abundance of capital goods and investment ceases to be profitable, there is unemployment. Hence such countries cannot maintain full employment without social control on investment.

The above analysis of the marginal efficiency of capital leads Keynes to the conclusion that control on investment cannot be left in the hands of private individuals. The long-term expectations are so uncertain that they cause fluctuations in the marginal efficiency of capital, which cannot be set right by changes in the rate of interest. There is a great fear of fall in the long run return resulting from the continuing uncontrolled increase in capital goods. This may irreparably damage the future productive capacity of the community. Hence government control is essential. State can understand much better the long-term needs of the community and it has the power to keep it in a state of comfort.

Thus, the theoretical concept of marginal efficiency of capital has its practical counterpart in socialisation of investment. This necessitates overall economic planning.

Determination of Rate of Interest. As regards the determination of the rate of interest, we have already discussed the Keynesian theory of the rate of interest in the Chapter on Interest.[2] To repeat, the rate of interest is determined by the demand for and supply of money. The demand for money is the demand for money to hold. It is determined by three motives, *viz.*, transactions motive, precautionary motive and speculative motive. The supply of money is fixed by monetary authorities in a country, while demand for money arises because of liquidity preference of the people, arising out of transactions, precautionary and speculative motives. The demand for money, however, is not absolute. People can be induced to part with liquidity if the reward, *i.e.*, the rate of interest, being offered in return is attractive. Generally, the higher the rate of interest the lower will be the demand for liquidity, and as the rate of interest falls the demand for liquidity increases, and, at very low rates of interest, it may become absolute, *i.e.*, people may refuse to part with any amount of money with them.

Given the demand for money, an increase in supply of money will lower the rate of interest. However, when the rate of interest is very low, say, 2 per cent, it may be difficult to lower the rate of interest any further by increasing the supply of money. This is so, because at the very low rates of interest, the demand for money becomes nearly absolute. When the rate of interest is already low, the reward for parting with money is only nominal. At very low rates of interest, people expect that sooner or later the rate will rise, and they prefer to wait till then for lending rather than lending money just now.

Summing up. Broadly speaking, investment depends on:

(a) Marginal efficiency of investment;
(b) rate of interest.

Marginal efficiency of investment is subject to violent fluctuations in the short run, while the rate of interest is somewhat 'sticky'. Fluctuations in investment, therefore, are largely determined by fluctuations in the marginal efficiency of investment.

Investment and the Level of Income

Recently, a view has been put forward that investment is more responsive to the level of income than to interest rate. In its support, empirical evidence is cited which indicates that a major determining factor in respect of the level of investment is the level of demand for goods rather than the prevailing interest rate. Two arguments are given to support this view: (a) The higher the level of demand and income, the more **willing** will the businessmen be to invest in the risky enterprises because they expect higher return. (b) the higher the level of demand, output and hence profits, the more will the businessmen be **able** to invest. It will be seen that the first argument refers to the **willingness to invest** and the second to the **ability to invest.** It is assumed that the businessmen are unable to borrow from the market all the funds they require for investment at the prevailing rate of interest. Hence he is compelled to fall back on their own resources or funds to finance the investment projects they consider worth while. These funds may be obtained by not distributing the entire profits to the shareholders but hold back a portion for investment. And the profits will tend to be high when demand and income are high. Hence we arrive at the conclusion that investment will depend upon the level of income (or demand) rather than on the rate of interest.

The theory that investment is influenced by level of profits (or income) has raised lot of controversy. There are statistical difficulties in determining whether empirical evidence conforms to the theory. There is no conclusive evidence supporting the theory that investment is high when profits are high. Rather, the causal connection points in the opposite direction. It is seen that high investment causes high level of income by the multiplier process which causes high profits.

Thus, the controversy is not settled one way or the other. All that we can say is that the available empirical evidence is not adequate to reject the theory that investment depends on demand or income or is influenced by the level of profits.

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2. Chapter 34.

44 MULTIPLIER AND ACCELERATOR

Concept of Multiplier

We have studied the determinants of income and employment in a country. There we saw that the volume of employment depends on aggregate demand. The aggregate demand is composed of (a) consumption demand and (b) investment demand. Consumption depends on the consumer's income and his propensity to consume and investment demand on (a) the marginal efficiency of capital and (b) the rate of interest.

We have discussed the propensity to consume in a previous chapter.[1] Higher the propensity to consume the higher will be the level of income and employment in the country. Hence, if there is unemployment in a country, steps should be taken to raise the propensity to consume. When investment is increased then also the level of income and employment rises. As income increases, consumption expenditure too increases, but proportionately less than the increase in income. This is due to the fact that the marginal propensity to consume is less than unity. We have discussed this in a previous chapter (42).

In this chapter, we propose to study how much or how many times income increases as investment is done. This can be known from the concept of the multiplier. We shall see that as investment is increased the national income increases proportionately much more. How many times it increases depends on the marginal propensity to consume. As we have said already, the higher the marginal propensity to consume, the greater will be the increase in income as a result of investment. The higher the marginal propensity to consume the bigger will be the multiplier. We shall explain this fully presently.

Since the national income increases many times more as a result of a given investment, Keynes multiplier theory attaches great importance to increase in public investment and Government expenditure for raising the level of income and employment. The multiplier theory emphasises that public investment is highly useful, nay necessary, for increasing income and employment in the country.

It may be borne in mind that both consumption and investment create employment. If there is unemployment or less than full employment, increase both in consumption and investment will increase employment. In this respect they stand in complementary relationship with one another. When investment increases, consumption increases too and helps in creating employment. It is only when the level of full employment has been reached that investment and consumption become competitive instead of being complementary; then increase in one will reduce the other; one will be at the expense of the other.

Kahn's Employment Multiplier

Before understanding Keynes' multiplier, it seems to be essential to have an idea about Kahn's employment multiplier. Keynes' multiplier is known as 'Keynes' Investment Multiplier' or 'Keynes' Income Multiplier', whereas Kahn's multiplier is known as 'Kahn's Employment Multiplier'.

When government undertakes public works like roads, railways, irrigation works then people get employment. This is initial or primary employment. These people then spend their income on consumption goods. As a result, demand for consumption goods increases, which leads to increase in the output of concerned industries which provides further employment to more people. But the process does not end here. The entrepreneurs and workers in such industries, in which investment has been made, also spend their newly obtained income which results in increasing output and employment

[1] Chapter 42.

opportunities. In this way, we see that the total employment so generated is many times more than the primary employment.

Suppose government employs 3 lakh persons on public works and, as a result of increase in consumer goods, 6 lakhs more persons get employment in the concerned industries. In this way, 9 lakh persons have been able to get employment, that is, three times more people are now employed, whereas initial employment generated was only for 3 lakhs people. In other words, Kann's employment multiplier means that by the government undertaking public works many more times total employment is provided as compared with initial employment.

Keynes' Income or Investment Multiplier

On the other hand, Keynes' income multiplier tells us that a given increase in investment ultimately creates total income which is many times the initial increase in income resulting from that investment. That is why it is called income multiplier or investment multiplier. Income multiplier indicates how many times the total income increases by a given initial investment.

Suppose Rs. 10 crores are invested in public works and as a result there is an increase of Rs. 30 crores in income. In this case, income has increased 3 times, *i.e.*, the multiplier is 3. If ΔI represents increase in investment, ΔY indicates increase in income and K is the multiplier, then

$$K = \frac{\Delta Y}{\Delta I}$$

The multiplier is the numerical co-efficient showing how large an increase in income will result from each increase in investment. The multiplier is the number by which the change in investment must be multiplied in order to get the resulting change in income. It is the ratio of change in income to the change in investment. If an investment of Rs. 5 crores increases income by Rs. 15, the income multiplier is 3 and if Rs. 20 crores, the multiplier is 4, and so on.

With the help of marginal propensity to consume, we can express in a systematic manner the relationship between a given increment in investment and the resulting change in income. Suppose on a given day an investment of 1,000 rupees takes place. Now, the first impact of this change will be that incomes of persons engaged in investment activity will go up by 1,000 rupees. The process, however, does not end there. The recipients of incomes will spend a part of their additional income and save the rest—the magnitude of their additional spending will depend on their marginal propensity to consume.

Suppose marginal propensity to consume is 3/4. Then they will spend 750 ($1000 \times \frac{3}{4}$) rupees and save 250 rupees. When they spend these 750 rupees in buying goods and services, the incomes of the sellers of these goods and services go up by Rs. 750. They in turn will spend a part of it, depending on their marginal propensity to consume. If their marginal propensity to consume is also $\frac{3}{4}$, they will spend 562.5 ($750 \times \frac{3}{4}$) rupees and save the rest increasing income by Rs. 562.5. Thus, one primary round of expenditure creates income much higher than the original amount. If the marginal propensity to consume is stable, the series of successive expenditures become a geometric progression.

$$1000 + 1000 \times \tfrac{3}{4} + (1000)(\tfrac{3}{4})^2 + 1000 \times (\tfrac{3}{4})^3 + 1000 \times (\tfrac{3}{4})^4$$

$$\Delta Y = 1000[1 + (\tfrac{3}{4}) + (\tfrac{3}{4})^2 + (\tfrac{3}{4})^3 + (\tfrac{3}{4})^4 + \ldots\ldots]$$

$$= 1000 \left(\frac{1}{1-\frac{3}{4}}\right) = 1000 \left(\frac{1}{\frac{1}{4}}\right)$$

$$= 1000 \times 4$$

$\Delta Y = 4000$ rupees.

Δ stands for the increase

Thus, we see that an initial, primary investment of 1,000 rupees gives rise to an increase of 4,000 rupees in the national income. **The investment multiplier measures the relationship between an increase in income caused by a primary increase in investment.** If ΔY is increase in income and ΔI is increase in investment,

$$\text{Investment Multiplier} = \frac{\Delta Y}{\Delta I}$$

$$\text{In the above case, multiplier} = \frac{4000}{1000} = 4$$

We observe from the above that the multiplier is given by the following formula:

$$\text{Multiplier} = \frac{1}{1 - mpc}$$

Since $1 - mpc = mps$ (marginal propensity to save),

$$\therefore \text{ The multiplier} = \frac{1}{mps}$$

(Here *mpc* is marginal propensity to consume and *mps* is the marginal propensity to save).

If the marginal propensity to consume is $\frac{3}{4}$, the multiplier can be found as under:—

$$\text{Multiplier} = \frac{1}{1 - mpc} = \frac{1}{1 - \frac{3}{4}} = \frac{1}{\frac{1}{4}} = 3$$

If marginal propensity to consume is $\frac{1}{2}$,

$$\text{multiplier} = \frac{1}{1 - \frac{1}{2}} = \frac{1}{\frac{1}{2}} = 2$$

The formula for the calculation of the value of the Multiplier is derived as follows:

We know $Y = C + I$, (*i.e.*, total national income = total Consumption Or $\Delta Y = \Delta C + \Delta I$ and Investment expenditure.)

Divide both sides by ΔY

$$1 = \frac{\Delta C}{\Delta Y} + \frac{\Delta I}{\Delta Y}$$

$$\text{or } 1-\frac{\Delta C}{\Delta Y}=\frac{\Delta I}{\Delta Y}=\frac{1}{\frac{\Delta Y}{\Delta I}}$$

By definition we know that $k=\frac{\Delta Y}{\Delta I}$

$$\therefore\ 1-\frac{\Delta C}{\Delta Y}=\frac{1}{k}$$

$$k=\frac{1}{1-\frac{\Delta C}{\Delta Y}}=\frac{1}{1-mpc}=\frac{1}{mps}$$

$$\therefore\ k=\frac{1}{mps}$$

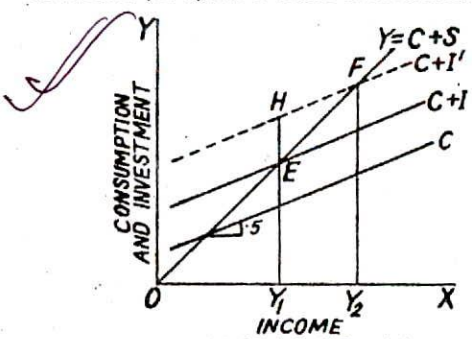
In other words, the simple method is that from marginal propensity to consume we find marginal propensity to save which can be found by deducting marginal propensity to consume from 1 (*i.e.*, $1-mpc$) and then find its reciprocal. Thus, the multiplier is the reciprocal of marginal propensity to save (*mps*). If the marginal propensity to consume is 4/5, the multiplier will be 5; if it is 9/10. the multiplier will be 10; if marginal propensity to consume is 1, the multiplier will be infinity and a given dose of primary investment will lead automatically to full employment; if marginal propensity to consume is zero, the multiplier will be I so that total increase in income will just equal the increase in primary investment.

Thus, the size of the multiplier varies directly with the size of the marginal propensity to consume. When the marginal propensity to consume is high, the multiplier is high and when the marginal propensity to consume is low, it is low.

It may be emphasised that the multiplier works not only in money terms but also in real terms. In other words, the increase in income takes place not only in the form of money but in the form of goods and services. When the incomes increase as a result of investment and these incomes are spent on consumer goods, then the output of these goods has to be increased to meet the increasing demand for them. Hence, increase in money incomes is matched by increase in output or increase in real income. We assume that excess productive capacity exists in consumer goods industries.

Diagrammatic Representation of Multiplier

We know that national income is determined at the level where aggregate demand (=consumption demand+investment demand) curve C+I cuts the aggregate supply curve (line forming an angle of 45° with the X-axis). This point of intersection is at E in the Fig. 44.1. We can show the multiplier effect also with the help of this diagram. Here income is shown along OX and consumption+investment along OY. The curve C, represents the marginal propensity to consume which is assumed to ½. That is why the slope of C curve is 0.5. Since the aggregate demand curve C+I cuts the 45° angle line at E, OY_1 is the level of income determined. If now investment is increased to EH (ΔI) we can find out the increase in income (ΔY). As a result of investment EH, the



Multiplier Effect (a)

Fig. 44.1

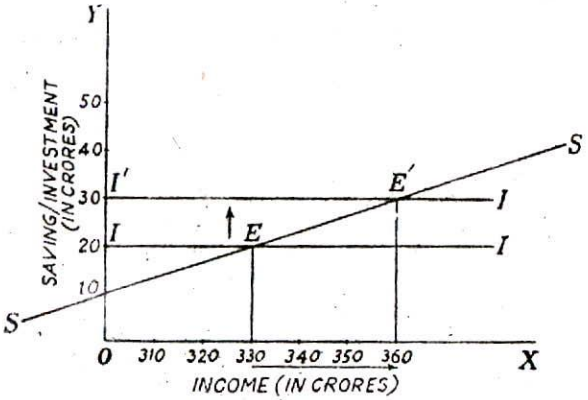
aggregate demand curve shifts upwards to C+I'. This new aggregate demand curve cuts the 45° angle line at F, so that OY_2 income is determined. Thus, income increases by Y_1Y_2 as a result of investment increase of EH, which (Y_1 Y_2) is double of EH (This can be measured).

It is clear, therefore, that the multiplier is 2. We also derive this from our formula $\frac{1}{1-mpc}$. When marginal propensity to consume

(*mpc*) is ½, the multiplier

$$=\frac{1}{1-mpc}=\frac{1}{1-\frac{1}{2}}=\frac{1}{\frac{1}{2}}=2$$

We can also show, with the help of a saving and investment diagram, Fig. 44.2, the multiplier effect



Multiplier Effect (b)

Fig. 44.2

of an increase in investment on the equilibrium level of income. In diagram 44.2, SS is the saving curve and I-I is the investment curve showing the total level of investment of Rs. 20 crores. These two curves intersect at point E and the equilibrium level of income of Rs. 330 crores is determined. If now

there is a change in investment from Rs. 20 crores to 30 crores, *i.e.*, an increase of 10 crores, then the I-I curve will shift to the position of I'I' and the two curves I'I' and SS intersect at point E' and the new equilibrium level of income of Rs. 360 crores is determined. Now it is clear that when propensity to save is $\frac{1}{3}$, an increase in investment by Rs. 10 crores has led to the increase in income by Rs. 30 crores (*i.e.*, from Rs. 330 crores to Rs. 360 crores). Obviously, the value of the multiplier is equal to 3.

Limitations of Multiplier

On a theoretical plane, the multiplier principle seems to be very attractive, but in actual practice, things may not materialise as desired. Its working is subject to several limitations:—

(i) **Efficiency of Production.** If the production system of the country cannot cope with increased demand for consumption goods and make them readily available, the incomes generated will not be spent as visualised. As a result, the marginal propensity to consume may decline.

(ii) **Regular Investment.** The value of the multiplier will also depend on regularly repeated investments. A steadily increasing investment is essential to maintain the tempo of economic activity.

(iii) **Multiplier Period.** Successive doses of investment must be injected at suitable intervals if the multiplier effect is not to be lost.

(iv) **Full Employment Ceiling.** As soon as full employment of the idle resources is achieved, further beneficial effect of the multiplier will practically cease.

Uses of Multiplier

In spite of the above limitations, the multiplier principle occupies a very important place not only in economic theory but also in shaping economic policy. It plays a vital role as an instrument of income building. It tells us how a small increase in investment can result in large increase in income. It is of special importance in the study and control of business cycles. It furnishes guidelines for appropriate income and employment policies. It also explains the expansion of public sector in modern times.

Leakages in Income Stream and Their Effect on the Multiplier

In the discussion of the propensity to consume, we saw that as income increases, consumption does not increase to the same extent or proportionately, because a part of the income is saved. The part of the income that is saved (*i.e.*, not spent) is as if a leakage from the flow of income stream. These leakages obstruct the growth of national income. In the absence of these leakages, marginal propensity to consume would have been unity. The consumption expenditure would have increased 100 per cent of the increase in income and there would have been full employment. Why does not an investment of Rs. one crore increase income equal to Rs. one crore? In other words, why does the increase in income decrease at every step of investment? The answer is that the whole of the newly obtained income is not spent, but a part leaks out. Leakages break the chain reaction. An initial investment brings about infinite number of constant additions to income, but the successive additions diminish at each stage. This is due to leakages.

The following are the principal leakages:

(i) **Paying Off Debts.** It generally happens that a person has to pay a debt to a bank or to another person. A part of his income goes out in repaying such debts and is not utilised either in consumption or in productive activity. Income used to pay off debts disappears from the income stream. If, however, the creditor uses this amount in buying consumer goods or in some productive activity, then this sum will generate some income, otherwise not.

(ii) **Idle Cash Balances.** It is well known that people keep with them ready cash which is neither used productively nor in purchasingconsumer goods. Keynes has mentioned three motives for holding ready cash for liquidity preference, *viz.*, transactions motive, precautionary motive and speculative motive. This means that the respent part of income goes on decreasing. In this way, a part of the initial expenditure leaks out of the income stream. The cash may be kept in current account or saving account. But it is kept away from the expenditure all right; it would have otherwise added to the future income.

(iii) **Imports.** The part of the money spent by country for importing goods also leaks out of the country's income stream. It does not encourage or support any business or industry in the country. It only helps trade and industry of the exporting country. This money must be supposed to have leaked out of the country's income stream. This is specially so if the imports do not help the trade and industry of the country or if they are not used for export promotion. The net import is a leakage.

(iv) **Purchase of Existing Securities.** Some monied people buy securities from others and the sellers of securities hoard this money. This money also leaks out of the income stream. The result will be the same if a person buys shares or debentures of an existing company or gets an insurance policy or undertakes some such financial investment. Money so spent is not used in consumption expenditure and thus does not help in increasing income. This is a leakage.

(v) **Price Inflation.** Inflationary situation is also responsible for leakage. In such a situation, invest-

ment does not help in generating employment or increasing income. If there is already full employment in the country, increase in investment, far from increasing demand for consumer goods, it decreases it as a result of which employment in the consumer goods industries contracts and demand for capital goods decreases. Whatever increase in income there is, it is spent in high prices and it does not help in creating income and employment.

Conclusion. As a result of leakages of income from the main income stream of the country, the multiplier effect of the primary or initial investment in increasing income is reduced. If somehow these leakages are plugged, the multiplier effect of investment in generating income and employment would increase. If they cannot be plugged altogether, they should be reduced or the propensity to consume should be increased or propensity to save should be reduced, otherwise the new investment will not have full effect in increasing income and employment. Suppose one-third of the new income leaks out in one form or another at each expenditure sequence. This means that marginal propensity to consume is $\frac{2}{3}$. With $\frac{2}{3}$ marginal propensity to consume, an initial investment expenditure of Re. 1 crore, *i.e.*, primary employment and the resulting sequence of consumption expenditure, *i.e.*, secondary employment, would add up to Rs. 3 crores which in the absence of leakages, would have been much more.

Reverse Operation of the Multiplier

It may be pointed out that the multiplier operates both backward and forward depending on the direction of the initial change in investment, *i.e.*, whether investment is increased or decreased. An initial reduction in investment precipitates the reverse operation of the multiplier.

In this case, higher the marginal propensity to consume, the greater will be the cumulative decline in income. A community with a high propensity to consume is hurt more by the reverse operation of the multiplier than one with a low propensity to consume. Conversely, a community with a high propensity to save is hurt less than one with a low propensity to save.

The marginal propensity to consume being less than one serves as a check to a downward cumulative decline of income when investment declines, otherwise, the reverse operation of the multiplier would bring about a collapse of economic activity. This never happens. This shows that propensity to consume being less than one saves the situation.

Reverse Operation of the Multiplier can be explained with the help of the following diagram:—

The initial equilibrium is at point S, with OP as the level of national income. Let the government expenditure fall, shifting the total demand curve from (C+I+G) to (C+I+G)'. The (C+I+G)'

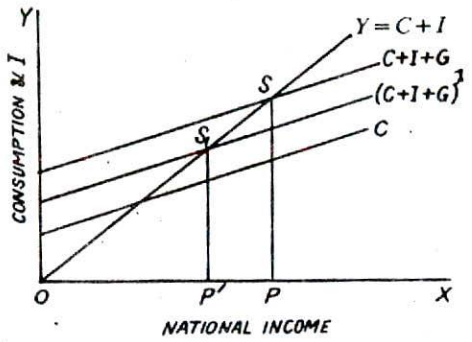


Fig. 44.3

line intersects the 45° line at the point S_1 and the level of income falls to OP'.

Importance of the Multiplier

So far we have discussed the multiplier from the theoretical point of view. Now let us see its practical importance. These days governments actively interfere in the economic activity of the community. Therefore, it is essential to realise the importance of the multiplier in connection with investment. If there is depression and unemployment in the country, the people would like the government to undertake public works so that some employment should be provided to the unemployed. But if it is realised that an investment of Rs. one crore will create employment worth many times, the importance of government investment will become clear. That is, the multiplier principle has added to the importance of public investment.

When a country is engulfed in depression, the entrepreneurs are discouraged from investment, because in such a situation profit expectations are very low. Therefore, if depression is to be lifted and the level of national income and employment is to be raised, it becomes necessary to increase public investment. If during such times, the government undertakes investment, the demand for consumer goods and hence the level of income and employment will increase manifold on account of the working of the multiplier. The operation of the multiplier rapidly removes depression through government investment and the economy moves towards full employment.

It is worth noting that when, owing to government investment to remove depression and unemployment, the demand for goods and the level of income and employment rises, the private entrepreneurs too are encouraged to invest. This happens because as the demand for goods increases and incomes rise owing to government investment, the profit expectations of the entrepreneurs go up and as a result the marginal efficiency of capital rises. Hence when government makes investment in public works to

fight depression and unemployment, private investment is also encouraged on account of the operation of the multiplier. Depression is quickly lifted on account of investment both by the government and private entrepreneurs. If the multiplier did not operate, the increase in income and employment would not have been so much as when it operates. Influenced by the Keynesian principle of the multiplier, the Government of the United States of America undertook large-scale investment in public works to remove the Great Depression of 1929-34. This met with great success and the Depression was lifted.

MULTIPLIER AND UNDER-DEVELOPED COUNTRIES

It may be understood that Keynes' principle of the multiplier does not apply to the under-developed countries like India. The reason is that there are certain essential conditions for the operation of the multiplier. One important condition is that the supply curve of output should be elastic. In other words, when demand for certain goods or services increases, its supply can be increased without much difficulty. This condition is fulfilled in industrialised countries but not in under-developed countries.

Allied with this is another assumption that there is excess productive capacity in consumer goods industries. This being so, the supply of goods can be easily increased when demand increases. If, somehow, demand decreases, this productive capacity lies idle and there is un-employment. In under-developed countries, there is little excess productive capacity in the economy.

The third condition is that the supply of raw materials, working capital, *etc.*, should also be elastic and it should be easily increased when need arises. Such is not the case in under-developed countries.

The fourth condition is that there should be involuntary unemployment. That is, there are people who want work at the prevailing wage rate, but are not getting it. In under-developed countries, most of the people being self-employed, this condition is not fulfilled.

These are some of the assumptions on the validity of which alone Keynes' multiplier will operate. Only in these conditions the multiplier increases income manifold from a given investment. Thus Keynes assumes that (a) the supply of goods and services is elastic; (b) there is sufficient excess capacity in industries; (c) the working capital, *etc.*, can be increased; and (d) the workers seeking employment will be able to find employment and as a result income and employment will increase from a given investment according to the multiplier. For example, if the multiplier is 4, an initial investment of Rs. 1000 will increase income equal to Rs. 4,000.

But since the above conditions are not fulfilled by the under-developed countries like India, the multiplier does not operate in such countries. Like the U.S.A. and the U.K. and Western Europe, India is not a predominantly industrialised country but is a predominantly agricultural country. Hence, the multiplier principle does not apply to India and other under-developed countries. In such countries, there being no excess capacity in industries, the supply of consumer goods is not elastic, *i.e.*, their supply cannot be increased much. Machines, working capital, *etc.*, are not easily available and their supply cannot be quickly increased. Another peculiarity of the under-developed countries is that most of the people in such countries are self-employed and the number of wage-earners is comparatively small. Thus, in these countries, most of the output of goods is for self-consumption and not for the market. There is lot of unemployment but it is disguised unemployment.

It is clear that Keynes' multiplier principle fully applies to the developed economies and not to the under-developed ones, because only in developed economies the various assumptions mentioned above hold good. In the under-developed countries, the conditions are entirely different. It is, therefore, idle to expect the multiplier principle to apply to them.

Suppose in some under-developed country with an investment of Rs. 1 crore a factory is set up where some workers get employment and their incomes increase. But the process of increase in income and employment ends here. The reason is that increased demand for consumer goods resulting from increased incomes cannot be met because the supply of goods is not sufficiently elastic. The only result of increased demand is to raise their prices because their supply cannot be increased. Thus, the increased income is absorbed in enhanced prices without creating any additional output and employment.

In under-developed countries, the principal occupation of the people is agriculture and the greater proportion of their national income is spent in the production of agricultural products like foodgrains. But we know that the supply of agricultural products is inelastic because their production is subject to uncertain natural factors like climate and rainfall. Agriculture is said to be a 'gamble in the rains'. The farmers also lack machinery and other inputs like fertilizers, *etc.* There are also insufficient credit facilities. Hence, it is difficult to increase production. Since the people are generally underfed, the increased incomes resulting from new investment are spent on foodgrains. But since their supply cannot be increased to meet the increased demand, the only consequence is to raise their prices and not increase income and employment which would have resulted from the operation of the multiplier.

There is another peculiarity about the under-developed countries. As income increases in such countries, nearly whole of it is spent on consumer goods. The reason is that the propensity to consume in such countries is very high. Also, a large proportion of their income is spent on food products. If they do not buy them in the market, they consume their own production. In addition, they substitute superior foodgrains for the coarse ones. Their income-elasticity of demand for food is generally very high. Since their own products are self-consumed, the marketable surplus is reduced. This is another reason of a rise in prices. The prices not only of food products rise but also of industrial goods because their supply is also inelastic. Thus, prices rise all round and inflationary spiral is set in motion. This is supported by India's case where huge amounts have been invested under the Five Year Plans. But instead of raising production adequately, it has raised prices.

Thus, Keynesian remedies to remove unemployment and under-employment in backward countries will plunge these countries into inflationary spiral.

As we have already pointed out, in the under-developed countries, the nature of unemployment is different. Instead of involuntary unemployment, there is disguised unemployment. The people do not realise they are unemployed. They are supported by the joint family system and they cling to agriculture, even though their services are not required there. They are not really involuntarily unemployed in the Keynesian sense and yet they are unemployed or under-employed in the clearly economic sense. The particular form which unemployment takes in the under-developed countries, *viz.*, that of disguised unemployment makes the economy for Keynesian purposes practically analogous with one of full employment and to that extent prevents the multiplier from working in the direction of an increase in either output or employment.

Thus, Keynes' multiplier principle is not applicable to the under-developed countries

ACCELERATOR

Concept of Accelerator

In the study of the multiplier, we have seen how a small change in investment exerts a magnified effect on consumption and hence on income and employment. In other words, the multiplier describes the relationship between investment and income, *i.e.*, the effect of investment on income. The multiplier concept is concerned with original investment as a stimulus to consumption and thereby to income and employment. But there is another type of relationship between investment and income which is the other way about. In this relationship, we are not concerned with the effect of investment on income (*i.e.*, the multiplier effect), but we are concerned with the effect of increase in income on the resultant investment. This effect involves what has been called the 'principle of acceleration'. This traces the effect of added consumption upon the demand for investment. It is a case of derived demand, *i.e.*, demand for investment goods, derived from increase in consumption or income.

The principle of acceleration dates back to 1914 and beyond. It is associated with the name of J. M. Clark who was mainly responsible for popularising it. It has proved to be a useful tool of economic analysis since 1914, although Keynes entirely ignored it. In fact, it is not considered a part of Keynesian Economics. Keynes emphasised psychological concepts like marginal propensity to consume, marginal efficiency of capital and the multiplier rather than the accelerator which is regarded as a technical concept.

Let us be clear about the concept of the Accelerator. When income increases, people's spending power increases; their consumption increases and consequently demand for consumer goods increases. In order to meet this enhanced demand, investment must increase to raise the productive capacity of the community. Initially, however, the increased demand will be met by over-working the existing plants and machinery. All this leads to increase in profits which will induce entrepreneurs to expand their plants by increasing their investments. Thus, a rise in income leads to a further induced investment. The accelerator is the numerical value of the relation between an increase in income and the resulting increase in investment.

In other words, the acceleration principle simply tells us that if owing to increase in people's incomes, the demand for consumption goods increases, the derived demand for the factors of production, producers' goods in particular, say, machines to make the consumption goods, will increase. But the point to be noted is that investment in the making of machines will even increase faster than the demand for the product.

But the accelerator in Economics is not to be confused with the accelerator in a motor car. In the case of a car, the accelerator makes it run faster and ever faster. That is not the case with investment in business. It does not increase faster and ever faster, the downtrend also appears after some time. The accelerator in Economics expresses only a functional relationship between consumption demand and investment demand, *i.e.*, demand for machines which make the final product or the consumers' goods. "It makes the level of investment a function not of the level of consumption but of the **rate of change** of consumption."[2] The level of investment is a func-

2. Stonier and Hague--*A Text Book of Economic Theory*, 1973, p. 501.

Demand for cloth in rupees		*Needed stock of Capital* 2	*Replacement expenditure* 3	*Net investment* 4	*Gross investment* 5
Period 1	500	5 machines = 1500 rupees	1 machine = 300 rupees	0 machine	300 rupees
Period 2	500	5 machines = 1500 rupees	1 machine = 300 rupees	0 machine	300 rupees
Period 3	800	8 machines = 2400 rupees	1 machine = 300 rupees	3 machines = 900 rupees	1200 rupees
Period 4	1000	10 machines = 3000 rupees	1 machine = 300 rupees	2 machines = 600 rupees	900 rupees
Period 5	1000	10 machines = 3000 rupees	1 machine = 300 rupees	0 machine	300 rupees
Period 6	800	8 machines = 2400 rupees	1 machine = 300 rupees	−2 machines = 600 rupees	−300 rupees

tion of the rate of change in the level of income. "This expression of the acceleration maintains the hypothesis that a fluctuation in the independent variable will give rise to a greater fluctuation in the dependent variable."[3]

Working of the Accelerator

An illustration will make the working of the accelerator clear. Suppose we are living in a world, where the only commodity produced is cloth. Further suppose that to produce cloth worth 100 rupees, we require one machine worth 300 rupees, which means that the value of the accelerator is 3 (*i.e.*, capital-output ratio 1:3). That is, if demand rises by 100 rupees, additional investment worth 300 rupees takes place. If the existing level of demand for cloth remains constant, let us say, at 500 rupees, then to produce this much of cloth we need five machines worth Rs. 1,500. At the end of one year, let us suppose, that one machine becomes useless as a result of wear and tear, so that at the end of one year, a gross investment of 300 rupees must take place to replace the old machine in order that the stock of capital is capable of producing output worth 500 rupees.

In the third period, demand rises to 800 rupees. To produce output worth 800 rupees, we need 8 machines. But our previous stock consisted of only 5 machines. Thus if we are to produce output worth 800 rupees, we must instal 3 new machines, worth 900 rupees. In addition, since at the end of one period one old machine has become useless, even to maintain previous stock of 5 machines, we need to instal one new machine in place of the old one. Thus, net investment will be 900 rupees and replacement investment 300 rupees so that our gross investment rises from 300 rupees in period 2 to 1,200 rupees in period 3. A 60 per cent rise in demand gives rise to 400 per cent increase in gross investment. Here we have a glimpse of the powerful destabilising role of accelerator.

In the fourth period, demand rises from 800 rupees to 1,000 rupees (25%), but total gross investment is only 900 rupees which is 25% less than the period third. In the fifth period, even though demand remains constant at 1,000 rupees, gross investment falls to 300 rupees which is 33.3% of the fourth period while net investment falls to zero. Thus, in order to keep the economy prosperous, mere standing still or running at a slow pace is no good. We must run and run faster and faster in order to ward off the danger of a depression. This is because of the extremely destabilising role of the accelerator.

We assume (a) a constant sum of replacement expenditure which falls due each period; (b) relationship between capital stock and the total output, *e.g.*, 1:3 ratio, is determined by technological factors. This ratio is to be considered an average of the various industry ratios, and (c) we assume that real profits move with aggregate output. We are not, therefore, concerned with the problem of capacity and its effect on the accelerator nor with the problem of profits. The anticipated output with planned expenditure is assumed to be equal to the realised output.

In the above table, we see that when output or income becomes stabilised round the peak (*e.g.*, period 4 and 5), the pressure for the decline becomes more intense, because a halt in the increase in output means an accelerated contraction in investment spending. There is no gross investment at all in period 6, which means that relative to the lower level of output the system is still in excess capacity. The wear and tear of equipment is a technical process and is divorced from the rate of economic contraction. The decline in investment expenditure cannot go beyond zero replacement.

3. Bober, Stanley—*The Economics of Cycles and Growth*, 1971, p. 142.

It may be noted that the acceleration principle does not act as well in the down-turn as it does during the up-turn ; regardless of the rate of change in output, the limit to the decline in investment is zero replacement.

We may note that investment goods fluctuate more intensely than does aggregate output. The acceleration principle explains, the large cyclical fluctuations of investment spending.

Criticism of the Acceleration Principle

In the acceleration principle, we find a powerful explanation of the destabilising forces working in the economy during a trade cycle. If the accelerator is the only force at work, then we shall have too much of instability in the economy—more than is actually found. In real life, we find that there are limits to instability, both in the upward as well as the downward direction, so that the trade cycle must have a peak as well as a bottom.

The principle of acceleration has come in for a good deal of criticism in recent years. For example, it has been pointed out by Kaldor that we cannot assume a constant value of the accelerator throughout the trade cycle, that it is not true that an increase in demand of 100 rupees must always give rise to an increase in investment of 300 rupees (as in our example). This is because, if already some machines are lying idle, we shall try to use them before rushing in for new equipment. Also, if our expectation is that the rise in demand is a temporary one, we shall try to meet by overworking the existing machinery rather than installing a new plant.

Further, it may be easier for a firm to take advantage of a small increase in demand than big ones—for the financial resources of a firm may not be sufficient to take immediate advantage of big increases, while small additional equipment is not likely to strain its financial resources to any great extent. Hence, its response to the latter may be quicker than to the former.

Conclusion. Thus, the simple type of acceleration principle turns out to be a crude instrument, for the value of the accelerator will vary at different stages of the trade cycle. But this does not mean that the basic principle, underlying the acceleration principle, is wrong. It is based on a sound principle that a change in national income will tend to induce corresponding additional changes in the rate of investment.

Limitations of the Accelerator

It seems that the explanation of fluctuations in the capital goods industries provided by the principle of acceleration is too good to be realistic. The assumptions on which it is based are too rigid and do not hold good in real life. If increase in demand for consumption goods led to much more than proportionate increase in the capital goods, fluctuations in the capital goods industries would be much larger than they actually are: We have assumed great inflexibility of output in the consumer goods industries and great flexibility in capital goods industries.

The following assumptions made in the discussion of the accelerator make it unrealistic:

(i) We have assumed that there is no excess capacity exising in consumer goods industries. In other words, we have assumed that no machines are lying idle and shift working is not possible. If there had been excess capacity and shift working was possible, the supply of goods could be increased with the existing equipment and the accelerator would not come into play.

In the capital goods industries, we have assumed the existence of surplus capacity. If there was no excess capacity in the machine-making industry, increased demand for machines could not lead to increase in the supply of machines. Actually, the things are not so rigid as supposed.

(ii) The second assumption is the flexibility of output. It is assumed that the machine-making industry is capable of increasing its output for the time being at least. The supply can be increased by reducing stocks of finished machines, by working extra shifts, and so on. But stocks cannot be reduced below zero and working double shifts or adoption of other experiments is found to be expensive. Only when the demand has increased permanently, will the entrepreneur find it worthwhile to increase investment for installing additional machines.

(iii) The size of the accelerator does not remain constant over time. Its value will be affected by the businessman's calculations regarding the profitability of installing new plants to make more machines on the basis of their probable working life. It also assumes that the demand for machines will remain stable in future, although the increase in demand has suddenly cropped up. The entrepreneur will have to make so many complicated calculations like the future demand for the final product made by the machines, about the future demand for machines themselves, about the cost and availability of machines, about interest rates, and so on. This indeed is too much for an average entrepreneur.

Utility of the Accelerator

In spite of these limitations and difficulties, the concept of the accelerator has proved a very useful tool of economic analysis. There is no doubt that it has restricted application but it does not mean that it has no place in any realisitc discussion of the factors affecting income and employment. Some economists have made use of the acceleration principle in formal, mathematical models to bring out how an economy would react if there was a sudden increase in demand for goods.

Comparison Between the Accelerator and the Multiplier

Now that we have studied both the multiplier and the accelerator, we can pause and compare the two. There seems to be some resemblance between the two but the difference should be quite clear by this time. We have to repeat what we have said already. The multiplier shows the effect of a change in investment on income (and consumption) whereas the accelerator shows the effect of increase in income (and consumption) on investment.

Another remarkable difference is that the multiplier ultimately depends on psychology; it depends on the propensity to consume which is determined by consumers' tastes and habits and the marginal efficiency of capital, which depends on entrepreneurs' expectations of profit or their confidence in the success of the investment. This is all psychological. But the accelerator depends on technical factors. It depends on the fact that a given amount of capital (*i.e.*, a machine) is required to produce a given amount of final product, *i.e.*, a consumption good. Hence, the accelerator is based on technology, whereas the multiplier depends on psychology.

APPENDIX

THREE CONCEPTS OF THE MULTIPLIER

Three concepts of the multiplier are: Static Multiplier; Comparative-Static Multiplier and Dynamic Multiplier.

Static Multiplier

The multiplier discussed earlier in this chapter (pages 374–75) is an example of a static multiplier. It shows a still picture analysing the forces bringing about an equilibrium at a given time.

Comparative-Static Multiplier

The comparative static multiplier is the third type of multiplier. It is 'timeless' in the sense that it leaps over the time interval between two successive static equilibrium positions. It does not show the path actually travelled between the two positions of equilibrium. In other words, the process and the time it takes from one equilibrium level to another is ignored. It is assumed that there are no changes in the MPC of the various income recipients as the economy moves from one equilibrium level to the next. The comparative static analysis simply leaps over the transition period. It skips from one equilibrium position to another. It leaves out of account the time path in between.

Dynamic Multiplier

The dynamic multiplier shows a movie picture. It is a moving equilibrium or logical theory of the multiplier which holds good continuously without time lag. The dynamic analysis of the multipler attempts to trace the steps by which income changes from one equilibrium level to another. Obviously, such changes can occur only over time and not instantaneously. In dynamic multiplier, we assume that production adjusts to changes in demand instantaneously, that expenditures are instantaneously translated into income receipts; but consumption responds to changes in income with a lag of one period.

We begin with an initial equilibrium income level Y. Now suppose that autonomous investment rises by ΔI in the first period and that subsequent investment remains above the intitial level by the amount ΔI. That is, increase in investment is supposed to be permanent. In the first period, income will rise by the amount of increase in investment. Hence $Y = Y + \Delta I$. In the second period, income will be in excess of the initial level Y not only because investment remains in excess of the initial level but also because a fraction say b of the first periods' income increase is re-spent on consumption. Hence

$$Y_2 = Y + \Delta I + b(Y_1 - Y)$$
$$= Y + \Delta I + b\,\Delta I \text{ or}$$
$$Y_2 - Y = \Delta I + b\,\Delta I.$$

Similarly in the third period, income will exceed the initial level by ΔI increase in investment spending plus b times the excess of income in the second period over the initial level. Hence

$Y_3 = Y + \Delta I + b\,\Delta I + b_2\,\Delta I$, and so on for any period $n-$

$Yn = Y + \Delta I + b\,\Delta I + b_2\,\Delta I + b_3\Delta I + b^{n-1}\,\Delta I$.

It is thus that the dynamic equilibrium traces the path of income as it adjusts from the old equilibrium level to the new equilibrium level.

THE BALANCED BUDGET MULTIPLIER

The multiplier effect may be associated with changes in both taxes and transfers. This multiplier effect is normally smaller than the multiplier effect associated with a change in government expenditures. Any increase in government expenditures may have an expansionary effect even though these expenditures are matched by an equal increase in taxes. This possibility has been called **balanced budget thesis.**

How will the combined impact of the increase in both government expenditures and taxes affect the income level? This effect depends upon the combined impact of the increase in government expenditures and the taxes upon the aggregate demand function.

45 WAGES AND EMPLOYMENT

The relationship between wage rate and the volume of employment has been a subject on which acute controversy has raged. We shall here examine in this connection the views of the classical economists, the Keynesian view and the view of the modern economists.

CLASSICAL VIEW

The classical economists held the view that the economic system automatically adjusted itself at the level of full employment through wage-price flexibility. According to this view, there was a strong tendency towards full employment via wage adjustment. For example, if during depression, money wages were reduced all round, it would be possible not only to reduce unemployment but eventually to create a situation of full employment. A cut in money wages will lower marginal production costs and as a result, lead to increase in output and employment. The output (and hence employment) will increase, because reduction in production costs will enable the producers to lower prices and stimulate demand. Unemployment, if any, will be a temporary phase.

It will appear that the classical remedy for unemployment is to cut down the money wages all round. The process of bidding down the wages should continue till the employers find it worthwhile to employ all people seeking jobs. According to this view, unemployment exists because wages are kept at a higher level than what some employers consider worthwhile. So long as there is some involuntary unemployment, wages and prices must continue to fall. This will lead to increase in investment, output and income, until unemployment is eliminated.

Assumption

The classical theory is based on one big assumption, *viz.*, that a cut in money wage results in reduction in the real wage. It is reduction in real wage which will stimulate investment and increase output and employment. With cut in money wages, costs and prices fall. But, since prices do not fall to the same extent as the cut in wages, real wages are reduced. Reduction in real wages, without a corresponding fall in prices, widens profit margins, and hence provides incentive to the producers to increase investment. In this way, output will continue to increase till full employment equilibrium is established.

Criticism

Keynes severely criticised the classical view. He made a comprehensive analysis of the problem and pointed out serious flaws in the classical argument. The main flaw is that the classical economists have ignored the demand aspect. They hold that reduction in wages will leave the aggregate effective demand unaffected. There is no doubt that reduction in wages will, as explained already, lead to increase in output. But, unless the increased output is purchased and consumed, investment will be discouraged and output and employment reduced.

The classical economists simply saw that when wages in a particular industry were reduced, profits there increased, resulting in larger output and employment. Cut in wages in a particular industry or by a particular firm does not reduce the demand for the products of that industry. This is so, because their particular labour is a small fraction of the total labour force. Their purchasing power may be reduced by a cut in their wages, but the purchasing power of the rest of labour is not reduced. Hence, the demand for goods will not be reduced. On the contrary, the cheapening of the goods produced by them will increase demand for them. Their output will increase and so employment in that particular industry will increase.

But what is true of a particular industry cannot be true of the economic system as a whole. If there is a

general wage cut, *i.e.,* cutting of wages in all industries, then the incomes, and so the purchasing power, of all workers will decrease. Reduction in aggregate effective demand will result in reduction of output and curtail the volume of employment. It is to be remembered that so far as the economy is concerned, wages are not only cost but also source of demand.

It is not necessary that a cut in money wage may lead to a reduction in real wage. If prices fall to the same extent as wages fall, real wages remain the same. Real wages will be reduced only when prices do not fall to the same extent as fall in wages. It is reduction in real wages which is going to provide incentive to the producers to invest and increase output and employment.

Thus, the fatal flaw in the classical analysis is that it suffers from the lack of a theory of effective demand and it arises from the classical economists' attempt to apply, to the economy as a whole, the logic of a theory designed to apply to a particular industry. They ignored the fact that an all-round reduction in wages or a general or overall cut in wages would reduce effective demand or aggregate demand which will reduce employment rather than increase it.

The classical and Keynesian ideas can be explained with the help of the following diagram(45.1):

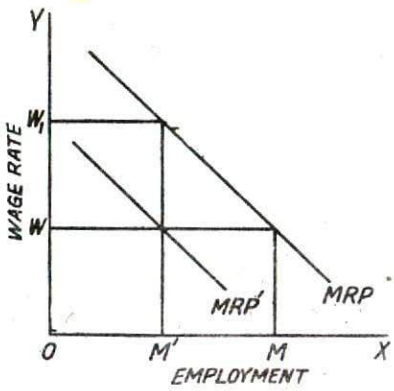


Fig. 45.1

OM is the level of full employment. MRP is the marginal revenue productivity curve. With OW_1 wage rate, OM' people are employed, leaving M'M as unemployed. Unemployment leads to competition for jobs in the market, forcing wage rate down to OW. At this wage rate, OM persons are employed, which is a situation of full employment. Hence reduction in wages has helped in achieving full employment, through wage reduction. According to Keynes, however, if there is an all round wage cut, then people will have less purchasing power. Reducing money wages means less spending. This would result in a fall in prices and hence the total receipts of the firms fall. A fall in the prices pushes the MRP curve leftwards, *i.e.,* to MRP'. With MRP' as the marginal revenue productivity curve, employment will not increase as a result of a wage cut from OW_1 to OW.

KEYNESIAN ANALYSIS

We shall now briefly summarise the Keynesian analysis regarding the relationship between wages and employment as under:—

(1) In the first place, Keynes agreed with the classical economists that other things being equal, employment varied inversely with the level of real wages. That is, when real wages rose, the volume of employment was curtailed, and *vice versa.* In other words, the demand for labour depends on the real wage rates: It increases when the real wage rate falls and decreases when the real wages go up.

(2) Keynes did not agree that a cut in money wages for the economy as a whole will necessarily cut the real wages. On the other hand, a reduction in the money wages reduced *proportionately* the total outlay, demand and prices so that the real wages remained the same. Unless real wages are reduced, employment cannot increase. There is no doubt that an individual firm can, by cutting money wages, reduce costs and thus increase sales and employment. But when a general wage-cut is effected throughout the economy, demand schedule will register a fall throughout, because all workers find their purchasing power reduced.

(3) Keynes believed that, while keeping the money wages constant, aggregate demand must be raised to increase employment. He said that it was possible to keep the money wages stable under a system of collective bargaining and the aggregate demand can be raised by fiscal and monetary measures.

(4) Keynes further believed that a rise in aggregate demand, while the money wages are kept constant, would normally lead to a reduction in real wages. And a reduction in real wages would stimulate investment and increase employment. He agreed that since organisation, equipment and technique do not change in the short run, an increase in aggregate demand would result in increased output and a rise in marginal cost and prices. Rise in prices would mean a cut in real wages. **It is increase in employment which reduces real wages, and not the other way round.**

(5) According to Keynes, the wage-earners do not mind a small rise in prices and do not agitate for a corresponding rise in money wages. But they vigorously resist a cut in money wages. Hence, a better and more practical method of increasing employment is to raise aggregate demand and not cut money wages. For instance, the wage earners are offended at a cut in money wages, but they cannot

blame the employer for a reduction in real wages. A cut in money wages also increases the burden of their debt. The wage earners are not satisfied even if the prices fall in proportion to the cut in money wages, because they fear that the prices may again rise to their old level. Thus, according to Keynes, it is neither wise nor feasible to cut money wages. The wage earners oppose cut in money wages even when the prices are falling. Thus, in modern times of strong trade unionism, it is impossible to cut money wages.

(6) In order to explain why a general cut in money wages would not increase employment, Keynes analyses the effect of cut in money wages on the main determinants of income and employment, *viz.*, marginal efficiency of capital, consumption function and the rate of interest (discussed on the next page). He shows that all these factors are adversely affected by a cut in money wages. Hence, we cannot hope to increase employment by cutting money wages, unless other factors are favourable.

Conclusion. Keynes comes to the conclusion that a cut in money wages is no remedy for unemployment nor a suitable prescription for increasing employment.

Money Illusion

In this connection we would like to refer to a concept called 'money illusion'.

Professor Irving Fisher introduced in economic theory the term 'Money Illusion' in his book of the same name based on a series of lectures that he delivered at Geneva School of International Studies in 1927. By 'money illusion' he meant that the people thought that a rupee was a rupee for ever. That is, its value or purchasing power in terms of goods and services never changes. People generally fail to perceive that a unit of money does not always buy the same quantity of goods and services, *i.e.*, its purchasing power varies from time to time. Thus, the constancy of the purchasing power of money is a myth, but somehow people cling to the illusion that it is not so.

It is the existence of money illusion which explains that there is a great discontent among the workers whenever their employers cut money wages and they do not hesitate to go on a strike. But, when their standard of living suffers owing to rising prices, the discontent is not so great. Rise of prices hits them underhand, as it were, while the cut in money wages is deemed a direct attack. As the late Lord Keynes observed, "Whilst workers will usually resist a reduction in money wages, it is not their practice to withdraw their labour whenever there is a rise in the price of wage goods".

What explains the existence of the money illusion in the minds of the people? There are two possible explanations: (a) when prices rise, the workers in a particular industry feel that the workers in other industries are also hit to the same extent and their relative position does not suffer in any manner. The workers seem to be more keen on maintaining their relative position than to raise their absolute wages. (b) The workers strongly resent a cut in their money wages, because they feel that it has been imposed by their own employers and they must retaliate by going on a strike. On the other hand, the rise in prices (*i.e.*, reduction in real wages) is not considered in any way due to any action on the part of their own employers.

Thus, the existence of money illusion has a practical implication. It is this that workers will resent any reduction in their money wages, but will not take much notice of a reduction in real wages. Hence, if there is unemployment in the country due to high wages, the proper solution will be to reduce real wages and not touch the money wages. In other words, it would be preferable to increase employment by reduction in real wages than by cuts in money wages.

EFFECT OF WAGE-CUT ON DETERMINANTS OF EMPLOYMENT

We have said above that employment cannot be increased by cutting money wages. Why not? For this purpose, we shall have to consider the effect of the wage-cut on the main determinants of employment, *viz.*, marginal efficiency of capital, propensity to consume and the rate of interest.

Effect on Marginal Efficiency of Capital

It is obvious that if money wages are reduced, the profit expectations improve or the marginal efficiency of capital increases. This will stimulate investment and increase employment.

But a cut in money wages will promote investment only if the entrepreneurs believe that there will be no further fall in money wages. If a further fall in wages is expected, then the entrepreneurs will wait and put off their projects. Under a system of perfect competition, there is no guarantee that if wages have once fallen, they will not fall further.

Also, wage-cuts may provoke agitation on the part of the workers resulting in industrial disputes. Such a state of affairs is not conducive to profitable investments. In this case, marginal efficiency of capital is likely to go down.

There is another reason why marginal efficiency of capital may be adversely affected by a cut in money wages. When wages fall, prices are likely to fall too. A fall in prices will increase the burden of debt, both private and public. Increase in public debt will necessitate increase in taxation. All this will have a depressing effect on investment and employment.

However, profit expectations or marginal efficiency of capital will rise in export industries,

because wage-cut will cheapen export goods. But it will have to be considered what retaliatory measures the importing countries may adopt to meet our competition.

Effect on Consumption Function

It is quite clear that a general cut in wages will reduce the purchasing power of the masses of workers. Their consumption will diminish. Hence, effect of a wage cut on propensity to consume is more likely to be unfavourable than favourable. Income distribution in the community will become more unequal. This re-distribution of income favouring the saving class and unfavourable to the consuming class is likely to lower the consumption function.

Cut in money wages may, however, raise consumption function in some cases. This effect was ignored by Keynes but pointed out by Pigou who was the chief supporter of the classical view. That is why it is called "Pigou effect". It is clear that a cut in money wages leads to reduction in prices and income, which means the value of money goes up. As a result, the real value of various forms of money assets, *e.g.*, bank deposits, government securities goes up. This creates a **'money illusion'** and makes the owners of these assets feel richer than before, whose propensity to consume, therefore, increases.

Now we have to see whether Keynesian effect is stronger or the Pigou effect is stronger. That is, whether the redistribution of income resulting from a fall in money wages affects the propensity to consume more than the rise in the real value of money assets. The majority of the economists hold that the adverse effect as pointed out by Keynes is far stronger than the favourable effect pointed out by Pigou. We may, therefore, conclude that a reduction in money wages would lower the consumption function rather than raise it.

Effect on Rate of Interest

According to Keynes, cut in money wages will lower the general price level. Therefore much less amount of money is needed for transactions. That is, transactions motive demand for money is reduced. This means that the remaining quantity of money exceeds the existing speculative demand for money. This will result in lowering of the interest rate which will tend to stimulate investment and increase employment. The greater the fall in wages and prices, the greater the quantity of money released from active balances to inactive balances, and, therefore, greater the fall in the interest rate.

It is well to remember three things in the analysis of Keynes' effect of cut in wages on interest rate: (a) The fall in the interest rate will depend on the amount of money released from transactions motive. It also depends on whether the speculative demand for money is interest-elastic or interest-inelastic. It may be that the liquidity preference of the people at the time may be so strong that in spite of a large amount of money having been released from the transactions and being available for speculative motive, the rate of interest does not fall. However, if speculative demand for money is interest-inelastic then the rate of interest will fall, when money for speculative motive has been increased.

(b) Investment and employment are not likely to increase if, in spite of a fall in wages, the profit expectations of the entrepreneurs have been adversely affected somehow.

(c) It should also be borne in mind that Keynes' effect of cut in money wages on interest takes place through the monetary route. That is, it is the same as increasing the total amount of money in order to increase the amount available for speculative motive. But, from a practical point of view, flexible money policy is preferable to flexible wage policy. This is so because policy of cutting wages has to face many difficulties. Keynes has shown that the favourable effect of wage reduction can be achieved far more effectively by deliberate expansion through deficit financing. In this case, harmful effects of falling prices on profits can be avoided, while the favourable effect will be more pronounced.

Summing up

The effect of money wage cuts on the level of employment may be summed up as under:—

"The effect of money wage cuts on the level of employment will depend to some extent on the importance of Pigou effect, on the significance of foreign trade, on the effect of 'money illusion' (thinking increase in mony wages as increase in real wages), on consumption, on money illusion in the tax structure, on the effect of redistribution of income on consumption, and finally on the nature of expectations induced by wage cuts".[1]

MODERN THEORY OF WAGES AND EMPLOYMENT

The modern economists by and large agree with Keynesian analysis. But there are some differences which we shall try to bring out here.

According to Keynes, a decline in the real wage is a condition for increase in employment. We have already referred to his agrument that since organisation, equipment and technique do not change in the short run, an increase in aggregate demand would lead to increased output and a rise in marginal cost and prices. Rise in prices means a fall in real wages even when money wages remain constant.

But the modern economists do not agree that an

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1. Dernburg and McDougall—*Macro-Economics, International Student Edition*, p. 148.

increase in employment resulting from increase in effective demand would necessarily lower real wage. They put forward the following arguments in support of this view: —

(i) It is pointed out that in fixing prices of their products, the producers usually follow "full cost" pricing policy rather than fixing them on the basis of marginal cost. When prices are fixed on a full cost basis, costs will fall as output expands up to a point at which rising marginal cost rises above total unit cost. Till this point is reached, it is possible to expand output at prices lower than those obtaining before the expansion of output started.

(ii) Keynes has assumed that, in the short run, there is no change in organisation, equipment and technique so that marginal costs must rise. But we know that improvements in these respects are continually being made, which check the tendency of the marginal costs to rise.

(iii) The modern economists believe that the marginal cost curve remains flat over considerable range of output, whereas Keynes believes that the marginal cost curve rises upwards even with a small increase in output. It follows, therefore, that in the view of the modern economists, it is not necessary for the costs and prices to rise as output expands and the real wages need not fall. Improvements in techniques may even result in the fall of the marginal cost. Hence, real wages may even rise, instead of falling. The modern economists do not, therefore, subscribe to the view that there is an inverse relationship between wage rates and employment. They are more optimistic in thinking that there are possibilities of expanding employment through raising aggregate demand. This is because, according to modern theory, prices need rise less as employment and output expand than what Keynes had believed.

Conclusion. Barring the points mentioned above, the modern economists subscribe to Keynesian analysis of relationship between wages and employment.

Application to Wage Policy

Analysis of wage-employment relationship given here is not a mere theory but it has great practical importance. It helps governments in formulating and following a suitable wage policy. It need hardly be emphasised that co-operation of labour is a key to the progress and stability of industrial economies. Hence, the importance of a suitable labour policy.

It is clear from the analysis given above that employment cannot be increased by a general cut in money wages. If a policy of cutting money wages all round is adopted, it will have adverse repercussions in the economy on account of decrease in aggregate effective demand. Economic conditions will become worse than before.

Reduction in money incomes of the people or deflation will adversely affect the main determinants of output and employment. These determinants can be favourably influenced only through appropriate monetary and fiscal policies. Fiscal and monetary measures can, therefore, be far more effective in increasing employment than a policy of a general cut in money wages. It will avoid deflation which is detrimental to the growth of output and employment but which is bound to result when money wages are cut over the entire economy.

Hence, an appropriate wage policy will be one which keeps the money wages stable. Modern wages-employment theory indicates efficiency wages as the appropriate goal of wage policy. If somehow, even by mistake, efficiency wages (*i.e.*, labour cost) have been raised, it is now the generally accepted view to recognise the situation as an accomplished fact and not to attempt a wage cut and get involved in a deflationary situation.

It does not, however, follow that wages should be allowed to go on increasing without any increase in productivity. If through pressure or wrong policies, wages are raised heedlessly, it will usher in an inflationary situation which is equally dangerous for economic stability. Hence, it is more appropriate to maintain wage stability as far as possible.

PIGOU EFFECT OR REAL BALANCE EFFECT

We have already referred to Pigou Effect (See P. 362). But we would like to elucidate it further in view of its theoretical and practical importance. Keynes held that shift in the consumption function came from changes in income distribution incident to wage reduction. But Pigou was of the opinion that shifting of consumption function upward was due to increase in the **real** value of money assets resulting from a fall in money wages and prices. This is the **'real balance effect'.**

When wages and prices fall, the total **real** value of the public's holding of wealth which has fixed money value, (in the form of money assets like bank balances, bonds, government securities etc.) will increase though wealth in the form of goods, land or equities will depreciate. Thus a fall in prices will increase in **real** terms the wealth of consumers to the extent that its money value is fixed. Now consumption is an increasing function of the level of wealth and income. Hence a rising real value of wealth stimulates consumption outlays at all levels of income.

Thus we see that Pigou concentrates exclusively on the 'real-value-of-money-assets' effect, called the real balances effect.

46 UNEMPLOYMENT AND FULL EMPLOYMENT

TYPES OF UNEMPLOYMENT

Structural Unemployment

In the modern world, man by himself hardly produces anything. Even the primitive man needed some elementary tools like the bow and the arrow to engage in hunting for the earning of his livelihood. With the growth of technology and specialisation, he needs much more capital with which to engage in the productive activity. All these instruments of production constitute community's stock of capital. Now, if the working force grows faster than the stock of capital of a country, the entire addition to the labour force cannot be absorbed in productive employment—because not enough of instruments of production are there to employ them. The resulting unemployment is known as the **structural, long-term or Marxian unemployment.**

Seasonal Unemployment

Seasonal unemployment arises because of the seasonal character of a particular productive activity so that people become unemployed during the slack season. Indian agriculture is a seasonal occupation so that the farmers have not sufficient work to do during the slack season. Other examples of seasonal industry are the ice factories, the rice mills, the sugar factories, *etc*. The solution has to be found in re-arranging the process of production, and, where this is not possible, complementary and subsidiary jobs have to be created for the people suffering from seasonal unemployment.

Frictional Unemployment

Frictional unemployment exists when men are temporarily out of work because of the lack of perfect mobility on the part of the labour. In a growing and dynamic economy, in which some industries are declining and others are rising and in which people are free to work wherever they wish, some volume of frictional unemployment is bound to exist. This is so because it takes some time for the unemployed labour to learn new trades or to shift to new places, where there is a demand for labour. Thus, frictional unemployment exists when there is unsatisfied demand for labour, but the unemployed workers are either not fit for the jobs in question or are not in the right place to meet this demand.

In frictional unemployment, workers are only temporarily unemployed, the reasons being immobility of labour, the seasonal work, shortages of materials, breakdowns in machinery and equipment, ignorance of the job seekers, *etc*.

We cannot conceive of frictional unemployment, unless there is unsatisfied demand for labour somewhere in the economy. If, in a country, the total demand for labour falls short of the total supply of labour, then the cause is not frictional but some other. Some action can be taken to minimize the harmful consequences of frictional unemployment by offering quick retraining facilities to the unemployed, providing labour exchanges, and by arranging adequate social security measures to help the unemployed during the transition and by regulating, in an orderly manner, the pace of technological change.

In spite of some frictional unemployment, we can say there is full employment if those who wish to work are able to get work.

Keynesian Unemployment or Cyclical Unemployment

We have explained above that the equilibrium level of income and employment may well be established at less than full employment level. Consequently, there is some unemployment. This is known as Keynesian unemployment. It is due to deficiency of aggregate effective demand. This is also called **cyclical unemployment.** It is so called because business depression occurs at more or less

regular intervals. During times of depression, business activity is at a low ebb and unemployment increases. Some people are thrown out of employment altogether and others are only partially employed. Advanced capitalist countries have been suffering from time to time from this type of unemployment. This type of unemployment arises not because of 'too little' capital as in the case of structural unemployment, but because of 'too much' capital for a short while in relation to demand for goods and services.

In other words, this type of unemployment is due to the fact that the total effective demand of the community is not sufficient to absorb the entire production of goods that can be produced with the available stock of capital. In a free private enterprise economy, production takes place in response to the profit motive. When businessmen cannot sell their entire output, their profit expectations are not fulfilled so that their reaction in the next period is to reduce their output. Now, factors of production earn their incomes because of their participation in the process of production and, when entrepreneurs decide to reduce their production, some factors of production become unemployed. Since employment is the major source of incomes for a great majority of people, a fall in employment signifies a fall in their incomes also.

Measures to Remove Cyclical or Keynesian Unemployment. We know that the Keynesian unemployment is due to the deficiency of effective demand. We can, therefore, remove this type of unemployment by boosting up the level of effective demand. This can be done by raising the rate of investment or shifting the consumption function to the left. To increase the rate of investment, the government can adopt the following measures:

(i) The government may decide to induce the private investors to invest more. For this reason, the government may pursue a cheap money policy of lowering the rate of interest. We know that ordinarily, the lower the rate of interest, the higher will be the level of private investment.

(ii) Alternatively, the government may encourage private investment by reducing the taxes on profits, so that the post-tax rate of profit will now be higher than before.

(iii) If in spite of all these measures, adequate private investment is not forthcoming, the government may try to boost up private consumption by reducing the tax rates on incomes and commodities. The government may also offer direct subsidies to increase private consumption.

(iv) If all these measures do not lead to full employment, the government may itself decide to increase its investment by resorting to a public works programme. This will offer additional employment to the factors of production which, in turn, will experience the familiar multiplier effects.

Nature of Unemployment in Under-developed Countries

Bulk of the unemployment in under-developed countries is of a different nature from that in advanced and developed countries. A major part of the unemployment in developed countries is of cyclical nature which is due to deficiency of aggregate effective demand. But most of the unemployment in under-developed countries is not cyclical. Instead, it is a long-term problem. The major cause of unemployment and under-employment in under-developed countries like India is the deficiency of the stock of capital in relation to the needs of the growing labour force.

The classical economists were mainly concerned with structural or Marxian unemployment. A nation's stock of capital can be enlarged by increased investment which, in the absence of any unutilised resources, requires additional savings on the part of the community. The concern of the classical economists was to ensure that the rate of capital formation was kept sufficiently high so that employment opportunities were successively enlarged to absorb the additions to working force of the country as a result of population growth.

This is the problem that underdeveloped countries like India are facing today. Since our stock of capital has not been growing at a rate fast enough to keep pace with the growth of population, the country's capacity to offer productive employment to the new entrants to the labour market has been severely limited. This manifests itself in two ways—firstly, the prevalence of large-scale unemployment in the urban areas as evidenced by the statistics of employment exchanges; secondly, it manifests itself in the form of growing numbers engaged in agriculture, resulting in disguised unemployment.

It is common knowledge that with minor changes in organisation and with existing techniques, our agriculture can be looked after by a much smaller number of persons than are actually engaged in it. If alternative employment opportunities were available, these people could be removed from agriculture, where their marginal productivity is very low (if not zero or negative), to occupations with higher marginal productivity, and the national income of the country would rise. Since employment opportunities in the non-agricultural sector are not growing rapidly, the new entrants to the working force are compelled to remain in agriculture and perpetuate the phenomenon of **disguised unemployment.** This means that people are engaged in occupations, where their marginal productivity is very low (if not zero or negative). Consequently, a shift to alternative occupations will improve their marginal productivity and add to the national income of the country.

The Solution. The basic solution to the problem

of this sort is the faster rate of capital formation so as to enlarge employment opportunities. For this purpose, every possible encouragement should be given to savings and their productive utilisation in increasing the rate of investment. In under-developed countries, investment incentives are very low and the State can assist in the process of capital formation directly as well as indirectly. Through a fiscal policy, which encourages savings and investment, and through a sound monetary policy, the State can do much to encourage investors.

The State itself can participate in the process of capital formation by undertaking such development activities as the private entrepreneurs do not find it profitable to undertake. Under-developed countries suffer from a notorious shyness on the part of private investors; therefore, the State has got to assume a special role in speeding up the rate of economic development. The other line of attack has got to be on the rate of population growth. Malthusian theory may not be valid so far as advanced countries are concerned, but it is true of under-developed countries. If population grows at a rapid rate, then, to maintain the people even at their existing levels, large amounts of capital are needed. This capital could otherwise have been used to raise the amount of capital available per man and hence raise the living standards at a faster rate. Hence, it becomes absolutely necessary to check rapid population growth.

FULL EMPLOYMENT

Meaning of Full Employment

To attain and maintain the level of full employment is one of the chief objectives of the present-day economies. But what does full employment precisely mean?

The classical economists believed that there was always full employment and lapses, if any, were strictly temporary. According to them, full employment is a situation when there is no involuntary unemployment, though there may be voluntary, casual, seasonal, structural, technological and frictional unemployment. In their opinion, in a free competitive economy, serious unemployment was a passing phase. All job seekers are able to find jobs sooner or later at the prevailing wage rate. This view, however, is not accepted by economists these days. Actually, there is always some unemployment.

Employment would be full literally, when every able-bodied adult worked the number of hours considered normal for a fully employed person at the current wage level. This level of employment, however, normally appears to be unattainable in private enterprise economies. For, under such economies, quite a few have enough unearned incomes to be able to afford a life of well-paid idleness. Pigou, accordingly, defined full employment as one when "everybody who at the ruling rate of wages wishes to be employed is in fact employed."

But even Pigovian full employment appears to be unattainable for, at any given time, there is bound to be some seasonal and frictional unemployment. This led Keynes[1] and many after him to define full employment as the level of employment which falls short of Pigovian full employment. The Economic and Social Council of the U.N. has accepted the same definition, for it required countries to fix the full employment standard in this sense. The purpose of such a standard is to provide **full employment which is consistent with the smallest amount of unemployment that a country can resonably be expected to have, after a minimum allowance is made for seasonal and frictional unemployment.**[2]

Full employment refers to such a state of economy that all productive resources of a community —land, labour, capital and enterprise—are fully employed. In other words, when none of the productive resources are lying idle or are under-employed. Full employment may also be defined as an amount of employment beyond which further increase in effective demand does not increase output and employment but results in inflation. In this sense, even the under-employed countries may be supposed to be in a state of full employment because increase in demand creates an inflationary pressure owing to the fact that, on account of deficiency of capital equipment, the supply of output is inelastic.

Keynesian full employment is, by definition, the maximum level of employment that private enterprise countries can attain without experiencing strong inflationary pressures. According to Keynes, full employment is a situation in which aggregate employment is inelastic in response to an increase in effective demand for its output." But, for purposes of practical policy, it is necessary to reduce the concept to quantitative terms. It should be possible to say precisely when employment is less than full so that remedial measures can be adopted to achieve the full employment level.

Measurement of Full Employment Level

The concept, as defined above, raises two quantitative problems, namely, how to determine (1) the amount of employment sought by those who at the ruling wage-rates wish to be employed, and (2) the inevitable minimum of frictional and seasonal unemployment. The first, in turn, depends upon (a) the number of people able and willing to work for wages, and (b) the average number of hours of work which each of them wants to be employed. The

1. *The General Theory*, pp. 15–16.
2. U.N., *Problems of Unemployment and Inflation*, 1950 and 1951, p. 5.

number of wage-employment seekers depends upon the size of the population of working age, the number who, having sufficient unearned incomes, choose to remain idle, the number who, being in command of the requisite means of production, are self-employed; and the prevailing wage-rates and other incentives provided.

Normally, apart from the size of the population of working age, these factors are likely to be more or less stable over short periods. For instance, the span of life regarded as falling within the working age, while subject to variation as a result of changes in the period of schooling or in the normal age for retirement consequent on changes in health standards and longevity, is likely to remain unchanged in the short period. Again, since most workers have no large unearned income or accumulated savings, they are obliged to remain continuously in employment. They cannot, therefore, throw their labour-power on the market or withhold it therefrom in some unpredictable manner. Accordingly, the number who choose to remain idle is unlikely to vary much in any short period.

Moreover, even when some of these factors change somewhat, the net quantitative effect may not be important. **Higher wages, for instance, may induce some of the older workers to postpone their retirement, while these may impel some of the married women workers, now that their husbands are better off, to relinquish their jobs. The net effect of a rise in wages will not, therefore, be quantitatively important.**[3] **The same applies to other of these factors.** The size of the population of working age, too, though not invariant is measureable as changes according to definite trends. It follows that the number of wage-seeking population can be determined with a great measure of accuracy. And since the average number of hours of work which each wage-employment seeker wants to put in is likely to be more or less stable, in any short period, the total amount of wage-employment sought is quite precisely measureable.

Similar observations may be made regarding the permissible allowance for seasonal and frictional unemployment. It will have to vary from season to season, and from year to year, in accordance with the inevitable seasonal variations in employment and in the magnitude of the structural shifts in demand and production that together with immobility of labour cause frictional unemployment. It may, therefore, be better defined as a range rather than as a precise figure. Since normally **structural** shifts in demand and production are unlikely to be violent or spasmodic and since in industrialized countries the incidence of seasonal unemployment is bound to be quite low, the allowance for frictional and seasonal unemployment needs to be very small. A U.N. study has suggested that this allowance need not be beyond a range of 2.4 or 3.5 per cent of the available labour force.

Thus, the possibility of measuring the size of the available labour force and the inevitable minimum of frictional and seasonal unemployment makes full employment a determinate quantity. As suggested by a U.N. study,[4] as a necessary step in the effective implementation of full employment policies, each country should fix a full employment target expressed in terms of the permissible range of frictional and seasonal unemployment. Unemployment in excess of the fixed target would indicate a lapse from full employment calling for remedial action. The fixation of such a target would help to reduce the chances of government inaction or vacillation in the face of growing unemployment. It may also help to maintain confidence among businessmen, whose pessimism ordinarily plays a notable part in magnifying the downswing. There is, of course, the danger of the government acting on a false scent. For at times, unemployment may exceed the target due to causes other than insufficient demand. This danger may be minimized by allowing the government the discretion to disregard the signal if it has clear evidence that rise in unemployment is not due demand deficiency.

POLICY FOR FULL EMPLOYMENT

To create a state of full employment is not an easy job. No simple and straight remedy can be prescribed for the purpose. There is no panacea which can cure a country of unemployment and create conditions of full employment. The problem has to be fought on all fronts and a comprehensive policy covering the various aspects of the economy has to be formulated. It will cover:—

(1) Fiscal Policy
(2) Monetary Policy
(3) Income Policy
(4) Price Policy
(5) International Measures.

Now a word about each of the above policies

Fiscal Policy for Full Employment

The principal instrument of fiscal policy is the public finance or the budget. It involves purposeful manipulation of public expenditure, taxation and public debt. This is known as functional finance. Public expenditure, taxation and public borrowing have to be geared to fight inflationary and deflationary tendencies so that the national economy moves on an even keel.

Among the broad aims of fiscal policy are: (a) to

3. *Pigou, Lapses from Full Employment*, 1945, p. 5.

4. U.N., *Measures for Full Employment*, 1949, p. 14.

improve the efficiency of productive capacity of the economic system by an optimum allocation of the productive resources in men, money and materials. These productive resources are so allocated and utilised that they make a maximum contribution to national output, income and employment.

(b) The fiscal policy aims not only at maximising national income and output but to bring about an equitable distribution thereof. It seeks to reduce inequalities of income and welath in order to promote general welfare of the community.

(c) The overriding objective of fiscal policy is to increase employment opportunities in the country and to make the economy march towards full employment. Public expenditure, taxation and borrowing policies are aimed at increasing consumption, saving and investment. Unnecessary or conspicuous consumption is to be ruthlessly curtailed and mass consumption which creates employment should be stimulated by means of suitable taxation and by giving suitable direction to public expenditure. But side by side, all possible incentives should be provided for saving and even compulsion may be resorted to so that the incomes are not recklessly squandered. On the other hand, sizable proportion of incomes should be saved towards capital formation. The savings must be channelised into productive investments. For this purpose, necessary mechanism must be provided like a sound capital market and healthy stock exchanges. Thus both taxation and public expenditure should be geared to economic growth and development.

(d) To maintain economic stability and price stability is another important objective of fiscal policy. It must be so designed as to maintain a reasonably stable price level and to eliminate cyclical fluctuations. A suitable fiscal policy has to be formulated for an inflationary situation and for depression.

During depression there is wide-spread unemployment and fiscal policy must not only remove this unemployment but generate additional employment. The government should adopt a taxation policy which encourages private consumption and investment. Taxes are reduced to provide incentives for investment; public expenditure is increased through budget deficits which are financed by borrowing from the public, commercial banks and the central bank of the country. During depression government spending assumes a great importance. It seeks to lift the economy out of the morass of stagnation. Public expenditure (pump priming) revives economic activity and compensatory spending by government is intended to make up the deficiency of private investment. Government increases its expenditure on public works and there are transfer payments like subsidies and relief payments. "Massive deficit-financed spending can almost surely put millions back to work and push the economy back to reasonably high level of employment."[5]

During inflation, however, the fiscal policy has to be different. Through taxation and borrowing, the government must withdraw money from the income stream so that the purchasing power is taken away from the public. This will exercise deflationary pressure and tend to bring down prices. But the crucial thing is that the withdrawal of money from the income-stream should not be replaced by Government spending.

Thus, fiscal policy should remove both inflationary and deflationary pressures and make the working of the economy smooth and steady.

To sum up, fiscal policy can serve as a powerful instrument in taking the economy to the goal of full employment, by mobilising productive resources and their optimum utilisation, increasing government expenditure and investment to cover the gap between income and consumption by raising consumption function, by encouraging private investment, by maintaining economic stability, by promoting capital formation and by suitably altering distribution of income.

Monetary Policy for Full Employment

Monetary policy refers to the measures which the central bank of a country adopts to expand and contract credit as the economic situation may demand. It is aimed at influencing the availability and cost of funds with which the community may have to finance economic activity.

For this purpose, the central bank uses the well-known instruments of credit control, *viz.*, manipulation of the bank rate, open market operations and other measures of general and selective credit controls. The central bank regulates the rates of interest and other terms of lending in the money market and it also regulates the money supply with the public.

Among the objectives of monetary policy we may mention maintaining neutrality of money, exchange stability, price stability, steady economic growth and above all full employment. The attainment and maintenance of full employment is now regarded as the most important aim of monetary policy. According to Crowther, the main object of monetary policy is to bring about equilibrium between saving and investment in the country and to create conditions for full employment. Keynes strongly favoured the use of monetary policy for maintaining economic activity at the highest possible level.

Monetary policy can generate employment through increased investment. Through cheap money policy (*i.e.*, low rates of interest) it can induce the entrepreneurs to borrow and invest. Judicious investment encouraged by a suitable monetary policy

5. Bach, G.L.—*Economics*, p. 280.

can, through multiplier and acceleration effects, raise the level of employment in the country. It can not only take the country to the goal of full employment but also maintain the level of full employment by maintaining in the economy stable cost-price structure.

In order to ensure economic growth (which means more employment) with stability the monetary policy must protect the economy from the baneful influences of both depression and inflation.

During depression, a suitable monetary policy should be pursued to offset the decline in the velocity of money, to stimulate lending for investment by bringing down interest rates and try to inject cash into the economy and raise prospects of profit. On the other hand, when there exists an inflationary situation, the monetary policy can slow down the rate of expansion of money supply, to offset the increase in its velocity, to reduce liquid assets with the people, to reduce consumption spending and investment by raising the interest rates. In this way, it can restore health and stability to the economy and create conditions for the growth of income and employment.

But monetary policy alone cannot play the trick. A suitable combination of monetary policy and fiscal policy including prudent management of public debt is required to increase the level of employment in a country.

It may, however, be emphasised that in the under-developed economies, the role of monetary policy is extremely limited, since the central bank control does not extend to the entire money market. A major portion of the money market is unorganised over which the writ of the central bank does not run. Stock exchanges are also not properly developed. The nature of unemployment in under-developed economies is not cyclical; hence it cannot be set right by the manipulation of credit policy. But even here, the monetary policy can be used to influence the pattern of investment and output through control of bank credit. It can be made effective through selective credit control. In various ways, monetary policy can influence economic growth and the growth of employment. It can help in the solution of balance of payments problems. In all these ways, the weapons of monetary policy can be used to raise the level of employment.

Incomes Policy for Full Employment

There is no doubt that income policy can have a far-reaching effect on the level of economic activity, and hence the level of employment in a country. For instance, if the government does not properly control incomes, *i.e.*, salaries, wages, dividend incomes, *etc.*, it may end in inflation or damage the industrial structure. A suitable income policy is essential to achieve and maintain a high level of employment. Instrument of income policy can be used to reconcile economic growth and price stability. Increase in wages and other incomes must be in tune with the rate of growth in the national output. It can curb private consumption expenditure and thus create savings which can be invested to increase employment.

It is essential that wage and non-wage incomes should be properly regulated in the interest of economic growth and economic stability and full employment.

Price Policy for Full Employment

We have already seen that in the interest of a high level of employment, a suitable price policy is essential. Price fluctuations are inimical to steady economic growth. Both inflation and deflation are detrimental to economic activity. Booms and slumps have a disturbing effect on the volume of employment. Price policy must seek to protect the economy from these business fluctuations. Lowering prices of goods and services may result in expansion of their markets and the resultant increase in supply will increase employment. A fall in factor prices will raise marginal efficiency of capital and hence promote investment and create employment. Price control and price support policy can be used to maintain economic activity at a high level, which means increased employment.

International Measures for Full Employment

Co-operation and contacts with the other nations and international political and economic organisations can go a long way to increase economic activity and level of employment. Obviously, loans from the I.M.F., the World Bank, and other international bodies have helped in maintaining economic stability of economically advanced nations and promoted economic development of under-developed economies. This has no doubt resulted in increasing the volume of employment. Domestic fiscal, trade and monetary policies must be properly co-ordinated with international measures.

Conclusions

Thus, policy for full employment must embrace suitable fiscal policy, monetary policy, income policy, price policy and international measures to achieve and maintain a high level of income and employment. A sound policy for full employment must control economic fluctuations and for this tax rates should be properly adjusted and public expenditure properly channelised. Interest rates should be suitably adjusted by a wise monetary policy. In the matter of income policy, wage rates should be so controlled as to promote an equilibrium ratio of wages to profits; there should be a balanced wage structure. Consumption should be controlled, propensity to consume raised and private investment stimulated and public investment increased.

Part III
Economic Fluctuations

47 TRADE CYCLES

Meaning of a Trade Cycle

The world has registered remarkable economic progress especially during the last 150 years. But it would be wrong to think that this economic progress has been a steady upward swing and a continuous movement forward. On the other hand, every businessman knows that, after ten or twelve years, the production machinery receives a rude shock, which throws it out of gear for a number of years. There are upward swings and then downward swings in business. The periods of business prosperity alternate with periods of adversity. Every boom is followed by a slump, and vice versa. This is a trade cycle. The trade cycle simply means the whole course of trade or business activity which passes through all phases of prosperity and adversity.

Economic Crisis

An economic crisis, on the other hand, means a period of stress and strain when businessmen find it difficult to meet their commitments. In the words of Adolph Wagner, "Crises imply the overwhelming and simultaneous occurrence of inability on the part of independent entrepreneurs to pay their debts." Or in J. S. Mill's words, "There is said to be a commercial crisis when a great number of merchants have or apprehend they have a difficulty in meeting their engagement. It is a commercial crisis when only merchants are involved in a difficulty. But when it is accentuated and leads to bank failures it is called financial crisis."

Phases of a Trade Cycle

Depression. Let us briefly trace the course of a trade cycle. We might start at a point when business is at the lowest ebb and the economy is engulfed in depression. The lucky ones, who are employed, get distressingly low wages. The purchasing power of money is high but that of man low. The general purchasing power of the community being very low, the productive activity, both in the production of consumers' goods and producers' goods, especially the latter, is at a very low level. Business settles down at a new equilibrium at a low level of prices, costs and profits. This new adjustment or equilibrium may last for a number of years.

Recovery. But the things are not going to continue to be in a depressed state for ever. After the depression has lasted for some time, rays of hope appear on the business horizon. Pessimism gives place to optimism. The depression contains within itself the germs of recovery. After the depression has lasted for some time, the situation is found favourable for a business venture. Wages are low even for efficient workers, sufficient number of whom is now available. Money is cheap and so are the other materials and the factors of production. Prices may be low but the costs too are low. This induces an entrepreneur, who may have sufficient financial backing, to take the risk. He orders repairs, renewals and replacements and, perhaps, a new plant. Constructional and allied industries receive orders and re-employ workers who spend their newly-acquired purchasing power on consumers' goods. This stimulates further investment and production in several other industries. Lo! the business has turned the corner.

Boom. Recovery once started gathers momentum. The slender stream of recovery, when it has started flowing, is strengthened by numerous tributaries on its way. The revival of investment in one industry leads to a revival in another. With the general revival of demand, prices show an upward trend. The businessman's income takes a forward jump while wages, interest, and other costs lag behind. Profit margins are thus widened. Optimism grows and spreads far and wide. Exceptional business prosperity turns businessman's head, and they indulge in over-trading. This phase of the trade cycle is known as boom

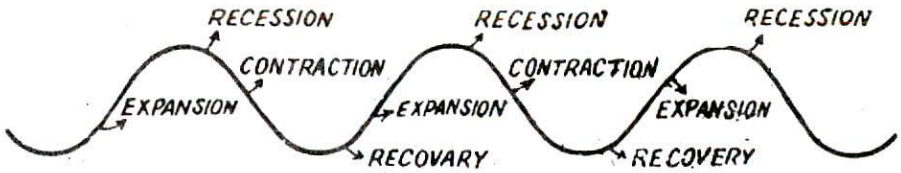


Fig. 47.1

End of the Boom. But just as depression created the conditions for recovery, similarly the boom conditions generate their own checks. All idle factors have been employed and further demand for them must raise their prices, but the quality available now is inferior. Less efficient workers have to be taken on higher wages. Rate of interest rises and so also the prices of the essential materials. As a consequence, costs take an upward swing. They overtake prices and the profit margins are first narrowed and then begin to disappear. The boom conditions are thus almost at an end.

Crisis. Then starts the downward course. Fearing that the era of profits has come to a close, businessmen stop ordering further equipment and materials. The Government applies the axe mercilessly. The bankers insist on repayment. The bottlenecks appear and stocks accumulate. Desire for liquidity increases all round. This accentuates the depression. Just as the recovery is self-reinforcing, the forces of depression are also self-accumulating. There is general distress. This phase of the trade cycle is known as the crisis—a point of critical convulsions.

Slump. The crisis is the period of utmost suffering for businessmen. But they recover in course of time from the stunning blow. Their commitments are liquidated somehow and business enters into the stage of what has already been described as depression or slump or a state of stagnation.

Lord Overstone describes the course of a trade cycle thus: "state of quiescence — next improvement — growing — confidence — prosperity — excitement--over-trading — convulsion — pressure — distress — ending again in quiescence." [1] To use Mitchell's terminology, we can mark four distinct phases of a business cycle, *viz.*, Expansion (upward movement). Recession. Contraction (downward course) and Recovery. The above figure 47.1 represents these four phases.

Characteristics of a Trade Cycle

A study of trade cycles has revealed two important characteristics: (1) Its cyclical nature, *i.e.*, **periodicity,** (2) its general nature or **synchronism.**

In the first place, it has been found that trade cycles occur periodically at fairly regular intervals. The interval is not a precise one but the degree of regularity is sufficient to demonstrate the periodicity of a trade cycle. There is a general consensus of opinion that the cycle takes seven to ten years nearly to complete itself.

The second characteristic is synchronism or its all-embracing character. The business world is one economic unit, like a living organism. An attack on one part of the business organism is bound to send a shock to the other parts. If one firm is in grief, those who deal with it cannot remain unaffected, and they, in turn, will affect others with whom they may be in commercial intercourse. Thus, depression passes from one industry to another. A time comes when all industries in all districts and all firms in the country are engulfed. Few can escape the deluge.

THEORIES OF TRADE CYCLE

Several theories of trade cycles have been put forward from time to time. We shall say here a word about some well-known theories.

Climatic Theory

It is said that there are cycles of climate. For some years the climate is favourable and then comes an unfavourable turn. Changes in climate bring about changes in agricultural production. Thus, there are bumper crops for some years followed by failure of crops. The cycle of agricultural production results in a cycle of industrial activity, for industry is deeply affected by the state of agricultural production.

One of the climatic theories is known as **Jevons' Sunspot Theory.** According to Stanley Jevons, spots appear on the face of the sun at regular intervals. These spots affect the emission of heat from the sun, which, in turn, conditions the degree of rainfall. The rain affects agriculture, which, in turn, affects trade and industry. That is how trade cycles are caused.

Comments. Modern economists do not place much reliance on climatic theories. Nobody can say with certainty about the nature of the sun-spots and the degree to which they affect rain. There is no doubt that climate affects agricultural production. But the climatic theory does not adequately explain periodicity of the trade cycle.

Psychological Theory

Attempts are made by some economists to explain trade cycles in terms of psychology. There are

1. Quoted by Marshall in *Money, Credit and Commerce*, p. 246.

moods of optimism alternating with moods of pessimism without there being any tangible basis for the same. At some stage, people just think that trade is good and that it is going to remain good. Business activity is intensified and becomes feverish. Then, all of a sudden, people start thinking that the period of prosperity has lasted long enough and adversity is round the corner. Thus, although there was no valid reason for depression to come about, but it is brought about by the people themselves. It is all psychological.

Comments. The psychological theory lacks any sound basis. There is conjectural element in it. There is no doubt that industrial fluctuations are affected by the waves of optimism and pessimism and are intensified by them. But they do not explain the course of the trade cycles or their periodicity aspect.

Under-consumption Theory

According to under-consumption theory, there is too much of saving during a boom and further additions to saving reduce the level of consumption. A reduction in the level of consumption, in the face of increasing productive capacity, must sooner or later lead to the collapse of the boom. This theory is associated with the names of J. A. Hobson and Major Douglas.

But why does over-saving or under-consumption take place? This is because during the boom, though prices rise wages lag behind, so that profit margins are progressively increased. There takes place a shift in the distribution of incomes in favour of profits and against the wage-earners. The saving propensity of the rich is greater than that of the poor, so that a shift in income distribution in favour of the rich leads to an increase in the volume of saving. This process goes on till prices keep on rising and wages lag behind. However, one result of such a state of affairs is that the demand for consumption goods gets steadily reduced. This leads to contraction in their output which precipitates the crisis.

Comments. The under-consumption or over-saving theory contains an element of truth. But it cannot be the sole or adequate explanation. For example, if the under-consumption theory were to be exclusively relied on, we should expect the consumption goods industries to fluctuate more than investment goods industries. But exactly reverse is the case in real life during a trade cycle

Monetary Theory

R. G. Hawtrey was a firm believer in the monetary theory. According to him, variations in flows of money are the sole and sufficient determinants of business activity and account for alternating phases of prosperity and depression. Non-monetary causes like drought, floods, earthquakes, wars, strikes, unbalanced development of certain industries, *etc.*, can at best cause a **partial** as distinguished from **general depression.**

The argument is something like this: Most of the business is done with borrowed money. When business prospects are good, the banks freely extend credit facilities. Assured of cheap and easy credit facilities, the businessmen go on expanding their business, entering into further and further commitments. A huge superstructure of credit is built up. This superstructure can be maintained by the continuance of cheap money conditions, if not their further extension. But a point is reached, when banks think that they have gone a bit too far in the matter of advances. Probably their reserve ratio has fallen dangerously low. In self-defence, they apply the brake, curb further expansion of credit, and begin to recall advances. This sudden suspension of credit facilities proves a bomb-shell to the business community.

Businessmen have been counting on the renewal of overdrafts and cash credit facilities. But contrary to their expectation, moneys are being called in. They have to sell off their stocks in order to repay. This general desire for liquidity depresses the market, for the stocks are being unloaded all round. Some firms, weaker links of the chain, fail to meet their obligations and bring to grief those whom they could not pay. Very solvent firms may fail, simply because they do not receive timely financial assistance from the banks.

Thus, the monetary phenomena of hoarding and dishoarding, credit expansion and credit contraction have a lot to do with business cycles, since they represent a succession of inflationary and deflationary processes.

Comments. No doubt banking institutions play an important part in building up trade activity. But it is a bit unkind to say that they cause a crisis. The most that we can say is that they aggravate matters. They prop up a boom by an over-issue of credit and they accentuate a depression by its suspension. But neither the boom nor the depression originates with them. Secondly, a world phenomenon like a modern slump cannot be attributed to the isolated action of banks in one country. A trade cycle cannot, therefore, be exclusively attributed to the misbehaviour of money.

Over-investment Theory

Some writers attribute the boom to excessive investment and regard the slump as the necessary corrective for the imbalances created during the boom. That investment becomes excessive during the boom is borne out by the fact that investment goods industries expand faster than consumption goods industries during the upward phase of the cycle. During the depression, investment goods industries suffer more than consumption goods industries.

why do investment goods industries expand than consumption goods industries in the n phase of the cycle? On this point, there is a ifference of opinion among the various theorists, who believe in the over-investment theory. Some economists like Hayek, Machlup, Ropke and Robbins trace this to the banking system. Though they do not regard the trade cycle to be a purely monetary phenomenon, yet they believe that the disparity in the growth rates of consumption goods industries and investment goods industries could not occur, if the banking system were not elastic. According to this version, an increase in investment opportunities is fed by a low rate of interest. In this way, there is encouragement to adopt more and more roundabout methods of production. Resources are increasingly withdrawn from consumption goods industries through a process of "forced saving".

Comments. The over-investment theory correctly states that fluctuations in the rate of investment are the main cause of trade cycles. However, the theory fails to offer a convincing explanation as to why investment fluctuates in so regular a manner. Many authors trace back fluctuations in investment to the behaviour of the banking system and that we have seen already is not a very satisfactory answer.

Keynes' Theory

In explaining what determines at any time the prevailing level of income, output and employment, Keynes' 'General Theory' also provides an explanation of business cycle, because the business cycle is nothing more than a rhythmic fluctuation in the overall level of income, output and employment.

However, Keynes' 'General Theory' "is not a theory of business cycle as such. It is much more and also much less than that. It is more than a theory of the business cycle in the sense that it offers a general explanation for the level of employment quite independently of the cyclical nature of changes in employment. It is less than a complete theory of the business cycle because it makes no attempt to give a detailed account of the various phases of the cycle, and does not examine closely the empirical data of cyclical fluctuations, something which any complete study of the business cycle would presumably do."[2]

According to Keynes, fluctuations in economic activity are caused by fluctuations in the rate of investment. And fluctuations in the rate of investment are caused mainly by fluctuations in the marginal efficiency of capital. The rate of interest, which is the other determinant of investment, is more or less stable and does not play a significant role in cyclical fluctuations in investment, but at times it reinforces and supplements the primary motivating factor (*i.e.*, changes in marginal efficiency of capital). Now, the marginal efficiency of capital is a new Keynesian name for the **expected rate of profit** on new investment. Therefore, the economic fluctuations result from the changes in expectations about the rate of profit on new investment.

Fluctuations in the marginal efficiency of capital or the expected rate of profit on new investment are due to (a) changes in the prospective yields and (b) changes in the cost or supply price of the capital goods. Fluctuations in costs are secondary and supplementary to the primary initiating factor, which is the fluctuations in the prospective yields of new capital goods. It is the prospective yield which makes the marginal efficiency of capital very unstable and subject to violent fluctuations.

Towards the end of a boom, the decline in prospective yields on capital is due, in the first instance, to the growing abundance of capital goods which lowers the marginal efficiency of capital. This is an **objective** fact which may induce a wave of **pessimistic expectations** (a psychological fact) and thus cause a further fall in the marginal efficiency of capital. The turning point from expansion to contraction is, thus, explained by a collapse in the marginal efficiency of capital. As investment falls, because of the decline in marginal efficiency of capital, the income also falls. The multiplier works in the reverse direction. A given fall in investment leads to a multiple fall in income. As income is falling rapidly, under the multiplier effect, the employment also goes tumbling down.

Just as the collapse of marginal efficiency of capital is the main cause of the upper turning point in the trade cycle, similarly the lower turning point, *i.e.*, change from recession to recovery, is due to the **revival** of the marginal efficiency of capital. The interval, between the upper turning point and the start of recovery, is conditioned by two factors: (i) the time necessary for wearing out of durable capital assets, and (ii) the time required to absorb the excess stocks of goods left over from the boom. Just as the marginal efficiency of capital was pushed down by the growing abundance of capital goods during the period of boom, similarly as the stocks of capital goods are depleted and there grows a scarcity of capital goods, the marginal efficiency of capital rises, thereby inducing the businessmen to invest more. Income increases due to the multiplier effect. So the cumulative process starts upward.

Comments. Since Keynes's 'General Theory', the theories of trade cycle have shown a great degree of convergence. Of course, even before Keynes, it was agreed that fluctuations in the rate of investment have something to do with the fluctuations in the level of activity, yet a systematic exposition was lacking. In a previous chapter (46), we investigated the relation between a change in investment and the resulting change in the level of national income.

2. Dillard—*Economics of J. M. Keynes*, p. 276.

This is the familiar theory of multiplier. The theory of multiplier tells us that changes in investment will bring about magnified changes in the level of income and employment. This theory helps us in understanding the relation between investment and income.

But the theory of multiplier alone does not offer a full and satisfactory explanation of the trade cycle. As has been observed above, a basic feature of the trade cycle is its cumulative character both on the upswing as well as the downswing, *i.e.*, once economic activity starts rising or falling, it gathers momentum and for a time feeds on itself. Thus, what we have to explain is the cumulative character of economic fluctuations. The theory of multiplier alone does not prove adequate for this task.

Suppose that investment rises by 100 rupees and that the magnitude of multiplier is 4. Then, from the theory of multiplier, we know that national income will rise by 400 and, if multiplier is the only force at work, that will be the end of the matter, with the economy reaching a new stable equilibrium at a higher level of national income. But, in real life, this is not likely to be so, for a rise in income, produced by a given rise in investment, will have further repercussions on the economy. We have already studied this reaction in the theory of the accelerator.

Modern Theory: Interaction of Multiplier and Accelerator

Having studied the various theories of trade cycle, we turn to the modern theory. None of the theories explained above is fully satisfactory. The chief drawback of Keynes' theory of trade cycle is that he ignored the acceleration effect in his explanation of the trade cycle. As pointed out above, the multiplier alone cannot provide an explanation of the cyclical fluctuations. It is the interaction between multiplier and accelerator that gives rise to cyclical fluctuations in economic activity. An autonomous increase in the level of fixed investment raises income by a marginal amount according to the value of the multiplier. This increase in total income will induce further increase in investment through acceleration effect. When this happens, the chain of causation is linked round in a 'loop': investment affects income, which in turn affects investment plans.

How interaction between the multiplier and accelerator causes fluctuations in income can be easily understood from the following table:—

In the table, we have assumed that the marginal propensity to consume is 2/3, the accelerator is 2, and that there is one-period lag. One-period lag means that an increase in income in one period induces an increase in consumption in the succeeding period. We have further assumed that an autonomous investment of Rs. 10 crores is added in each period which is continuously maintained in the succeeding periods. It will be noticed from the table that, when autonomous increase in investment of Rs. 10 crores is added in period 1, it gives rise to an increase in income of only Rs. 10 crores. It does not induce increase in consumption in period 1, as we have assumed a lag of one period.

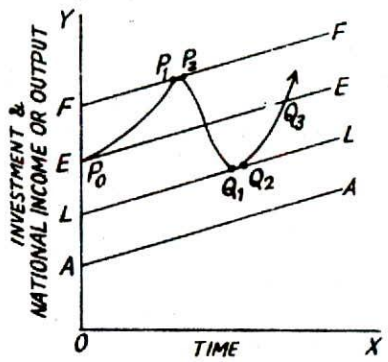
(1)	*Autonomous Investment (deviation from base period* (2)	*Induced Consumption* (3)	*Induced Investment* (4)	*Total Deviation of Income from base period* (5)
	Rs.	Rs.	Rs.	Rs.
Base Period	0	0	0	0
Period 1	10	0	0	10
" 2	10	6.7	13.4	30.1
" 3	10	20.0	26.6	56.6
" 4	10	37.8	35.6	83.4
" 5	10	55.6	35.6	101.2
" 6	10	67.5	23.8	101.3
" 7	10	67.6	0.2	77.8
" 8	10	51.8	− 10.0	51.8
" 9	10	34.6	− 10.0	34.6
" 10	10	23.0	− 10.0	23.0
" 11	10	15.4	− 10.0	15.4
" 12	10	10.2	− 10.0	10.2
" 13	10	6.8	− 6.8	10.0
" 14	10	6.6	+ 0.2	16.8

Now with marginal propensity to consume of 2/3, the increase in income of Rs. 10 crores in period 1 induces an increase in consumption of Rs. 6.7 crores in period 2. With the value of accelerator as 2, there will be induced investment of Rs. 13.4 crores in period 2. Now the total increase in income in period 2 over the base period will be equal to the autonomous investment of Rs. 10 crores which is maintained in the second period plus the induced consumption of Rs. 6.7 crores plus the induced investment of Rs. 13.4 crores (total increase in income in period 2 = 30.1). Now, in the third period, the consumption would be equal to $30.1 \times 2/3 =$ Rs. 20 crores.

The increase in consumption in period 3 over period 2 is Rs. 13.3 crores (*i.e.*, Rs. 20 crores—Rs. 6.7 crores). This increase in consumption of Rs. 13.3 crores will induce investment of the value of Rs. 26.6 crores in period 3. Thus, the total increase in the income in period 3 over the base period is equal to Rs. 56.6 crores. In the same manner, the changes in income for the succeeding periods will be determined. A glance at column 5 will show that there are great fluctuations in total income. Under the combined effect of the multiplier and accelerator, the income increases up to the 6th period, but, beyond the 6th period, it begins to decrease. 1st to 6th is the stage of expansion or upswing. The 6th one is a turning point and from 6th onward is the phase of contraction or down-swing.

In the above table, it has been assumed that there is no limitation of productive resources. In other words, there is no full employment ceiling. In the table, we have only tried to convey the idea that interaction between the multiplier and accelerator gives rise to fluctuations in total national income. We have taken certain values of the marginal propensity to consume (and hence of the multiplier) and the accelerator. The different value of the marginal propensity to consume and the accelerator will produce fluctuations of different magnitudes.

Now introducing the fact that there is a limit to the increase in national income set by the full employment ceilings, we may explain the different phases of the trade cycle with the aid of diagram used by Prof. Hicks. In Fig. 47.2, AA is the line representing autonomous investment. Prof. Hicks assumes that autonomous investment grows annually at a rate given by the slope of AA. Given the marginal propensity to consume, the simple multiplier is determind. Then, the multiplier and autonomous investment together determine the equilibrium level of income shown by the line LL. Hicks calls this the floor line. But induced investment has not yet been taken into account. If national income grows from one year to the next, as it would along the line LL, there is some amount of induced investment via accelerator. The line EE shows the equilibrium time path of national income determined by autonomous investment and the combined effect of multiplier and accelerator. FF is the full



Phases of Trade Cycle
Fig. 47.2

employment ceiling. It is a line that shows the maximum national output at any period of time.

Starting from point E, the economy will be in equilibrium moving along the path EE determined by the combined effect of multiplier and accelerator and the growing level of autonomous investment. When the economy reaches point P_0 along the path EE, suppose there is an external shock, say an outburst of investment due to certain innovations or jump in government investment. When the economy experiences such an outburst of autonomous investment, it pushes the economy above the equilibrium path EE after point P_0. The rise in autonomous investment due to external shock causes national income to increase at a greater rate than shown by the slope of EE. This increase in national income will cause further increase in **induced investment** through acceleration effect. The increase in induced investment causes national income to increase by a magnified amount through multiplier.

Thus, under the combined effect of multiplier and accelerator, national income or output will rapidly expand along the path from P_0 to P_1. But this expansion must stop at P_1 because this is the full employment ceiling. The limited human and material resources of the economy do not permit a greater expansion of national income. Therefore, when point P_1 is reached, the rapid growth of national income must come to an end. Prof. Hicks assumes that the full employment ceiling grows at the same rate as autonomous investment. Therefore, FF slopes gently unlike the greater slope of the line from P_0 to P_1. When point P_1 is reached, the economy must grow at the same rate as the usual growth in the autonomous investment.

For a short time, the economy may crawl along the full employment ceiling FF. But because national income has ceased to increase at the rapid rate, the induced investment via accelerator falls off to the level consistent with the modest rate of growth. But the economy cannot crawl along its full

employment ceiling for a long time. The sharp decline in induced investment, when national income, and hence consumption, ceases to increase rapidly, initiates a contraction in the level of income and business activity. Thus, there is a slackening off at P_2 and the level of national income moves towards EE. Investment falls off rapidly and multiplier works in the reverse direction.

The fall in national income and output resulting from the sharp fall in induced investment will not stop on touching the level EE but will go further down. The economy must consequently move all the way down from point P_2 to point Q_1. But at point Q_1, the floor has been reached. National income will not fall further, because this is the equilibrium level given by the working of ordinary multiplier and autonomous investment free from the simultaneous operation of the accelerator. The economy may crawl along the floor through the path Q_1 to Q_2. In doing so, there is a growth in the level of national income. This rate of growth as before induces investment and both the multiplier and accelerator come into operation, and the economy will move towards Q_3 and the full employment ceiling FF. This is how the interaction between multiplier and accelerator causes economic fluctuations.

Kaldor's Contribution to Modern Trade Cycle Theory

We have explained above how Hicks explains the occurrence of trade cycles through the interaction of multiplier and accelerator. Kaldor also subscribes to the view that fluctuations in the level of economic activity (*i.e.*, trade cycles) take place due to the interaction of multiplier and accelerator but he uses a modified and more realistic form of accelerator and investment function. According to the conventional concept of accelerator, the investment or demand for capital depends upon the **rate of change** of the level of economic activity (*i.e.*, the level of income and employment). Kaldor has put forward the view, and most of the modern economists agree with him, that a more realistic concept of accelerator or investment function is that which considers that the demand for investment (or capital goods) depends upon the **level of activity** rather than the rate of change of that level. It should be remembered that in Kaldor's analysis the level of activity means the level of national output, income and employment. Further, the Hicksian analysis of accelerator and investment demand does not consider the effect of capital accumulation on the productive capacity and, therefore, on the new investment decisions by the entrepreneurs. In Kaldor's model of trade cycle, the capital accumulation by raising the productive capacity affects the investment decisions of the entrepreneurs. The effect of the capital accumulation on the investment decision of the entrepreneurs makes the investment function non-linear in the real world (that is, investment-incomes or investment-employment curve is not a straight line). Through this non-linear investment function Kaldor has been able to explain the conditions of stability and instability of the economic system.

Kaldor explains the occurrence of trade cycles through saving and investment which by their interaction determine the level of activity, that is, the levels of national output, employment and income. It is worth noting that Kaldor uses the ex-ante concepts of saving and investment, since it is the **ex-ante** saving and **ex-ante** investment that determine the level of economic activity and not the **ex-post** or realised saving and investment. **Ex-ante** investment means planned net addition to the stock of fixed capital and inventories of goods. This **ex-ante** investment differs from the realised, actual or **ex-post** investment by the amount of unintended accumulation or disaccumulations of inventories of goods which arise due to the difference between the planned and realised sales of goods. **Ex-ante** saving means the savings planned by the people for a period if they had accurately forecast their incomes. Therefore, unexpected changes in the level of income will make the realised or **ex-post** saving different from the planned or **ex-ante** saving.

As has been explained in an earlier chapter, when **ex-ante** investment exceeds **ex-ante** savings, the level of activity or income and employment will rise and, on the other hand, when **ex-ante** saving exceeds **ex-ante** investment, the level of activity or income and employment will fall. The equilibrium level of activity (income and employment) is determined at which **ex-ante** saving is equal to **ex-ante** investment.

Let us now see how Kaldor explains the stability or instability of the level of economic activity and the course of the trade cycle. Kaldor takes first the cases of linear (straight line) saving and investment functions. Consider Figure 47.3 where linear saving and investment functions (*i.e.*, curves) are shown and where the investment curve II is more steeply inclined than the saving curve SS. The two functions intersect at point C and seem to determine the level of income Y_0. But this equilibrium between **ex-ante** saving and **ex-ante** investment is quite unstable. This is because in Figure 47.3, if once the equilibrium between saving and investment is disturbed, the economy will move either towards hyper-inflation or towards collapse. Thus, if, as a result of some change, **ex-ante** investment exceeds **ex-ante** savings (Figure 47.3), then the level of activity (*i.e.*, income) will go on rising unchecked and will ultimately result in hyper-inflation. On the other hand, if some disturbance sends the system towards the right of the cross between saving and investment in Fig. 47.3 so that **ex-ante** saving exceeds **ex-ante** investment, then the level of in-

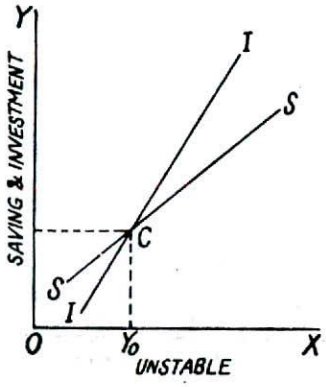


Fig. 47.3

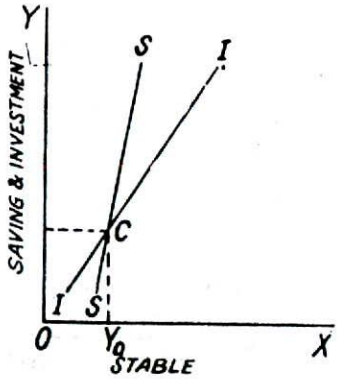


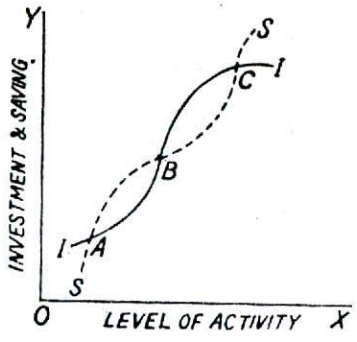
Fig. 47.4

come or activity will go on falling unchecked and will ultimately collapse. Thus the situation depicted in Figure 47.3 with linear investment curve more steeply inclined than the saving curve is quite unstable; any disturbance in the equilibrium situation either sends the system towards hyper-inflation or towards collapse. Since such an instability is not actually found in the real world, Kaldor rules out this case.

Now, take Figure 47.4 where also saving and investment curves are intersecting at point C and determine the level of income Y_0. But in Figure 47.4, investment curve II is less steeply inclined than the saving curve SS so that the equilibrium between them at point C or at the level of income Y_0 is quite stable. In this case any disturbance, which sends the system on either side of the equilibrium level, will not reinforce itself and the system will tend to come back to its equilibrium level Y_0. For example, if as a result of some disturbance, the level of income rises beyond equilibrium income Y_0, **ex-ante** saving exceeds **ex-ante** investment which will tend to reduce the income to the equilibrium level Y_0. On the other hand, if in Figure 47.4, the income falls below Y_0, **ex-ante**, investment will exceed **ex-ante** savings and as a result the level of income will rise to Y_0. Thus, the equilibrium is quite stable in Figure 47.4 where investment curve is less steeply inclined than the savings curve. But such a stability is also not realistic because economic system in the real world shows great instability. We thus see both the cases depicted in Figures 47.3 and 47.4 having linear **ex-ante saving and investment functions** are quite unrealistic and therefore Kaldor rules them out. Kaldor points out that in the real world both the saving and investment functions are **non-linear** (that is, they are not the straight lines) and explain trade cycles or fluctuations in the economic activity with non-linear saving and investment functions.

The interaction between the non-linear saving function SS and the non-linear investment function II is shown in Figure 47.5. Given the shapes of these two functions, they intersect at three points, A, B and C. Equilibrium at point B is quite unstable both upward and downward. Above point B, investment exceeds saving and, therefore, once as a result of some disturbance investment exceeds saving, the income (*i.e.*, the level of activity) will go on moving upward till point C is reached, and below point B saving exceeds investment and any disturbance which moves the system below point B, the level of activity will go on moving downward till point A is reached. Above point C, saving exceeds investment and, therefore, if the system goes above point C, it will come back to it. Therefore, the system is stable upward. On the other hand, below point C, investment exceeds saving and, therefore, any disturbance which sends the system below point C, it will be corrected by the return to the point C. Thus, the level of activity at point C is also stable downward. It, therefore, follows that the level of activity is in stable equilibrium at point C.

A glance at point A in Figure 47.5 will reveal that



it also represents a stable equilibrium; above point A saving exceeds investment and below point A investment exceeds saving which means that the

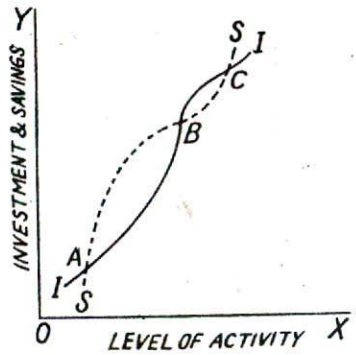


Fig. 47.6

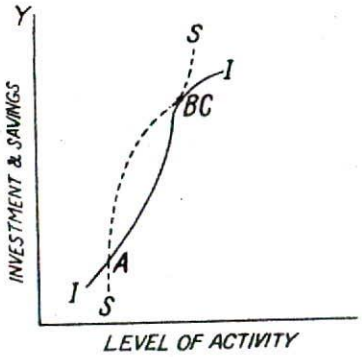


Fig. 47.7

level of activity will tend to return to point A if any disturbance, causing movement either upward or downward, occurs. It, therefore, follows that both the extreme points, C representing boom period and A representing depression, are stable equilibrium points. This means that economy should tend to be in **stable equilibrium** at either a very high or a very low level of activity. This is, however, a quite unlikely and improbable result since in the real world the economy is not found to be stable at these extreme levels of activity. In the capitalist system of the real world there occurs, if Government does not take any steps, self-generating trade cycles. That is, a good deal of instability is found in the capitalist system in the real world. But the stability at these two extreme levels of activity seems to be necessary if the saving and investment functions remain fixed and also if the non-linear saving and investment functions are actually of the shape as shown in Figure 47.5. Kaldor shows that these shapes of the two functions approximate to the real world situation.

It is through the **changes or shifts** in the investment function and saving function curve that Kaldor explains the self-generating trade cycles found in the free-market capitalist economies. According to Kaldor, when the level of investment is very high, production of consumer goods increases and as a result both consumption and saving increase. This means that saving function curve SS will shift upward when the high level of activity is reached. Besides, with a high level of investment the opportunities for further investment may become temporarily restricted and as a result of this investment function curve II tends to shift downward. Thus, when the economy is at a high level of activity, *i.e.*, at point C, the saving function curve SS tends to move upward and the investment function curve II tends to move downward and consequently the point C tends to move down and point B tends to move up as in Figure 47.6, until they meet each other at the combined point BC as in Figure 47.7. It will be seen from Figure 47.7, that saving exceeds investment on both sides of the combined point BC, which means that the level of activity at the combined point BC is unstable downward. Thus, because saving exceeds investment at the combined point BC, the contraction in the level of activity will not stop at point BC but will continue further until point A is reached.

The economy will not go below point A in Figure 47.7, because, as explained above, saving and investment are in stable equilibrium at point A. But, according to Kaldor, reversal movement of the cycle

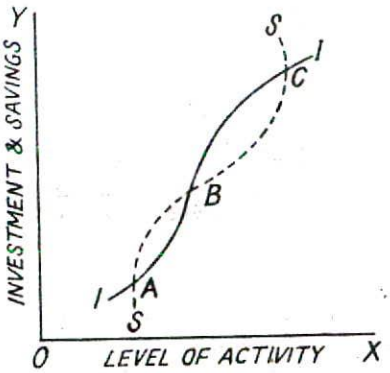


Fig. 47.8(a)

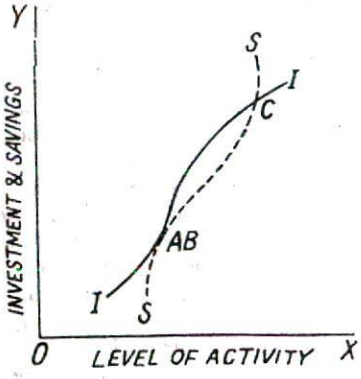


Fig. 47.8(b)

will start because the investment function curve will shift downward. Given the level of activity at A, investment in machines or equipment may not be sufficient to cover the depreciation. This creates opportunities for more investment, which causes the investment function curve to move upward With the level of activity at A, as the investment function curve II moves upward relative to the saving function curve SS, the point B will separate from point C and tend to move towards A as in Figure 47.8 (a). The investment function curve II will go on shifting upward till combined point AB is reached as in Figure 47.8 (b). But the combined point AB is unstable upward, for above combined point AB, investment exceeds saving. As a result, the expansion in the level of activity will not stop at point AB but will continue until once again point C is reached. Now, with the point C representing again the situation of boom having been reached, the investment opportunities once again will become restricted and as a result the movement of contraction in the level of activity will start once again and the whole process of contraction and then expansion will be repeated again, as brought out above. This is how Kaldor shows that the occurrence of trade cycles in a free market capitalist economy is self-generating.

POLICY FOR THE TRADE CYCLE

Remedial Measures

Lack of unanimity, as to the policy to be followed to eliminate trade cycle, is even more marked than the lack of unanimity about the causes thereof. For a complicated malady no simple remedy can be prescribed. Most of the economists are agreed that, under the existing economic order, crises are unavoidable; you can only delay them or mitigate their severity when they come. We need, therefore, two sets of measures: the **preventive** and the **curative,** for the stabilisation of the economy.

For preventing or avoiding crisis, the remedy will depend on the diagnosis. Influences of climatic factors on the supply of raw materials cannot be ruled out altogether. In a country like India, where nearly two-thirds of the people depend on agriculture, it is necessary that dependence on rains should be reduced as far as possible so that agriculture no longer remains a gamble in the monsoons. A network of canals, wells and reservoirs may be provided to ensure an adequate and regular supply of water. Other external factors like wars, earthquakes, and epidemics cannot be provided against. They do not, however, play an important part in a trade cycle. At any rate, they do not occur with any degree of regularity.

Imperfect adjustment of demand and supply can be rectified by collecting and disseminating correct and up-to-date statistical information about the condition of crops, quantities of goods produced by the main industries, state of employment, imports and exports, per capita income, prices and cost of living index numbers and of company floatations, profits, *etc.* This will help the businessman to form an intelligent forecast of the probable changes in the demand for, and supply of, certain types of goods. The intelligence bureau may issue directives and warnings from time to time so that undue pessimism or optimism is nipped in the bud. In the boom period, the companies may be asked to follow a cautious policy in the distribution of dividends and to build up reserves.

Monetary Policy

The above-mentioned preventive measures will not, however, be enough. Besides these, a country must always formulate and follow an appropriate monetary policy so as to avoid the occurrence of booms and slumps. If they still come about, monetary weapon must be wielded to mitigate their severity and also to restore economic stability as early as possible.

Monetary policy embraces banking and credit policy relating to loans and interest rates as well as the monetary standard and public debt and its management. It influences the volume of credit base and, through it the volume of bank credit and thus the general level of prices and of economic activity. The usual methods through which it works are fully discussed in another chapter[3]. We may mention here that the important ones among such methods are: manipulation of bank rate and open market operations. When boom conditions are developing, bank rate is raised and thus credit is contracted with the consequent brake upon the undue expansion of business activity. In a depression, a policy of **cheap money** may be adopted to stimulate business investment and thus assist recovery.

The bank credit policy involves two types of controls: the quantitative and the qualitative. The quantitative control is aimed at general tightening or easing of the credit system as the situation may demand. It is exercised by influencing the reserves of the banks. The qualitative or selective control seeks to regulate particular type of credit. Its object is to stimulate, restrict or stabilise bank advances for specific business schemes. In recent years, the Reserve Bank of India has been following a policy of selective credit controls.

Obviously, monetary policy has much to commend itself and was, therefore, rightly regarded, in the early thirties, as the best anti-cyclical instrument. But there are limitations of the policy relating to the bank rate and open market operations. Its success will depend on how far certain assumptions

3. Chapter 53.

are true. For example, how far the various members of the banking system are prepared to accept the lead given by the central bank; how far the banks can make their borrowers use their credits for purposes for which such credits have actually been created; further, how far monetary causes are responsible for the economic fluctuations; and still further, and most important, whether the business community will adjust their investment exactly in accordance with the altered rates of interest.

Limitations. Thus, since these assumptions are only partially true, it is understandable that monetary management can claim only limited efficacy. The most serious limitation, in periods of depression, when the business community is so completely in the grip of pessimism, is that even a substantial reduction in the interest rates does not make them embark upon expansion of production and new investments. The horse may be taken to water, but it may refuse to drink. The monetary authority can only encourage business enterprises. The only result of lower interest rates may be to create a state of liquidity.

The existence of a huge public debt has also blunted the edge of monetary control. For the sake of their own solvency, the banks must keep the prices of bonds stable.

Hence, modern expert opinion is not inclined to place much reliance on monetary policy, as a tool for keeping economic activity in proper trim.

Fiscal Policy

The inadequacy of monetary policy led, therefore, to the search for suitable supplementary methods. Fiscal policy was the most important new find. But, for reasons to be explained presently, this new method, though it was "designed to supplement and strengthen monetary policy, has ended up by threatening to supplant monetary policy altogether." (Williams). Since public expenditure in all modern States constitutes a fairly respectable proportion of the total national income, fiscal policy is bound to affect the level of prices, production and employment, irrespective of the fact whether this policy is deliberately aimed at this or not.

Fiscal Policy, broadly speaking, consists of : (a) **Public spending or a policy of public works** and (b) **appropriate taxation.**

We have already seen that, according to Keynes' explanation, trade cycle is primarily caused by a disequilibrium between saving and actual investment. If, therefore, the capital outlays of the State and public bodies could be adjusted to the varying private (business) investments, disequilibrium can be prevented from arising, and, thus, economic stability ensured. And if disequilibrium has somehow come about, it can be rectified by adjusting public spending. Public spending has, thus, to be varied according to the exigencies of the business situation.

In a year of depression, that is, when private investment is at a low ebb, the deficiency in investment will have to be made up by large capital outlay by the State, and, conversely, during the upward swing of the cycle, the State will have considerably to cut down its spending programme. Thus, during the depression years, the State must be ready to spend beyond its current revenues.

In other words, the State should be prepared to have deficit budgets during depression. Conversely, there should be surplus budgets during the years of prosperity. To put it in another way, instead of having balanced budgets every year, the State should aim at budget-balancing over a series of years.

On the revenue side, rates and taxes should be lowered during depression, while they should be raised during boom years. To stimulate business investment during depression, not only the rates of taxes should be lowered but also more liberal allowances for depreciation and obsolescence, *etc.*, should be granted.

Thus, fiscal policy, which is also called the contra-cyclical management of public finance, may be operated both through public revenues and public expenditure. Between these two, the expenditure method is far more effective in stimulating business activity. Moreover, the revenue method leaves the entire initiative to the business community and is also not capable of directing expenditure into channels which may be particularly desired. However, best result will be achieved if both of them are combined.

Public Spending or public works policy, in view of its greater efficacy, deserves rather a detailed treatment. We shall begin with its theory. When during depression, economic activity is at a low ebb, and consequently there is considerable unemployment, the propensity to consume is naturally low. One important thing (apart from lowering the rate of interest) is to increase this propensity to consume. If somehow some additional employment could be created by starting public works and thus purchasing power increased through the wages paid to the newly employed, propensity to consume will rise and, in turn, stimulate private business investment, on the principles of multiplier and acceleration. The government expenditure on its public works will, thus, have brought about many times greater investment and, thus, contributed greatly towards all-round economic recovery. The public works expenditure of the State will have, thus, performed the function of **'priming the pump'** of economic activity in the country.

This is to fight a depression, when it has already occurred or is developing. But there is another

function that public spending programme may be made to perform, namely, that of stabilizing economic activity over a long time, and making it free from booms and depressions. This long-term aim can be achieved, as has been mentioned already, by constantly and appropriately adjusting public investment to the changes in private investment. The function is called the **'compensatory action'** of fiscal policy.

In the words of the American Economic Association, "In a system where the great majority of workers are in private employment, government stabilisation policy consists primarily in altering the general economic climate so as to mitigate or offset developing fluctuations in private business." Among the measures that a government may adopt to even out cyclical fluctuations, their report mentions the following:—

(i) Alteration in tax rates and in the design of tax structure to bring about changes in incentives to individuals.

(ii) Changes in government contributions to the income stream through transfer payments, *i.e.*, employment benefits, *etc.*

(iii) Change in public expenditure on public works and other government purchases.

(iv) Monetary control to bring about a change in the cost and availability of bank credit.

(v) Public debt or monetary policy to bring about changes in the financial assets and liabilities of the public.

(vi) Timely announcement of a clearly defined government policy with a view to influencing investment decisions as well as those relating to current scheduling of output and employment,

(vii) An appropriate international economy policy.

Two strategic principles have been recommended for the achievement of economic stability.

(1) Government tax revenue should be higher relative to government expenditure in periods of high employment than in periods of substantial unemployment.

(2) Money and credit should be relatively tight in periods of high employment and relatively easy in periods of substantial unemployment.

Complete unanimity is, however, still lacking amongst economists regarding the merits of public spending policy as a means of securing continuous equilibrium between saving and investment. As against this, all are agreed about the great utility of fiscal policy in regard to its narrower, but surer, application for combating cyclical fluctuations, when these have already occurred.

Apart from the infinite gain in assisting investment during depression, public spending or public works policy, during such a period, will enable the State to complete such works at much lower cost. Wages, prices and interest rate during depression are low. Moreover, the net expense by the State is lower still. After all, if such schemes are not undertaken, unemployment 'doles' would have to be paid. The net cost of public works is, therefore, their total cost minus the unemployment 'doles', which would have otherwise been paid.

Limitations. The limitations of fiscal policy must not, however, be lost sight of. To begin with, many of the public works may be non-shiftable in time. Some of them cannot wait for depression to set in. Most of them are directly connected with the general business movement, rather than being used as corrective.

Then, owing to immobility of labour, the policy may fail in creating additional employment. Road making, for example, cannot absorb the unemployed textile workers.

Besides, in a democratic State, the public may bitterly oppose heavily surplus budgets during period of prosperity and may demand tax reductions.

Further, sufficient care will also have to be taken to ensure that the spending by the State is in such spheres only which would not have been taken up by private investors, otherwise public investment does nothing more than merely replace private investment. Moreover, public spending should not increase the difficulties of private investors by raising the cost of construction materials, building labour, *etc.*

Notwithstanding these limitations, fiscal policy is a powerful anticyclical weapon. Its efficacy will be further heightened, if suitable monetary management is also combined with it. The two could be so devised as to be "mutually reinforcing". "In recovery from depression the deficit budgeting may play the larger role, both by creating new income directly, and by helping to implement an easy money policy, while in a boom, monetary policy would play an important and perhaps even the predominant role."

State Control of Investment. In recent years, economists have been advocating something farther than direct public investments for the purpose of counteracting business fluctuations. They urge that private investment should also be effectively controlled by the State for the same purpose. Control of private investment in certain countries dates from the thirties, when it was adopted as an emergency measure. It was further extended and tightened during the War of 1939–45 by the belligerent countries and by some neutral countries as well. But then the object was the diversion of resources for war purposes. After the war, though such control of investment was relaxed, yet its role is being greatly emphasised by the economists as a permanent measure of economic stabilization. In developing economies, as in the Indian economy which have

adopted a course of planned economic development, control on new capital issues is generally instituted.

The danger of such a policy lies in this that too much State direction and intervention will hamper private enterprise. But leaving private investment entirely free is also not very safe. A happy mean will have to be struck. Keynes was of the opinion that such a golden mean could be struck. When that is done, economic stabilization will become more practicable.

International Measures

So far we have been discussing individual national efforts at stabilisation. But trade cycle is an international phenomenon and no country is hermetically sealed from the rest of the world. In fact, this international aspect creates complications and makes crisis control all the more difficult.

The measures which are suggested to be adopted on an international scale are: International Production Control, International Buffer Stocks and International Investment Control. International Production Control envisages control of production and prices of the important primary products. The difficulties of such control are indeed formidable, notably because agriculture in countries like India is usually carried on a small scale and more as a mode of living than as business, so that even though it ceases to be profitable, it will be continued. But production control, as far as possible, combined with buffer stocks to counteract sudden changes in supply and demand, will go a long way in preventing rise or fall in their prices, which give rise further to serious fluctuations in the entire economy.

An international investment control for developing backward regions would help in raising the standards of living of their people and thus reduce the inequalities in the standard of living of different peoples. Such reduction in those inequalities is bound to strengthen the forces of stabilization. The I.B.R.D. and President Truman's Point-Four Programme and the Colombo Plan are attempts in this direction.

Conclusion. These are some of the measures that can be adopted to alleviate suffering. But the world has not been able to discover any panacea or sovereign remedy for a commercial crisis. Nothing short of reorganisation of the economic system can provide against the recurrence of crisis. These are by-products of capitalism and so long as capitalistic system of production continues such disturbances must continue to take place. A planned economy or some form of socialism may remove such a contingency.

Even a Socialist State will commit mistakes about organisation of production. It will also have to anticipate demand. No human organisation can be infallible, yet planning of the entire economic field will so co-ordinate the various economic activities that maladjustments will be a rare phenomenon. Even when dislocations do occur, the vast resources of the State can easily meet such a situation. No failure of individual firms or displacement of labour will take place; losses can be easily borne. When the whole world was suffering from acute depression and unemployment during the early 'thirties, no such dark clouds threatened the economic horizon of Russia. Planned economy seems to be the best way of not only preventing a crisis, but also of fighting it when it comes.

MATHEWS' MODEL

Samuelson and Hicks's models are based on the acceleration principle. But Prof. R.C.O. Mathews has pointed out in his book, *the Trade Cycle*, the acceleration principle $It = Y\ (Y_{t-1} - Y_{t-2})$ will not work because the stock of capital at the initial period t is not necessarily adjusted to the income level of the period $t-2$, after which income rises in period $t-1$ calling for re-adjustment of capital stock in period t-through fresh investment. Instead, there may be either excess capacity or short capacity in period $t-2$. Also, it is not necessary that investment in period t should always bring the stock of capital in adjustment with the income level of period $t-1$. Hence level of investment in period t cannot be expressed satisfactorily as a function of $(Y_{t-1} - Y_{t-2})$ as it is postulated in the acceleration principle, Mathews has therefore discarded the acceleration principle in his model and has instead adopted another principle known as the **capital stock adjustment principle.**

Mathews' approach to the theory of investment resembles that of Kaldor, Goodwin, Joan Rabinson and Kalecki. Like them Mathews has adopted the formulation that investment changes **directly** with income and inversely with the existing capital stock. A linear formulation of this capital stock adjustment is: $It = aY_t - bK_t$ where K represents the capital stock and I and Y respectively are investment and income.

The stock-adjustment principle as stated here covers the acceleration principle too as a special case when a is the normal capital-output ratio and $b = 1$. This means that the stock adjustment principle is a more general principle which includes the acceleration principle as a special case.

It can be shown that cyclical fluctuations can follow from the capital stock adjustment principle more or less in the same way as they follow from the acceleration model, either 'lags' or 'buffers' or both are a necessary condition for the interaction between the stock adjustment principle and the multiplier to generate endogenous cyclical fluctuations.

BOOK THREE :
MONEY AND BANKING

Part I
Monetary Standards and Theory of Money and Prices

48 NATURE AND FUNCTIONS OF MONEY

Meaning of Money

Money has been defined in various ways. Some say, **'Money is that money does.'** (Walker). In other words, anything that performs the functions of money is money. In the widest sense, the term 'money' includes all media of exchange—gold, silver, copper, paper, cheques, commercial bills of exchange, *etc.* But this definition is too wide. Cheques, bills, *etc.*, have been called representative money as they are only convenient representatives of the standard of value. Some writers narrow down the definition to include only the commodity (*e.g.*, gold) that may serve the purpose of money. This excludes bank notes or government currency notes from the category of money. These instruments cannot, logically speaking, be excluded, because they possess all the attributes of money, as we shall see presently.

The most commonly agreed view is that, **"anything which is widely accepted in payment for goods, or in discharge of other kinds of obligations"** is money (Robertson).

In Crowther's words. "The only essential requirement is general acceptability. Money . . . . need not itself be valuable. It must, indeed, be relatively scarce, since it would hardly do if money could be plucked off every tree. But, provided precautions are taken to keep it relatively scarce and, it may be added, comparatively invariable in amount—money can consist of things as worthless as a scrap of paper or the scratch of a clerk's pen in the books of a bank."

CONCEPTS OF MONEY

Theoretical Debate on the Definition of Money

In recent years, there has been a keen controversy on what is and what is not money. This controversy hinges on what functions money is expected to perform *i.e.* whether money is to be regarded as a mere medium of exchange or a store of value. The functions are discussed in detail in a subsequent system. As pointed out by Prof. Harry G. Johnson, in his recent survey of developments in *monetary theory and policy*, there are four main schools of thought on the definition of money and money supply We refer to them briefly as under:—

Conventional Approach. There are economists who define money on the basis only of its function being a medium of exchange. They include in the term 'money' currency and demand deposits in banks. Since they think that to serve as a medium of exchange is still the primary function of money, only currency and demand deposits in banks should be included in the definition of money because they are perfectly liquid and are generally and immediately acceptable as medium of exchange.

Thus, according to this school, Money Stock = - Cash + Demand Deposits. This is called M . This definition of money includes only currency and demand deposits, but excludes, all other assets (not so liquid) like time deposits, post office savings bank deposits and liabilities of non-banking financial institutions which are known as *near money*. They cannot be used as medium of exchange. It costs something to convert these assets into currency or cash or demand deposits. They are also called 'frozen assets' which can be sold at a substantially lower price.

Chicago Approach. Prof. Milton Friedman is the leader of this school. The basic idea underlying their approach is that they do not regard money as a mere medium of exchange but also as a *store of value.* Keynes also used the term 'money to hold'. Obviously, when money is to serve as a store of value, other assets besides currency and demand deposits must also be included in the term money. These economists regard money as a temporary abode of

1. *An Outline of Money*, 1950, p. 21.

purchasing power separating the act of purchase from the act of sale. Thus money is supposed to include, besides currency and demand deposits in banks as in the conventional approach given above, other assets like time deposits in banks as well as savings bank deposits. The time deposits are very closely linked with demand deposits and may appropriately be called *near money*. They are also liquid assets though not so liquid as currency and demand deposits because one cannot spend them as money. They have to be converted into cash or currency before they can be spent. Money in this sense is M_{L_2}

Thus M_2 + Time Deposits
= Currency + Demand Deposits + Time Deposits

Emperical studies have brought out the close relation between money income and money supply. It has been found that correlation between changes in money supply and changes in money income is more clearly brought out if time deposits are also included in the definition of money supply.

Gurley and Shaw Approach. The other school of quantity theorist is one led by Gurley and Shaw. They emphaise the implications of velocity of circulation of money and the existence of substantial volume of liquid assets closely substituable for money like short-term Government securities, liabilities of non-banking financial institutions, time deposits in banks, post office saving bank deposits, etc. Thus the definition of money as currency and demand deposits in banks is to be broadened to include time deposits in banks and other assets mentioned above.

Gurley and Shaw are also of the opinion that money supply should be defined as a *weighted* sum of currency, demand deposits, time deposits and liabilities of **non-banking financial** institutions, weights being assigned on the basis of degree of their substitutability for currency. For instance weight of unity be assigned to currency and demand deposits in banks and weights between zero and unity to other assets depending on the degree of substitutability between a particular asset and currency.

Credit Approach. There are two broad groups representing this approach. One group, consisting of the financial experts of the Federal Reserve System of the U.S.A., emphasise the close substitutability between currency and bank credit. They would rather substitute credit for currency, since credit instruments are very close substitutes for money.

The second group adopts the views of the Radcliffe Committee whose theoretical basis was provided by R.S. Sayers. This group wants to replace the concept of money by the general liquidity situation of the economy. They are of the view that money supply and its velocity have little significance for an economy can substitute credit for money without any limit. A credit card can enable the holder to buy anything. This means a decrease in the velocity of circulation. In other words, Radcliffe-Sayers Thesis is that money supply is not the main lever of monetary action, because spending decisions do not depend only on money supply but the state of liquidity of the economy. Liquidity means the case with which funds can be raised for financing purchases which in turn depends on the borrowing power of the community as a whole. Hence these economists reject money as an operationally useful concept and substitute for it general liquidity position of the economy.

Conclusion. Thus we see that there is no consensus among economists as to what is money and what is not money.

Money Stock Measures in India

In recent years, there has been a great deal of debate as to what constitutes money supply with the public. While all are agreed on money supply with the public in the sense in which it has been explained above (*i.e.*, currency plus demand deposits with banks), many monetary theorists have expressed the opinion that in a country like India where the branches of banks are confined to cities, towns and only to a proportion of villages and where the people maintain substantial deposits with post office saving banks, it would be a true measure of total money supply with the public, if the peoples' deposits with postal savings banks are also included. Accordingly, while money supply with the public in the sense of currency and demand deposits with banks (and other deposits with RBI) may be designated as M_1. Another measure of money stock in the country, called M_2, would be if post office saving bank deposits are also added to M_1. In this case, apart from currency which is most liquid form of money, demand deposits with banks and savings deposits with post office saving banks are also taken into account.

Some economists would like to go further and include time deposits with banks also in the country's money stock. When that is done, the aggregate of money supply is designated M_3 in India. This is equal to the sum of M_1 and time deposits with banks. The justification advanced for this is that the holders of time deposits regard their such deposits as *near money assets* and in time of need can use their time deposits by obtaining bank loans against them or by getting them converted into cash by receiving payment of such amounts before their maturity by foregoing interest which would have accrued had those deposits been retained till their maturity.

The process of extending the concept of money supply or money stock measures does not stop here. Logically speaking, apart from demand deposits and time deposits with banks, quite substantial am ·'s are kept by people in India with post offices no ıly in the postal saving banks, but also in the fo of term deposits (medium-term and long-term) . e

form of post bonds/cash certificates. The money stock in this comprehensive sense-currency with the public plus demand deposits with banks plus time deposits with banks plus total posts office deposits (both saving deposits and term deposits) has, in India, been designated M_4.

Difficulties of Barter

When exchange is done without the intervention of money, we call it barter. Barter, however, is possible only under extremely simple conditions of exchange. As social organization became more complex through a more minute division of labour and multiplicity of human wants, it was realised that exchange by barter was not a satisfactory method.

The following are the main difficulties of the barter system:—

(i) **Double coincidence of wants.** Barter requires a double coincidence of wants. If 'A' possesses a cow, for instance, and wants to exchange it for a horse, he has to find a person, who not only can spare a horse but also wants a cow. Suppose he meets 'B' who wants a cow but can only offer sheep. 'A' may then have to find a man who wants sheep, and so on until he can get the commodity he wants by a series of barter transactions. It is obvious that this method involves much inconvenience and risk.

(ii) **Lack of a common measure of value.** The difficulties of barter do not end here. Even if two persons, who want each other's goods happen to meet, a second difficulty arises: In what proportion the two goods are to be exchanged? There is no common measure of value. The ratio will be arbitrarily fixed according to the necessities of the two parties or the intensities of their reciprocal demand. One party is bound to suffer under conditions, where each exchange is an isolated transaction.

(iii) **Indivisibility of certain articles.** Even if an agreement is reached regarding the proportion in which things should be exchanged, a third difficulty may arise when the commodities concerned are indivisible. For instance, take the case of a man who wants to purchase wheat equal to half the value of his cow. With the other half, he wants to purchase cloth which is in the possession of a third person. How is the cow to be divided? Many similar situations can be imagined.

The difficulties of barter can be illustrated by taking the example of a French singer who gave performances in an island where money was not in use. She was paid in the form of pigs, goats, fowls, apples, bananas, *etc.* She had to give the fruits and other things to her pigs and goats to keep them alive. What did she gain? Nothing. Had she been paid in money for these performances, she would have become rich.

Difficulties of barter led to the introduction of money which passed through several stages, *viz.*, commodity money, metallic money, paper money and then credit money.

ROLE AND IMPORTANCE OF MONEY IN MODERN ECONOMY

There is no doubt that money facilitates and motivates all economic activity relating to consumption, production, exchange and distribution. Money enables a consumer to maximise his satisfaction. Money measures the intensity of desire and the utility of a commodity to a consumer. Money facilitates production by stimulating saving and investment. It gives mobility to capital and helps in capital formation. It enables the harnessing of various factors of production so that the entrepreneur is able to maximise his profit. Introduction of money facilitates exchange and helps in the development of trade and commerce, both national and international. Money functions as a common denominator for the distribution of social product. It is in terms of money that, wages, rent, interest and profits are determined. Money helps the price mechanism to operate and serve as an instrument for the allocation of resources among competing uses. Money is an extremely valuable social instrument which has largely contributed to the growth of national wealth and social welfare. It has ensured the smooth functioning of the economic system. It has accelerated the process of industrialisation. In money economy, there is a continuous flow of money payments. This circular flow is essential for promoting economic welfare.

Whatever the type of economic system money is found to be of great service. In a capitalist economy, money plays an important role because capitalism basically depends, on price mechanism which operates through the medium of money. As Prof. Robertson observes, "the existence of monetary economy helps society to discover what people want and how much they want.....and to decide what shall be produced and in what quantities, and to make the best use of its limited productive power. And it helps each member of society to ensure that the means of enjoyment to which he has access, yield him the greatest amount of actual enjoyment which is within his reach." Even in a socialist economy, price tags are essential for its smooth, efficient and economical working. It is said while money is a master in a capitalist economy, it is a servant in a socialist economy. Money also plays a significant role in a mixed economy. It plays a crucial role in determining employment, output and income in the private sector. In the public sector, it is helpful in the allocation of resources and for changing the pattern of income distribution. It is a powerful instrument for capital formation and economic development in a developing economy.

Dangers of Money

Money is not, however, an unmixed blessing. Money is a good servant but a bad master.

Money has proved dangerous in several ways:

(i) **Economic Instability.** Some economists are of the view that money is responsible for economic instability that is to be found in capitalist economies.

When there was no money, saving was not divorced from investment. Those who saved also invested. But in a monetised economy, saving is done by certain people and investment by some other people. Hence, it does not follow that savings and investment should be equal. When saving in a community exceeds investment, then national income, output and employment decrease and the economy is engulfed in depression. On the contrary, when investment exceeds savings (*i.e.*, investment financed not by genuine savings but through deficit financing), then national income, output and employment increase and there is a spell of prosperity. But if the process of money creation and investment continues beyond the point of full employment, inflationary situation will be created. Hence, disparity between savings and investment resulting from the creation of money, is said to be the main cause of economic fluctuations.

The main danger of money lies in its liability of being over-issued in the case of inconvertible paper money. The over-issue of money may result in hyper-inflation as in India in 1973-74. Excessive rise in prices hits hard the consuming public and the fixed-incomists. It engenders speculation and inhibits productive enterprises. It also upsets debtor-creditor relationship. It adversely affects distribution of income and wealth in the community so that the gulf between the rich and poor widens.

(ii) **Economic Inequalities.** Money has proved to be a very convenient tool for amassing wealth and of the exploitation of the poor by the rich. It has created a yawning gulf between the 'haves' and the 'have-nots.' The misery and degradation of the poor is, thus, to no small measure due to the existence of money.

(iii) **Moral Depravity.** Money has weakened the moral fibre of man. The evils to be found in the affluent society are only too obvious. The wealthy monopolise all the social evils like corruption, the 'wine and the woman'. In their case, money has proved to be a soul-killing weapon. In the words of an eminent German economist Von Mises, "money is regarded as the cause of theft and murder, of deception and betrayal. Money is balmed when the prostitute sells her body and when the bribed judge perverts the law. It is money against which the moralist declaims when he wishes to oppose excessive materialism. Significantly enough, avarice is called the love of money and all evil is attributed to it."[2] Money in itself may not be bad, but its possession no doubt facilitates corruption and crime.

Thus, 'money which is a source of so many blessings to mankind becomes, unless we control it, a source of peril and confusion."[3]

Money in a Socialist State

In view of the evils mentioned above, especially the exploitation of the poor by the rich, prominent socialists like Marx and Lenin condemned money. No wonder that when the Communists came to power in Russia, they took steps to abolish money. But it was soon realised that to run a modern economy without money was impossible. All economic activity has to be based on monetary calculations. As Leon Trotsky observed, "The blueprints produced by the offices must demonstrate their economic expediency through commercial calculation. Without a firm monetary unit, commercial accounting can only increase the chaos."[4]

Accordingly, money is fully and firmly established in all Socialist States. Even there it performs the essential functions, *viz.*:

(a) It facilitates optimum allocation of the country's resources.
(b) It functions as medium of exchange and a measure of value.
(c) Money guides economic activity.
(d) Money is essential for facilitating distribution of national income.

FUNCTIONS OF MONEY

Money performs five important functions:—

(i) It serves as a medium of exchange.
(ii) It is used as a store of value. In more modern terminology, it helps to keep resources liquid.
(iii) It is a standard for measuring values.
(iv) Money serves as a standard for deferred payments.
(v) It transfers value.

Money as Medium of Exchange

The most important function of money is to serve as a medium of exchange. As a medium of exchange, money removes all the difficulties of barter. There is no necessity for a double coincidence of wants in a money economy. The man with the cow, who wants to purchase a horse, need not hunt for a horse-seller, who wants a cow. He can sell his cow in the market for money and then purchase a horse

2. Von Mises—*Theory of Money and Credit*, p. 93, quoted by K.P.M. Sundharam in his *Money, Banking and International Trade*, p. 27.
3. Robertson, D.H.—*Money*, p. 15.
4. Trotsky, L.D.—*Soviet Economy in Danger*, p. 30.

with the money thus obtained. The convenience is very great when the person has to sell his services or goods in an unfinished state which no consumer in the narrow sense wants. They can be easily turned into money, the general purchasing power. The difficulty of indivisibility of certain articles is also eliminated. Money units are of all denominations and it is easy to make fractional purchases, which is not possible under most cases of barter.

Money as a Standard Measure of Value

When money serves as a medium of exchange, it incidentally measures the values of things for which it is exchanged. One inconvenience of barter, as noted, was the lack of common measure or a common denominator of value in terms of which other values could be expressed and added and accounts kept. Money removes this difficulty too. Money serves as a **unit of account.** In a money economy, it is easy to compare the relative values of commodities and services which are dissimilar and entirely different from one another. The values are in proportion to their respective prices. Expression of values in prices enables us to add them up and have a definite idea of a person's or a community's wealth. In matters of exchange, a common standard of value makes the transaction easy and also fair.

Money as a Standard of Deferred Payments

Money also serves as a standard of payments made after a lapse of time. Lending and borrowing, therefore, must take place in terms of a commodity which will, reasonably speaking, keep its value stable over time. Most commodities deteriorate with the passage of time. But if the money material is properly selected and managed, its value can be kept more stable than that of other articles. By serving as a standard measure of payments over time, money makes borrowing and lending much less risky. Thus, it helps in stimulating all kinds of economic activity which depends on borrowed money or credit.

Money as a Store of Value

Money serves as a store of value or, more correctly, it enables a person to keep a portion of his assets liquid. Liquid assets are those which can be used for any purpose at any time one likes. Most persons in the modern world have to keep currency notes in their pockets or at home, or they may keep current accounts with the banks withdrawable by cheque. The necessity arises from the fact that the two streams of income and expenditure do not keep time with each other. An employer has to pay wages, *etc.*, periodically, even daily, while his income does not come to him in the same periodical intervals. Money is best kept as a store of value to be used as and when need arises.

Functions of money have been summed up in a couplet thus:

"Money is a matter of functions four,
A medium, a measure, a standard, a store."

It should be noted that all these functions of money are not independent of each other. They are inter-related. Money is kept as liquid assets, for instance, because it serves as a medium of exchange. It is accepted as a medium of exchange, because it has comparatively stable value. For the same reason, it serves as a standard for deferred payments and measure of value.

Money as a Means of Transferring Value

There is also another function which money performs. One can sell one's immovable and movable belongings at one place and with the money so acquired he can buy them elsewhere. Value will thus be transferred. Such things have happened on a very large scale in India after the partition of the country.

Primary, Secondary and Contingency Functions

According to Kinley, functions of money can be classified as under:

(a) Primary functions, *e.g.*, as medium of exchange and measure of value, (b) Secondary Functions, *e.g.*, as standard of deferred payments, as store of value and as a means of transferring value, and (c) Contingent Functions such as distribution of national income, as basis of bank credit, imparting liquidity and uniformity to wealth and equalising marginal utility.

Static and Dynamic Functions

Paul Einzig classifies the functions of money as (a) Static and (b) Dynamic.

Static Functions are those mentioned above, *viz.*, serving as a medium of exchange, measure of value, a standard of deferred payments, store of value and transfer of value.

The **Dynamic Functions** of money are those by which money influences the working of the economy by influencing price level, level of consumption, volume of production and distribution of wealth in the economy. The dynamic functions thus determine the economic trends. It is well-known that there is a close connection between money supply with the public and the general price level in the country. It is also admitted that a high price level (inflation) and low price level (depression) have a profound effect on the level of production, one stimulating and the other depressing it. Deficit financing (*i.e.*, created money) can be resorted to for bringing about a fuller utilisation of the human and natural resources of the country which may otherwise be lying idle or underutilised. The monetary system also facilitates public debt.

Dynamic functions have assumed great importance in modern times as is evident from the monetary policy pursued by modern governments.

When Does Money Cease to Perform its Functions?

The basic function of money is to serve as a stable medium of exchange so that it can serve as a standard of deferred payments on the basis of which debts can be contracted and repaid. But money ceases to perform its functions properly and satisfactorily in a highly inflationary situation when money is fast losing its value. Such a situation arose in Germany in and after the two great wars. Hyper-inflation causes a serious breakdown of the monetary system. In such a situation, the first consequence is that money ceases to act as a standard of deferred payments. The debts are then contracted in terms of some other universally acceptable currency as the American dollar or the English £.

Since all the functions of money are inter-dependent or inter-connected, it ceases to perform other functions too. When money ceases to function as a standard of deferred payment, it also ceases to act as a store of value. It is not considered worthwhile to hold or hoard money when its value is being fast eroded. In India, for instance, in 1974, instead of keeping bank balances, people were eager to invest in real estate or keep jewellery or gold instead of cash owing to rapidly depreciating value of money. Since, owing to instability in value, money ceases to be a bridge between the present and the future, people prefer to keep their assets in other forms of wealth.

When money can no longer function satisfactorily as a store of value, it can no longer function satisfactorily as a medium of exchange and a unit of account or a measure of value. All calculations become difficult when money is fast losing its value. Money is thus no longer a satisfactory unit of account. As for medium of exchange, when there is hyper-inflation, no one is inclined to receive money because it loses value in their hands. Hence, no one likes to keep or hold money at all.

In such a situation of a complete monetary breakdown, old money must be demonetised and some new money created to take its place.

Essentials of Good Money

From the above discussion, one can easily infer what the essentials of good money can be: (a) The basic ingredient of good money is that, it must be **stable** and not rapidly change in value. (b) It must then be a generally acceptable medium of exchange. (c) It must be a dependable measure of value. (d) It must be a suitable store of value. (e) Being generally acceptable, it should be capable of transferring value.

DEMAND FOR AND SUPPLY OF MONEY

Before we discuss the value of money in the next chapter, it will be useful to have an idea of the demand for and the supply of money. The modern notion about these aspects of money is different from the traditional one. Let us analyse demand for and supply of money separately.

Demand for Money

The old idea about the demand for money was that money was demanded for completing the business transactions. In other words, the demand for money depended on the volume of trade or transactions. As such, the demand for money increased during boom period or when the trade was brisk and it decreased during depression or slackening of trade.

The modern idea about the demand for money was put forward by the late Lord Keynes, the famous English economist, who gave birth to what has been called the Keynesian Economics. According to Keynes, the demand for money, or liquidity preference as he called it, means the demand for money to hold. Broadly speaking, there are three main motives on account of which money is wanted by the people, *viz.*:

(i) Transactions motive.
(ii) Precautionary motive.
(iii) Speculative motive.

Now a word about each one of them.

(i) **Transactions Motive.** This motive can be looked at (a) from the point of consumers who want income to meet the household expenditure which may be termed the **income motive** and (b) from the point of view of the businessmen, who require money and want to hold it in order to carry on their business, *i.e.*, the business motive.

(a) **Income Motive.** The transactions motive relates to the demand for money or the need for cash for the current transactions of individual and business exchanges. Individuals hold cash in order "to bridge the interval between the receipt of income and its expenditure." This is called the **'Income Motive.'** Most of the people receive their incomes by the week or the month, while the expenditure goes on day by day. A certain amount of ready money, therefore, is kept in hand to make current payments. This amount will depend upon the size of the individual's income, the interval at which the income is received and the methods of payments current in the locality.

(b) **Business Motive.** The businessmen and the entrepreneurs also have to keep a proportion of their resources in ready cash in order to meet current needs of various kinds. They need money all the time in order to pay for raw materials and transport, to pay wages and salaries and to meet all other current expenses incurred by any business of exchange. Keynes calls it the **'Business Motive'** for keeping money. It is clear that the amount of money held, under this business motive, will depend to a very large extent on the turn-over (i.e., the volume of

trade of the firm in question). The larger the turn-over the larger, in general, will be the amount of money needed to cover current expenses.

(ii) **Precautionary Motive.** Precautionary motive for holding money refers to the desire of the people to hold cash balances for unforeseen contigencies. People hold a certain amount of money to provide for the risk of unemployment, sickness, accidents and other more uncertain perils. The amount of money held under this motive will depend on the nature of the individual and on the conditions in which he lives.

(iii) **Speculative Motive.** The speculative motive relates to the desire to hold one's resources in liquid form in order to take advantage of market movements regarding the future changes in the rate of interest (or bond prices).

The notion of holding money for speculative motive is a new typically Keynesian idea. Money held under the speculative motive serves as a store of value as money held under the precautionary motive does. But it is a store of money meant for a different purpose. The cash held under this motive is used to make speculative gains by dealing in bonds whose prices fluctuate. If bond prices are expected to rise, which in other words means that the rate of interest is expected to fall, businessmen will buy bonds to sell when the price actually rises. If, however, bond prices are expected to fall, *i.e.*, the rate of interest is expected to rise, businessmen will sell bonds to avoid capital losses. Nothing being certain in this dynamic world, where guesses about the future course of events are made on precarious bases, businessmen keep cash to speculate on the probable further changes in bond prices (or the rate of interest) with a view to making profits.

Given the expectations about the changes in the rate of interest in future, less money will be held under the speculative motive at a higher current or prevailing rate of interest and more money will be held under this motive at a lower current rate of interest. The reason for this inverse correlation between money held for speculative motive and the prevailing rate of interest is that at a lower rate of interest less is lost by not lending money or investing it thus at higher rate.

Friedman in his restatement of the Quantity Theory of Money draws a distinction between *demand for money and the demand function for money.* Friedman takes note only of the asset demand for money, not so much of the transactions demand. Among the other post-Keynisian economists, Baumol and Tobin are of the view that transactions demand for money is influenced not only by the devel of income but also by is influenced not only by the level of income but also the rate of interest (for fuller discussion see chapter 50)

Supply of Money

We have described the demand for money as the demand for the stock (not flow) of money to be held. The flow is over a period of time and not at a given moment. In the case of a commodity, it is a flow. Goods are being continually produced and disposed of. This is the essential difference between the demand for money and the demand for a commodity. Similarly, the supply of money conforms to the 'stock' concept and not the 'flow' concept. Just as the demand for money is the demand for money to hold, similarly, the supply of money means the supply of money to hold. Money must always be **held** by some one, otherwise it cannot exist. Hence, the supply of money means the sum total of all the forms of money which are held by a community at any given moment.

The stock of money, which constitutes the supply of it, consists of (a) metallic money or coins, (b) currency notes issued by the currency authority of the country whether the Central bank or the government, and (c) chequable bank deposits. In old times, the coins formed the bulk of money supply of the country. Later, the currency notes eclipsed the metallic currency and now the bank deposits in current account withdrawable by cheques have overwhelmed all other forms of money. In modern times, the supply of money really means the chequable bank deposits.

The modern economists include in money stock not only currency or cash balances and demand deposits in banks together called M_1. They also include time deposits in the banks called near money and call it M_2 ($=M_1$ + time deposits and deposits in post offices.) The total money stock in this sense is called M_3. Further, term deposits in the form of postal bonds/cash certificates are also included. Thus money stock in this comprehensive sense includes currency, demand deposits in banks, time deposits with banks plus total post office deposits, savings bank and term deposits. It has been designated as M_4.

The total supply of money in a contry, by and large, depends on the credit control policies pursued by the banking system of the country.

49 MONETARY STANDARDS

Various monetary systems or monetary standards have been adopted in practice from time to time. These are (a) **Bimetallism,** (b) **Monometallism,** silver standard or gold standard, and (c) **Paper Standard.**

Bimetallism has now only a historical interest. We shall discuss here gold standard.

GOLD STANDARD

Although gold standard of the orthodox type ceased to function a long time back but gold standard still retains some of its old halo. Gold standard still figures in the discussions of the monetary system. There are several distinct phases through which gold standard has passed. We are familiar with gold currency standard, gold exchange standard, gold bullion standard and now, its latest variety, gold parity standard. We shall now say a word about each of these types of gold standard.

Gold Currency Standard

This is also called Full Gold Standard. A country is on a full gold standard when gold serves not only as standard of value but also circulates as coins. Before 1914, Britain had this kind of gold standard and so had the U.S.A., France, Germany and other European countries. Gold provides for the currency a solid and tangible base. It is called the traditional or the orthodox gold standard.

We may illustrate its working from the example of pre-1914 Britain. Gold circulated in the form of sovereigns of a given weight (113-1/623 grs.) of pure gold, plus a little alloy. The actual weight of the sovereign was 123.27447 grammes 11/12 fine. In other words, one ounce of gold 11/12 fine could be coined into £3 17s. 10½d. in English money. Actually the Bank of England only gave £3 17s. 9d. for every ounce of such gold. To purchase an ounce of standard gold from the Bank, one had to pay £3 17s. 10½d. per oz. Under this system, therefore, the purchasing power of a British sovereign could not rise appreciably above or fall appreciably below 123.27447 grammes of gold 11/12 fine or 113.1/623 grammes of pure gold.

This system could not be maintained during the World War of 1914-18, and had to be given up. The reason was that, for the prosecution of war, paper money had to be issued on a very large scale and there was not enough gold with the Central bank to maintain convertibility of note-issue. In April 1925, however, Great Britain restored the Gold Standard but of a different variety, *viz.*, the Gold Bullion Standard.

Gold Bullion Standard

Under the gold bullion standard, the value of the currency is fixed in terms of gold by making such currency convertible into gold (bullion not coin), and vice versa. But gold does not circulate as coins.

In the United Kingdom, under the Gold Bullion Standard, the Bank of England was willing to buy any amount of gold at £3 17s. 9d. per ounce 11/12 fine and to sell it in minimum amount of 400 ounces, at £3 17s. 10½d. This was the same rate as before 1914. Gold was allowed freely to move into or outside the country. As a measure of economy, no gold coins circulated in the country. But gold was made available for foreign payments.

The Gold Bullion Standard was adopted in India in 1927 on the recommendation of the Hilton Young Commission. The currency authority was placed under an obligation to buy or sell gold at rates announced beforehand subject to a minimum of 400 ozs. of gold.

Merits. The Hilton Young Commission claimed that it had all the advantages of a full gold standard minus its disadvantages:

(i) It is economical as no gold coins have to be minted and put into circulation. In their daily

dealings, the public use a cheap medium of exchange, either paper money or rupees.

(ii) It makes for national prestige, because gold is made freely available both for use inside the country and for exporting it abroad and not merely for exchange purposes as under the gold exchange standard.

(iii) The paper currency, under gold bullion standard, has a more tangible and solid backing. It is convertible into gold. But, under the gold exchange standard, one token money (currency note) is convertible into another token money (rupee).

(iv) It is also claimed that, under this system, an automatic mechanism for expansion and contraction of currency is maintained. The currency will be expanded when gold is sold to the currency authority, and it will be contracted when gold is purchased by the public.

(v) It is considered that gold kept as a reserve in the central bank is much more useful and gives more valuable support to the national currency than gold put into circulation. This is provided under the gold bullion standard.

(vi) The gold bullion standard provided for the public the facility to obtain gold and liberty to melt or export it.

But these merits of the gold bullion standard are more or less theoretieal; at any rate, they turned out to be so in the case of India. For the average man, the convertibility of notes into gold was a farce, for who could bring sufficient paper money to purchase 400 oz. of gold (400 oz. = 1,065 tolas)? Thus, under gold bullion standard, automatic expansion and contraction of currency was not brought about.

In 1931, England went off the gold standard and so did India. The gold bullion standard made an exit 'unhonoured and unsung.'

Gold Exchange Standard [1]

The first country to adopt gold exchange standard seems to have been Holland, which it did in 1877. Russia followed Holland in adopting it in 1894. Austria-Hungary too adopted it at the same time. The credit, however, of perfecting it and working it effectively belongs to India where it started functioning in 1907. The Philippine Islands had established it a few years earlier. The Genoa International Conference held in 1922 passed a resolution recommending the adoption of the gold exchange standard. India was on this system when the war of 1914–18 broke out.

As this system worked in India, the internal currency consisted of silver rupees which were token coins and paper currency. But for foreign payments sterling (convertible into gold in London) was sold by the Government in return for rupees at a fixed rate. In London, the Secretary of State sold rupees (called Council Bills since they were sold by the authority of the Secretary of State-in-Council) to those who wanted to make payments to India. When the Government of India sold drafts on the Secretary of State, they were called Reverse Councils. The rates [2] for buying and selling of rupees were fixed in such a way as to maintain the sterling-rupee ratio at 1s. 4d., or nearabout.

Thus, the gold exchange standard necessitates the keeping of two reserves, one in the country, which has adopted it, in the form of home currency, and the other at a foreign centre, the former to make payment for the Council Bills and the latter to pay the Reverse Councils. The successful functioning of the system depends on the adequacy of these reserves. The Government of India maintained a reserve for the purpose called the Gold Standard Reserve.

The system broke down during the war of 1914–18 due to great demand for rupees accompanied by an excessive rise in the price of silver. High price of silver made the rupee a full-valued coin (instead of being a token coin that it was) leading to its melting and hoarding. The Government was unable to supply rupees at the old rates. First, the rate was raised, but later the attempt to maintain the rupee in terms of the sterling was given up altogether.

After the war (in 1920), the gold exchange standard was again tried at the rate of 2s. (gold) per rupee, but had to be given up. This time for opposite reasons, *viz.*, a fall in the price of silver accompanied by a great demand for sterling due to excess of imports over exports. The Government was unable to sell sterling (by rupees) at 2s. gold or even at 2s. sterling.

Essential Features. Thus, the essential features of gold exchange standard are:

(i) The monetary standard is fixed either directly or indirectly in terms of a certain number of grammes of gold. For instance, the Indian rupee was made equal to 7.53 grammes.

(ii) The local currency is pegged to a foreign currency and the local mints are closed to free coinage so that there may be no difficulty in maintaining its value.

(iii) It is essential to maintain in the 'planet' country a reserve in gold and in the 'satellite' country a reserve in the local currency to provide resources for the maintenance of the exchange value of the currency.

(iv) To ensure that the actual rates of exchange

1. See "International Currency Experience," League of Nations, 1944, Ch. II.

2. Before the war of 1914–18 the selling and buying rates of the rupee were 1s. 4d. and 1st. 3-29/32d. respectively, the former in London (Council Bills) and the latter in India (Reverse Councils).

do not vary widely from the fixed rate, drafts are sold freely in both countries.

Advantages. Among the advantages claimed for the gold exchange standard one was that it gave all the advantages of the full gold standard without involving the use of gold. It is thus economical. Moreover, linking the rupee with the sterling was said to benefit India, because of her considerable trade relations with Great Britain and financial status of London in the international field. International payments, when made through sterling, were considerably facilitated, while the sterling link gave the rupee a high status.

The general advantages of such a system are:

(i) It is economical.
(ii) It facilitates foreign trade.
(iii) It keeps the external value of the currency stable.
(iv) Possibly it may also make for comparatively stable price levels.

Defects of the Gold Exchange Standard. Gold Exchange Standard, as it worked during the inter-war period, was criticised on several grounds:

In the first place, it was charged with breeding inflation. But it was really anti-deflationary rather than inflationary.

Secondly, the central banks did not follow any concerted or uniform policy in their reliance on exchange reserves as against gold, so that their isolated actions tended to produce a financial chaos.

Thirdly, keeping of reserves in the form of a foreign currency was deemed to be a blow to national prestige.

Fourthly, it was considered to be a British fad and disliked by many countries on that account.

Fifthly, there was an inherent danger of depreciation of the foreign currency in which the reserve was kept.

Finally, it was said that, unlike gold movements, the movements in foreign exchange reserves did not bring into play the reciprocal tendency towards contraction or expansion of currency.

So far as the working of this standard in India is concerned, the gold exchange standard was criticized by the Hilton Young Commission in scathing terms. The following points may be mentioned in this connection:

(i) It was too abstract, far from simple and 'unintelligible to the uninstructed public.' Not even educated Indians could easily understand its working. Such a system could not inspire popular confidence or enthusiasm. It made the currency authority a suspect in the eyes of the public.

(ii) As the system operated in India, there was unnecessary duplication of the reserves. There were three reserves in India—the Gold Standard Reserve, the Paper Currency Reserve and the Government of India's balances. These reserves had their counterparts in England.

(iii) The system was not automatic. In its operation, it depended too much on the will of the currency authority.

(iv) It lacked elasticity. Expansion of currency did take place in India when rupees were issued to meet Council Bills, but once issued, the rupees remained in circulation. There were no means by which contraction of currency could be effected.

(v) A very serious defect is that currency policy of one country becomes subservient to that of another country. The Indian rupee was subject to all the misfortunes to which the English currency may have been subject to.

The Hilton Young Commission was of the opinion that the gold exchange standard had inherent defects and it was not possible to correct them. They came to the conclusion that it could not be mended, it must be ended. Accordingly, they recommended its replacement by the gold bullion standard (already studied above).

Gold Parity Standard

The latest to enter the list of gold standards is the **gold parity standard.** This is the type which is supposed to prevail under the aegis of the International Monetary Fund. Under this system, no gold coins are put into circulation. Gold does not serve as a medium of exchange. The internal currency consists largely of notes and some form of metallic money but certainly not of gold, nor are these notes convertible into coins as under the full gold standard, nor into gold bullion as under the bullion standard, nor into particular foreign currency based on gold as under the gold exchange standard. But the only respect in which gold comes into play, under this system, is that the currency authority takes upon itself the obligation of maintaining the exchange rate of the domestic currency stable in terms of a certain quantity of gold. This is the type of gold standard which the member countries of the I.M.F. were supposed to have till 1975 when gold was replaced by SDR's for that purpose.

Advantages of Gold Standard

Several advantages are claimed for the gold standard, especially when it is adopted simultaneously by a number of countries, *i.e.*, international gold standard.

(i) It is an objective system and is not subject to the changing policies of the government or the whims of the currency authority.

(ii) Gold standard enables the country to maintain the purchasing power of its currency over long periods. This is so because the currency and credit

structure is ultimately based on gold in possession of the currency authority. [3]

(iii) Another important advantage claimed for gold standard is that it preserves and maintains the external value of the currency (rate of exchange) within narrow limits.[4] As a matter of fact, within the gold standard system, it provides fixed exchanges, which is a great boon to traders and investors. International division of labour is greatly facilitated.

(iv) It gives, in fact, all the advantages of a common international currency. It establishes an international measure of value. As Marshall pointed out before the Fowler Committee (Report on Indian Currency) in 1898, the change to a gold basis is like a movement towards bringing the railway gauge on the side branches of the world's railway into unison with the main lines.[5] This greatly facilitates foreign trade, because fluctuations in rates of exchange hamper international trade.

(v) It is further claimed that gold standard helps to adjust the balance of payments between countries automatically. How this happens may be illustrated by a simple example. Suppose England and America are both on gold standard and only trade with each other, and that a balance of payments is due from England to America. Gold will be exported from England to America. The Bank of England will lose gold. This will contract currency in England and bring about a fall in the British price level. Price level in America will rise due to larger reserves and the expansion of currency and credit. England will become a good market to buy from and a bad market to sell in. Conversely, America will become a good market to sell in and a bad market to buy from. British exports will be encouraged and imports discouraged. American exports will be discouraged and imports encouraged. The balance of payments will tend to move in favour of Britain until equilibrium is reached. It is in this way, that movement of gold, by affecting prices and trade, keeps equilibrium among gold standard countries. More of this later.

(vi) Gold standard inspires confidence and contributes to national prestige, for "so long as nine people out of ten in every country think the gold standard the best, it is the best."

Disadvantages of Gold Standard

(i) Gold standard is costly and the cost is unnecessary. We only want a medium of exchange; why should it be made of gold? It is a luxury. 'The yellow metal could tickle the fancy of savages only.'

(ii) Even the value of gold has not been found to be absolutely stable over long periods.

(iii) Under the gold standard, currency cannot be expanded in response to the requirements of trade. The supply of currency depends on the supply of gold. But the supply of gold depends on the success of the mining operations, which may have nothing to do with the factors affecting the growth of trade and industry in the country.

Recently even the gold standard has been a managed standard. The central banking technique has been applied deliberately to control the working of the gold standard. It is thus no longer as automatic as it was claimed to be.

(iv) Gold standard has also been charged with sacrificing internal stability to external (exchange) stability. It is the international aspect of the gold standard which has been paid more attention to.

(v) Another disadvantage is that, under gold standard "gold movements lead to changes in interest rates, so that investment is stimulated or checked solely in order to expand or reduce money income" (Benham).

(vi) A country on a gold standard cannot follow an independent policy. In order to maintain the gold standard or to restore it (as in England after World War I), it may have to deflate its currency against its will. Deflation spells ruin to the economy of a country. It brings, in its wake, large-scale unemployment, closing of works and untold suffering attendant on depression.

Conditions for Successful Functioning of Gold Standard

There are certain pre-conditions for the successful functioning of the gold standard:

(i) **Observance of the Rules of the Gold Standard.** Gold standard cannot function successfully unless certain rules are observed by the countries on the gold standard. These have come to be known as the **'Rules of the Gold Standard Game."** The principal rules are:

(a) There should be no restrictions on the movement of gold from one country to another.

(b) There should be a high degree of freedom of trade so that dis-equilibrium arising out of balance of payments may be adjusted through the movement of goods. Gold should move only to cover small gaps.

(c) The economic structure of gold standard countries should be kept fairly elastic so that prices and wages respond readily to gold movements.

(d) The most important of all—the government and central banks should not offset the effects of gold movements. A country losing gold must contract its currency and allow its price-level to fall, and the one that gets it must expand its currency and allow the price level to rise. As Crowther says, "The golden rule of the gold standard is: expand credit when gold comes in; contract credit, when gold is

3. See Chapter on Central Banks.
4. See Chapter on Foreign Exchange.
5. Report, Fowler Committee, para 34.

going out."[6] In other words, there should be automatic expansion and contraction of currency and credit as gold inflows and outflows respectively.

Violation of these rules on the part of the gold standard countries will inevitably lead to the breakdown of the standard.

(ii) **Exchange Stability.** Besides the above, it is essential for the successful functioning of the gold standard that the countries concerned should maintain stable exchange rates. Exchange instability is bound to create chaos in international economic relations and render it impossible for a country to keep on the gold standard if there is a danger of its losing gold by doing so.

(iii) **No Large Capital Movements.** Another danger to the functioning of gold standard arises from international capital movements on a big scale. Short-term capital movements may be essential to remove temporary disequilibrium in the balance of payments. But large scale capital movements may result in economic, social and political disturbances. Panicky outflow of capital or gold is inimical to the smooth working of the gold standard.

Absence of the above conditions in the inter-war period (1919–1939) led to the breakdown of the gold standard.

Causes of the Break-down of the Gold Standard

The gold standard broke down in country after country soon after its rehabilitation during the post-1914–18 war decade. There were several reasons for this development:

(i) Gold was very unevenly distributed among the countries in the inter-war period. While the U.S.A. and France came to possess the bulk of it, other countries did not have enough to maintain a monetary system based in gold.

(ii) Owing to **general political unsettlement,** a habit arose on the part of certain Continental countries to keep their funds for short periods in foreign central banks, especially in Great Britain. These funds were liable to be withdrawn at the earliest danger signal. Withdrawal of such funds from Britain on the part of France led to gold standard being suspended in 1931 in the former country. The Bank of England could not afford to lose its gold resources in large quantities at such a short notice.

(iii) International trade was not free. Some countries often imposed stringent restrictions on imports which created serious balance of payments problems for other countries. Not having enough gold to cover the gap, they threw the gold standard overboard. This specially happened during the Great Depression of early 'thirties.

(iv) International obligation in the form of reparations and war debts arose out of World War I. Since the creditor countries refused to accept payments in the form of goods and also refused to continue lending to the debtors countries, the **debts had to be cleared through gold movements.** This led to concentration of 34 per cent of the world's gold in the U.S.A., and France, the two chief creditor countries. The gold left with the other countries was not enough to enable them to maintain gold standard successfully.

(v) The **gold-receiving countries did not "play the game of the gold standard".** They (especially the U.S.A.) did not allow this gold to have any effect on their price levels. **The gold was "sterilised" or made ineffective.** Had prices risen in these countries, imports would have been encouraged and exports discouraged and an unfavourable balance of trade would have led to movement of gold in the reverse direction. Since this was not allowed to happen, the gold standard failed to work automatically.

(vi) Gold standard failed also because the **economic structure of the countries concerned had beeome less and less elastic** after the World War of 1914–18. This was due to several reasons: The enormous growth in the indebtedness of governments and local authorities resulted in a mass of interest payments fixed by contract over a long period of years. The huge expenditure in the form of payment to social services could not be easily reduced. The trade unions were now able to offer a much stronger resistance to wage cuts than before 1914. The prices of raw materials and finished goods were becoming more and more fixed by partial monopolies, cartel agreements, *etc.* The result was that prices no longer moved in the directions warranted by gold movements and equilibrium failed to be restored as of old.

(vii) Another weakness that was discovered in the gold standard in practice was that **it was always liable to collapse in a crisis.** It has often been called **a 'fair weather standard' only.**

(viii) Another objection that was frequently urged against the system was that **gold movements caused inconvenient changes in interest rates.** Deflation, for instance, may be made necessary at a time of crisis to prevent suspension of the standard. But deflation, which involves falling wages and prices, may prove a cause of serious trouble. Wage cuts are resisted by trade unions, and falling prices increase the burden of fixed payments which the government or the people may have to make. Moreover, falling prices discourage enterprise and create unemployment.

(ix) A large volume of short-term capital was moving for safety from one financial centre to another. Big flows of this hot money necessitated large gold movements which the slender gold

6. Crowther, G.—*An Outline of Money,* 1950, p. 304.

reserves of the countries could not maintain. Hence, gold standard was given up.

Thus, it was that country after country abandoned the Gold Standard in the inter-war period.

Future of Gold Standard

It is unlikely that, after the experiences of the inter-war period, gold standard would be established in the conventional sense by any country of the world. Gold standard worked more or less automatically under the pre-1914 conditions of trade and finance. The experience of inter-war period, however, showed that the gold standard required quite a fair degree of management and still greater degree of co-operation of the gold standard countries for its smooth working. "The gold standard will work if every nation is content to march in step with every other." Unless the rules of the gold standard are observed, it cannot function successfully. Also, the rigidities of the economic system stand in the way of proper adjustment of price levels and costs necessary for its successful working.

The International Monetary Fund, which was set up, after the Second World War, is supposed to achieve all the advantages of a gold standard without its disadvantages by international co-operation. Gold still plays a role but not such a dominant role as it did under the gold standard. We shall discuss the I.M.F. (International Monetary Fund) in a later chapter,[7] where the position of gold in the present international monetary system will be indicated. Thus we can confidently assert that the gold standard of the old type has no future.

PAPER CURRENCY STANDARD

In modern times, metallic money is supplemented or replaced by paper money altogether. Paper money has been very useful. It economises the use of precious metals. It is convenient to carry and easy to store. Its value can be kept stable by properly controlling its issue. It is of great fiscal advantage to the government. A government can tide over a period of difficulty by the issue of paper money. Hence, it has largely replaced coins.

In early times, when notes were introduced, they were backed by an exactly equal amount in gold or silver kept in reserve by the issuing authority. Such notes could be exchanged for coins whenever needed and did nothing more than represent coins. They were called **representative paper money.** American gold certificates (Greenbacks) were of this type. This practice was very expensive and is no more current now.

Paper money is not wholly backed by specie (*i.e.*, precious metal) now. Only proportional reserves are maintained and a good deal of the paper money rests on people's confidence in the word of the issuing authority, be it the Government or the Central Bank of the country. Such a currency is called **fiduciary issue** (*i.e.*, depending on trust or confidence). The total notes in circulation in India at the end of March 1982 amounted to Rs 14,752 crores nearly. This amount was backed by nearly Rs. 226 crores worth of gold, supplemented by foreign securities and securities of the Government of India. Thus, currency is of a fiduciary issue.

Paper money can be convertible or inconvertible. If the issuing authority promises to convert notes into standard money on demand it is called **'convertible paper money.'** But sometimes after an over-issue of paper money in an emergency like war, the authority feels unable to convert its notes into coins. Then it breaks its promise of converting notes into standard money and thereby makes the money **'inconvertible'** or **fiat money** (money by order). When the link with metal is broken, there is a tendency to over-issue paper money. Its value then depreciates. Prices shoot up, which results in suffering for the people with fixed incomes.

Indian notes are convertible into the standard money of the country—rupees—as and when desired by holders. But it should be clearly noted that the rupee coins in India were themselves only token coins. The Indian rupee was called a note printed on silver and later nickel. Even these rupee coins of nickel are also no longer in circulation One-rupee notes are not legally convertible into rupee coins—they are treated as rupees. They are issued by the Government of India while all other notes are issued by the Reserve Bank of India.

Advantages of Paper Money

Paper money has got several advantages and disadvantages. The following advantages can be mentioned:

(i) **Economical.** Paper money practically costs nothing to the Government. Currency notes, therefore, are the cheapest media of exchange. If a country uses paper money, it need not spend anything on the purchase of gold or silver for minting coins. The loss which a country suffers from the wear and tear of metallic money is also avoided.

(ii) **Convenient.** Paper money is the most convenient form of money. A large amount can be carried conveniently in the pocket without anybody knowing it. It is very risky to carry on one's person Rs. 5,000 in coins, but not in notes. It possesses, in a very large measure, the quality of portability which a money material should have. In a very small bulk it can contain a very large value. Think of a currency note of Rs. 10,000.

(iii) **Homogeneous.** One essential quality in money is that it must be exactly of the same type. Even among the coins there are good and bad coins.

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But currency notes are all exactly similar. It is, therefore, a very suitable medium of exchange.

(iv) **Stability.** The value of paper money can be kept stable by properly regulating its issue. That is why there are many advocates of **'managed' paper currency.**

(v) **Elasticity.** Paper money is absolutely elastic. Its quantity can be increased or decreased at the will of the currency authority. Thus, paper money can better meet the requirements of trade and industry.

(vi) **Cheap Remittance.** Money in the form of currency notes can be cheaply remitted from one place to another in an insured cover.

(vii) **Advantageous to Banks.** Paper money is of very **great advantage to the banks.** They can keep their cash reserves against liabilities in this form, for currency notes are full legal tender.

(viii) **Fiscal advantages to the Government** of the paper currency are undoubtedly very great, especially in times of national emergencies like a war. A modern war cannot be prosecuted by taxes or loans alone. All governments have to resort to the printing press. In recent years in India there has been a high degree of inflation. We must remember, however, that by this means our Government has been able to spend hundreds of crores of rupees on various ambitious programmes of economic development. Hence, within limits the issue of paper money comes very handy to the government at the time of dire need.

Disadvantages of Paper Money

(i) Paper money is of **no value outside the country of issue.** Gold and silver coins are accepted even by foreigners, as they have got some intrinsic value.

(ii) Paper currency may result in instability of foreign exchange rates when the domestic prices and external prices do not move in harmony.

(iii) **There is a possibility of damage to paper.** Fire may burn it; if the place is flooded, it is gone; it may also be eaten up by white ants.

(iv) A serious drawback in paper currency is the ease with which it can be issued. There is always a **danger of its over-issue** when the Government is in financial difficulties. The temptation is too great to be resisted. Once this course is adopted, however, it gathers momentum and leads to further note-printing, and this goes on till the paper currency loses all value. This happened in various countries in recent times: in Russia (1917), in Germany (1919), in China (1944), and so on.

An over-issue of notes, in other words 'inflation', brings many evils in its train. Some of them are:

(a) Prices rise steeply. As a result, labourers and people with fixed incomes suffer greatly. In fact, the whole public feels the pinch.

(b) The indirect result of the excessive rise in prices is a fall in exports and a rise in imports. This leads to the export of gold from the country, which is not a desirable thing. Its balance of payments becomes unfavourable.

(c) The rise in prices also leads to a fall in the external value of the home currency. The rate of exchange falls. More home currency will have to be paid to buy units of foreign currencies.

Conclusion. Really, paper money, if it is issued and regulated carefully, is without any disadvantage. All countries issue paper currency, and, in normal times, they do not suffer from it in any manner. Only when it is over-issued, it becomes a great danger and a curse. It may cause grave discontent among the masses. When paper money is over-issued, there is inflation and prices rise. It hits hard several important sections of the people like workers and fixed-incomists. The people might lose confidence in the currency and it might become useless. Such a situation arose in many European countries during and after World War I, and later more recently in China.

Principles of Note-Issue

In the issue of notes, two conflicting aims have to be reconciled. On the one hand, the note issue must be elastic. The circulation should expand and contract in accordance with the requirements of trade. On the other hand, the confidence in the notes must be preserved by maintaining its convertibility. The first is the principle of elasticity, and the second is that of security. This requires a proper regulation of note-issue.

Currency Principle vs. **Banking Principle.** On the eve of the passing of the Bank Charter Act in England in 1844, there was a keen controversy as to what should be the right principle of note-issue. There were two opposing schools of thought, one advocating what is known as the Currency Principle and the other the Banking Principle.

The advocates of the **Currency Principle** insisted on full metallic backing (*i.e.*, 100% reserve). For every note issued, there must be kept in the currency chest coins of the same value. In their opinion, the currency note was merely a convenient economical substitute for metallic money. Naturally, the paper currency under this system was absolutely safe, but it lacked elasticity.

Those who advocated the Banking Principle were in favour of leaving the business of note-issue entirely to the discretion of the banks. This would enable them to vary the amount of currency in response to the legitimate needs of trade and industry. Any excess of note-issue would automatically come back to the banks by being presented for cash payments. They held that the banks in their own interest would maintain adequate reserves to honour these notes. No reserve requirements need

be laid down by law. In their opinion, the banks could be safely relied upon to regulate the note-issue properly. The Banking Principle undoubtedly made the note-issue elastic, but it lacked security.

We thus find that the Currency Principle provides security but lacks elasticity, whereas the Banking Principle ensures elasticity but is wanting in security. A sound system of note-issue, however, must provide both elasticity and security. Hence, all countries have evolved systems each of which represents a compromise between these two principles.

Systems of Note-Issue

As mentioned above, there was at one time a controversy whether notes should be issued on the **currency principle** (*i.e.*, 100 per cent reserve) or the **banking principle,** leaving the question of paper currency reserve entirely to the discretion of the banks of issue. We may repeat that the Currency Principle provides safety but lacks elasticity, whereas the Banking Principle ensures elasticity but is wanting in security. A sound system of note-issue, however, must have both **elasticity** and **safety.** Hence, all countries have evolved systems each of which represents a compromise between these two principles. Among these we may mention:

(a) **Maximum Fiduciary Issue**
(b) **Fixed Fiduciary Principle** or **Partial Deposit System.**
(c) **Proportional Reserve System.**
(d) **Minimum Reserve System.**

Maximum Fiduciary Issue. Under this system, the government fixes a maximum amount of paper currency that the central bank can issue without backing of metallic money. This maximum is subject to revision from time to time. This may, however, result in inflation when a needy government may raise the maximum to finance an excess of expenditure. Such a system was introduced by many countries including England since 1939.

Fixed Fiduciary System. In Great Britain, the Fixed Fiduciary System was embodied in the Bank Charter Act of 1844 as amended subsequently. Under this system, a given quantity of notes can be issued by the central bank without keeping any metallic reserves. This portion could be covered only by Government securities. This is called the **fiduciary limit.** Notes issued in excess of fiduciary limit must be covered pound for pound by gold.

This method was attacked from time to time as lacking in elasticity. It, however, acted as a brake on the over-expansion of currency. In abnormal circumstances, the fiduciary limit could be raised by amending the Act. In 1928 the Treasury was given power to increase the fiduciary limit beyond the legal ceiling. This gave some elasticity to the system. It was, however, objected that the raising of the fiduciary limit was always interpreted as a sign of weakness. Thus, it was held that elasticity was imparted but there was loss of confidence. In spite of criticism, the system has survived owing, mainly perhaps, to the force of tradition. Japan and Norway, in fact, have introduced this system.

Proportional Reserve System. This system has been adopted on the European continent. France keeping 35 per cent and Germany 40 per cent reserve. With some modifications it has also been followed by the Federal Reserve System of the U.S.A. "The essential feature of this method, which has now spread over a large part of the world," says De Kock, "is the provision of a proportional metallic reserve against the note circulation (25, 30, 33-1/3, 40 per cent), the remainder of the notes to be covered by trade bills and Government securities, with the further provision that, subject to certain conditions and penalties, the reserve ratio may be allowed to drop below the legal minimum." The banks generally keep a 'cushion' above the legal minimum for fear of breaking the law.

However, it should be borne in mind that the central bank reserve is not merely intended as a cover for notes issued. "The amount of international currency a country needs does not depend at all closely on the amount of its domestic currency and credit; it depends on its liability to suffer fluctuations in the balance of external payments." And what is kept as 'cover' is not available for external settlements.

This system is more elastic than the Fixed Fiduciary Principle. If the bank obtains, say, Rs. 40 worth of gold, it can issue Rs. 100 worth of notes under the Proportional Reserve System, but only Rs. 40 worth of notes under the Fixed Fiduciary Principle, once it has exhausted the fiduciary limit. The element of safety, however, is less under this method of issuing notes.

Some people think that if the State issues notes, as was done in India until the Reserve Bank of India took over this function, the note-issue can be better controlled. But, in times of emergencies, the notes will be over-issued, whether the State does it directly or indirectly through its influence over the central bank. In fact, note-issue by a central bank is slightly better from this point of view, since there may be some resistance by the central bank to the proposals of the government to use the method of printing additional notes for its finance.

So far as India is concerned, the Reserve Bank of India has the monopoly of note-issue. For this purpose, the Reserve Bank, like some other central banks (*e.g.*, the Bank of England), maintains a separate department called the **Issue Department.** The assets of this department are kept distinct from those of the other department of the Bank, the Banking Department.

Till 1956, the Reserve Bank of India issued notes on the basis of the proportional reserve system. The assets of the Issue Department consisted of silver, rupee coins, Government of India (rupee) securities, gold coins, gold bullion, or **foreign sterling** securities, provided that the amount of gold coin, gold bullion and foreign securities must be at least 40 per cent of the total reserve. With the sanction of the Central Government, this 40 per cent limit could be reduced for limited periods on payment of a specified tax on the deficiency. Thus, the system adopted in India was a compromise between the two systems discussed above.

Fixed Minimum Reserve System. However, in 1956, the proportional reserve system was replaced by the **Fixed Minimum Reserve System** in India. A minimum holding of foreign securities worth Rs. 400 crores including gold worth Rs. 115 crores was prescribed. In 1957, it was cut down to Rs. 200 crores including gold worth Rs. 115 crores. This drastic reduction was necessitated by the rapid depletion of foreign exchange reserves due to adverse balance of payments. Under this system of note issue, paper currency in India has now become practically inconvertible.

ESSENTIALS OF A SOUND CURRENCY SYSTEM

Broadly speaking, a sound currency system must fulfil the following conditions:—

(i) It must maintain a reasonable stability of prices in the country. This means that its internal value (or purchasing power in terms of goods and services in the country concerned) must not fluctuate too violently. As we shall see later, this involves regulation of the amount of money in circulation to suit the requirements of trade and industry in the country.

(ii) A sound currency system must maintain stability of the external value of the currency. This means that its purchasing power over goods and services in foreign countries, through its command over a definite amount of foreign currency, should remain constant. This is the problem of foreign exchange, which we shall tackle in a later chapter.[8]

(iii) The system must be economical. A costly medium of exchange is a national waste. It is unnecessary. That is why all countries use mostly paper money.

(iv) The currency must be elastic and automatic so that it expands or contracts in response to the requirements of trade and industry.

(v) The currency system must be simple so that an average man can understand it. A complicated system cannot inspire public confidence.

PAPER GOLD STANDARD OR THE SDR STANDARD

The IMF was an improvement on the gold standard. The IMF had all the merits of the gold standard minus its demerits. It ensured exchange stability without the country having to undergo the expense of maintaining a costly currency system. Under the IMF system, exchange parities were fixed in gold but it was unnecessary to keep large gold reserves for currency purposes. Besides gold stocks and current output were utterly inadequate to meet the requirements of ever-expanding volume of international trade, thus giving rise to the serious problem of international liquidity (This problem has been considered at length in Chapter 59). The IMF sought to provide multilaterism. The IMF quota facilitated foreign exchange transactions and there was no need to export gold to meet a trade deficit. It also facilitated convertibility of currencies and provided adequate and convenient currency reserve for the use of member countries.

However, fast changing circumstances necessitated changes in the I.M.F. system. In September 1967, the Board of Governors approved a plan for a new type of international asset known as the S.D. Rs (Special Drawing Rights). They have been called "Paper Gold Standard". Under the Scheme, the I.M.F. is empowered to allocate to various member countries Special Drawing Rights (SDR's) on a specified basis, which in effect amounts to raising the limit to which a member country can draw from the IMF in time of need. Besides, the SDR's supplement gold dollars and pounds sterling most countries now use as monetary reserves. They can be used unconditionally by the participating countries to meet their liabilities and they are not backed by gold. They are meant to be used by the Central banks of the Fund's member countries. With the SDR's, the Central banks can buy whatever currencies they need for settling their balance of payments deficits. The resources of the new scheme are not a pool of currencies but simply the obligation of participating members to accept the SDR's for settlement of payments between them. Thus, SDR's serve as an international money as good as other reserve currencies.

But a nicely and diligently built up system of exchange stability by the I.M.F. collapsed like a house of cards. This was caused by the dollar crisis created by the adverse American balance of payments.

Among the measures taken by the American administration, there was one which delinked dollar from gold. The delinking of dollar from gold knocked out the very foundation of the IMF.

In January 1975, the IMF abolished the official price of gold and SDR's have instead become the basis of the present international monetary standard. The SDR's are not convertible into gold; that is why alternatively the present standard may also be referred to as Paper Gold Standard.

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50 THEORY OF MONEY AND PRICES

In the theory of money, we are concerned with the determination of the value of money which has an inverse relationship with the general price level. There are two main questions concerning the value of money, *viz.*, (a) how changes in the value of money (or prices) are measured and (b) how the value of money is determined, *i.e.*, the factors governing price fluctuations.

We first take up the measurement of the changes in the value of money which is done by means of index numbers.

INDEX NUMBERS

Meaning

In the world, as we see there are numerous commodities being offered for sale. Prices of all these commodities do not always move together. It is quite possible that while prices of some commodities are rising, those of other commodities may be falling. Even if all the prices are moving together, the rate of change of some prices may be faster than that of others, *i.e.*, some prices may be rising or falling faster than others. In order to introduce an element of uniformity, the concept of general price level is used, which, in a sense, is the average of price changes of diverse commodities. This is done by means of index numbers.

Index numbers are devices for measuring the differences in the magnitude of a group of related variables. An index number of prices is then a number which indicates the price level at any given date as compared with the level of prices at some standard date called the base.

Preparation of Index Numbers

The following are the various steps in the construction of such an index number:—

(i) **Choice of the base year.** The first step is to choose a year to serve as the base year, *i.e.*, the year with reference to which the price changes in other years are expressed as percentages. Care must be exercised in its selection. It should be an average year, neither a year of boom nor of depression. Sometimes an average (of prices) of a number of years is taken to serve as the base.

(ii) **Selection of commodities.** The second step is to select commodities the prices of which have to be taken to represent the general price-level. The commodities should be really representative and should be sufficiently large in number. The selection of commodities also depends on the object with which the index is prepared. For instance, if the object is to study how the cost of living of working class has been affected by price changes, we select those commodities which figure in the consumption of the working class.

(iii) **Price lists are then taken for each commodity.** It is better to have an average of wholesale prices of the same commodity from a number of representative markets. These prices are taken for the base year (or years) and also for the subsequent years, the index number for which we want to construct. Retail prices are better because it is the retail prices which consumers actually pay. But retail prices are not taken because they differ widely from locality to locality.

(iv) The next step is to **represent the price of each commodity for the base year as 100 and the price of the same commodity for the subsequent year as a percentage of the price for the base year.** For instance, if the price of wheat in the base year is Rs. 70 per quintal and is called 100, a price of Rs. 154 in the subsequent year should be called 220 and so on in the case of all the commodities taken and all the years.

(v) The final step is to strike the average of the numbers thus obtained with reference to each year. The average for the base year will of course come to 100. The other average will be higher or lower than

Commodities	*Base year (1970) Price*	*Base year Index*	*Current year (1983) Price*	*Current year Index*
1. Wheat	Rs. 70 (per quintal)	100	Rs. 154	220
2. Sugar	Rs. 2.40 (per kg.)	100	Rs. 4.80	200
3. Milk	Rs. 1.50 (per litre)	100	Rs. 3.75	250
4. Cloth	Rs. 2.00 (per metre)	100	Rs. 8.00	400
5. Kerosene Oil	50 paise (per litre)	100	Rs. 2.00	400
Average	$\frac{500}{5} = 100$			$\frac{1470}{5} = 294$

100 according as the general price-level has risen or fallen.

The above table illustrates how index numbers are constructed. (Figures are imaginary).

According to this table, there was a rise of 194 per cent in general prices in 1983, as compared with 1970. This means that in 1983, as compared with 1970, the value of money in India (on the basis of the above figures) had fallen by about 66 per cent.

Weighted Index Numbers. The type of index number constructed above is called an unweighted index number. Here every commodity is given the same importance. But actually to a consumer a small rise in the price of a particular commodity may mean a greater disadvantage than a big rise in another commodity which is not so important in his household expenditure. This fact is specially to be taken into account when we are constructing what is called the 'cost of living index number,' *i.e.*, the one for measuring changes in the cost of living of a particular class of people.

Suppose the above articles represent goods consumed by a particular class of people, and we want to know how the war affected their cost of living. All these articles are not of the same importance to these consumers. To show their relative importance, we can assign a **"weight"** to each commodity by multiplying its index number by a certain figure indicating the degree of its importance. Such a figure is usually based on the proportion of money spent on particular commodities in a typical family budget.

The following table illustrates how a weighted index number is constructed. The same figures are taken as in the previous illustration:

Thus, we have given 3 times importance to wheat as compared with sugar, kerosene and milk and four times to cloth.

The cost of living on this basis has not risen as much as indicated by the unweighted index number, if that was regarded as a cost of living index number. These figures, however, are only by way of illustration. Actually the same index could not be employed to measure changes in the general level of prices and changes in the cost of living. Moreover, the commodities taken to measure changes in the cost of living of different classes will not all be the same. It will depend upon what commodities figure in their scheme of consumption.

We have only chosen a few commodities. Actually a large number of commodities is chosen. For instance, the oldest series of index numbers in India was the one constructed by the Commercial Intelligence Department of the Government of India. It included 28 exported and imported articles. The series was unweighted and took 1873 as the base

Commodities	*Base year (1970) Price*	*Base Year Index*	*Current Year (1983) Price*	*Current Year Index*
1. Wheat	Rs. 70 (per quintal)	100×4	Rs. 154	$220 \times 3 = 660$
2. Sugar	Rs. 2.40 (per kg.)	100×1	Rs. 4.80	$200 \times 1 = 200$
3. Milk	Rs. 1.50 (per litre)	100×1	Rs. 3.75	$250 \times 1 = 250$
4. Cloth	Rs. 2.00 (per metre)	100×3	Rs. 8.00	$400 \times 4 = 1600$
5. Kerosene oil	50 paise (per litre)	100×1	Re. 2.00	$400 \times 1 = 400$
Average		$\frac{1000}{10} = 100$		$\frac{3110}{10} = 311$

year. At present the most important index number of wholesale prices is compiled and issued by the office of Economic Adviser to Government of India.

Weighting can be indirectly introduced by taking prices of more than one variety of a commodity, *e.g.*, 3 varieties of wheat, 2 of cloth.

About 20 different cost of living index numbers are now published in India from various important urban centres.

Uses of Index Numbers

Measuring Changes in Price Level. The method of index numbers is used for measuring changes in the price-level. This is essential for maintaining price stability. Price stability is conducive to the maintenance of economic activity at the desired level.

Measuring Other Economic Changes. We can measure any quantitative change in addition to changes in the value of money and the cost of living. There may be index numbers of wages, imports, exports, industrial activity, employment, change in areas under cultivation, change in population, *etc.* These measurements indicate social and economic trends and help in framing policies with respect to them.

Adjusting Wages and Prices. An index number of cost of living can guide us in the adjustment of wages to changing prices.

Exchange Stability. Index number of wholesale prices can guide the currency authority not only in stabilizing price-levels but also in stabilizing foreign exchange.

Comparing Economic Conditions. We can compare, with the help of index numbers, economic conditions of a class of people at two different periods.

Comparing Purchasing Power of Two Currencies. Index numbers can also be used to compare the purchasing power of two currencies and to fix the purchasing power parity.

Equitable Discharge of Debts. Index numbers can be used as a basis for an equitable discharge of contracts, *i.e.*, borrowing and lending. When prices rise, the creditor is a loser, for the same amount returned to him has less purchasing power. It should be more just to ensure that the creditor gets back the same purchasing power. If that is so, then the amount of the principal should be increased in proportion to the increase in prices. Similarly, when the prices fall, the debtor should be asked to pay correspondingly less, otherwise the burden of the debt in terms of commodities and services will be increased in proportion to the fall in prices.

Limitations

Index numbers are thus very useful, nay their preparation is essential for modern governments otherwise all the economic policies will be a leap in the dark. But it is necessary to recognise that the index numbers suffer from certain limitations:

(i) Index numbers are just approximations. They cannot be taken as infallible guides. Their data are open to question and they lead to different interpretations.

(ii) International comparisons are difficult, if not impossible, on account of the different bases, different sets of commodities or difference in their quality or quantity.

(iii) Comparisons between different times are also not easy. Over long periods, some popular commodities are replaced by others. Entirely new commodities come to figure in consumption, or the commodity may be vastly different from what it used to be. Think of a modern railway engine and one of the early ones. Ford car 1983 is a different commodity from the 1940 Ford.

(iv) Index numbers only measure changes in the **sectional price-levels.** An index, therefore, prepared for one particular purpose, may not be useful for another. An index number that helps us to study the economic conditions of mill-hands or railway coolies will be useless for a study of the conditions of college professors. An entirely different set of commodities will have to be selected. Different people use different things and hold different assets. Therefore, different classes of people are affected differently by a given change in the price-level. Hence, the same index number cannot throw light on the effects of a price change on all sections of society.

(v) One set of weights may yield quite a different result from another, and weighting is all arbitrary.

As Coulborn observes, "No general price-level is, in fact, compiled in this way because the practical difficulties of collecting the various prices and assessing weights strictly appropriate to the base year, and approximately relevant to the subsequent ones, prove to be difficulties which are insuperable in practice."

THEORIES OF MONEY AND PRICES

Value of Money: Its Meaning

The term 'value of money' has been variously used. Thus, it may mean (i) its command over a definite weight and fineness of gold or silver, as is the case under gold and silver standards respectively, or (ii) the units of foreign currency that it will purchase (e.g., £1 = Rs. 15.55 as on January 17 1983. or (iii) its command over goods and services with a country, i.e., the internal purchasing power of money. When we use the term "the value of money" without qualification, we mean it in the third sense.

The value of money, then, is the quantity of goods and services in general that will be exchanged for a

unit of money. In other words, the value of money is its purchasing power, *i.e.*, the quantity of goods and services that a unit of money can purchase.

It should be noted that the value of money, or its purchasing power, has a definite, though inverse, relation with the general level of prices in a country. When general price-level rises, the value of money falls and conversely, when general price-level falls, the value of money rises.

There are three principal approaches to monetary analysis:

(1) The Quantity-Velocity Approach or Cash Transaction Approach/ Friedman's Restatement.
(2) The Cash Balances Approach.
(3) The Income-Expenditure Approach.

The first two, *viz.*, quantity-velocity approach and the cash balances approach are grouped together as the quantity theories of money. The income-expenditure theory is generally considered the modern theory. We shall now discuss these theories one by one.

QUANTITY THEORIES OF MONEY

The Quantity-Velocity or Cash Transactions Approach

Till recently, the economists believed that the major cause of fluctuations in the general level of prices was to be found in the changes in the quantity of money. Some economists still hold this view to be correct, though with many qualifications. However, most economists today regard the quantity theory of money as theoretically unsound and practically misleading. Quantity of money includes cash (M) and its velocity (V). The velocity of circulation depends upon the frequency of transactions, the volume of trade, the nature of business conditions (whether boom or slump), the level of prices (inflation or deflation), facilities for borrowing and lending, *etc.*

Statement of the Theory. Basically, the quantity theory of money states that **other things remaining constant,** changes in general price level are to be explained with reference to changes in the quantity of money in circulation so that an increase in the quantity of money leads to a rise in the price level, while a contraction in the quantity of money will lead to a fall in general price level. In an extreme version of the theory, it is asserted that, other things remaining the same, the value of money falls **proportionately** with a given increase in the quantity of money. Conversely, the value of money rises **proportionately** with a given decrease in the quantity of money. In other words, the changes in the general price level, other things remaining the same, are **directly proportional** to changes in money supply. Double the quantity of money and the price level will be doubled.

Qualifications. In the milder as well as the stronger version of the theory, we use the phrase "other things remaining the same." Now what is meant by this phrase. It means that there should be no change in the following factors while the quantity of money changes:—

(1) **Velocity of circulation of money.** Velocity or rapidity of circulation of money means the number of times a money unit changes hands. If, for instance, during a given period, a five-rupee note changes hands five times, then the quantity of money in this case will be Rs. 25 and not Rs. 5.

(2) The use of **credit instruments** as money. If there is an increase (or decrease) in the use of credit instruments, such as cheques, book credit, *etc.*, it should be regarded as an increase (or decrease) in the quantity of money in circulation. Similar is the case as regards the velocity of circulation of credit instruments.

(3) **Barter transactions.** If some exchanges are done without the use of money, they should either be excluded altogether or be regarded as an increase in the quantity of money (supply) or decrease in the quantity of transactions (or demand for money).

(4) Finally, the **volume of transactions** must remain constant. This means that the work to be done by money, or the transactions to be performed, must remain the same. Not only the amount of goods exchanged, but also the number of times goods change hands (rapidity of circulation of goods) must also remain constant.

In a word, other things being equal, the value of money varies inversely with its quantity and directly with the volume of goods and services in existence.

Equation of Exchange. Professor Irving Fisher has expressed the relationship between the quantity of money and its value in the form of a formula, which he calls the equation of exchange. This is:—

$$P = \frac{MV + M'V'}{T}$$

Here P = Price level, or P = the value of money;
T = Transactions to be performed by money;
M = Metallic money; M′ = credit money;
V = Velocity of metallic money; and V′ = velocity of credit money.

This formula equates the supply of money to the demand for it. Price-level multiplied by the transactions gives the total value of transactions which means demand for money (PT). This is equal to the supply of money which consists of cash and credit instruments with their velocities of circulation ($MV + M'V'$).

$$\text{Thus } PT = MV + M'V'$$

$$P = \frac{MV + M'V'}{T}$$

Professor Fisher contends that, in the short per-

iod, T, V, V′ remain constant. The proportion of M′ to M also remains constant. Therefore, P varies directly with M. In other words, I/P (value of money) varies inversely with M or quantity of money in circulation.

Why do "other things (T, V, V′ and proportion of M′ to M) remain constant? Professor Fisher holds that:

Transactions or amount of work to be done by money remains constant in the short period, because in the short period, population does not change, production per head of population does not change, percentage of consumption by producers does not change, percentage of exchange by barter does not change and the rapidity of circulation of goods does not change. Methods of production and habits of the people in this connection are practically fixed. Thus, the demand for money remains constant.

As regards the supply side, rapidity of circulating of money and credit depends upon custom and business habits of the people. The proportion of M′ to M depends upon the policy of the banks. These things also do not change appreciably in the short period. Hence, we can say that the value of money varies inversely with its quantity.

Critical Evaluation of the Quantity Theory

The Quantity Theory has been widely criticised. It is a static theory, whereas the real world is dynamic where changes are constantly taking place. With the qualification "other things remaining the same" it is a useless truism. It is an over-simplified version. The real trouble is that 'other things' seldom remain the same. They change not only in the long period but also in a comparatively short period. Population, amount of business transacted per head of the population, velocity of circulation, policy as regards the proportion of credit to cash all are subject to change and changes in them are constantly taking place.

Thus, many factors, other than the quantity of money, may bring about a change in the price level, and hence the value of money, *e.g.*, change in the volume of trade, improvement in transport facilities, gold movements, extension of banking and credit facilities, *etc.* All such factors can bring about changes in the price level. Hence, exclusive emphasis on the quantity of money is not proper.

Process Not Spelt Out. The quantity theory is said to be only a short-hand expression and does not fully explain the whole process by which a change in the quantity of money brings about a change in the price level or the value of money.

Money Not Merely a Medium of Exchange. Fisher's theory regards money as merely a medium of exchange which must be exchanged for goods. But money may be wanted for its own sake to be held as idle cash balances. It is also a store of value and may be wanted for speculative purposes.

Not Independent Variables. Moreover, these factors are not independent variables as Fisher assumes. For instance, a change in M in itself may cause a change in V, and thus cause a change in P more than in proportion to a change in M. After the First Great War, the German mark was depreciating fast and no one was willing to hold it. The rapidity of circulation money (V) increased progressively and out of all proportion to the increase in the note-issue (M). Similarly, a change in M may cause, and does cause, frequently a change in T, and a change in P may lead to a change in M. An increase in the supply of money may raise prices, increase profits and stimulate production beyond the profitable level thus again depressing prices. Moreover, higher price-level may necessitate the issue of more money to carry on transactions. Thus, high price-level may be the cause rather than the effect of the increase in the quantity of money.

M and V Differ. M refers to a point of time and V to a period of time, and it is wrong to multiply two different things, *e.g.*, MV.

Wrong Assumptions. Basically, for the quantity theory to be true, the following two assumptions must hold:—

(i) An increase in money supply leads to an increase in spending, *i.e.*, no part of additional money created should be kept in idle hoards.

(ii) The resulting increase in spending must face a totally inelastic supply of output.

Both the assumptions lack generality and, therefore, if either of them does not hold, the quantity theory cannot be accepted as a valid explanation of the changes in price level. Let us take the first assumption. Under this assumption, the entire increase in the quantity of money must express itself in the form of increased spending. If spending does not increase, there is no question of a change in prices or output. But is it valid to make such an assumption? Obviously, there is no such direct link between the increase in the quantity of money and the increase in the volume of total spending. No one is going to increase his expenditure simply because the government is printing more notes or the banks are more liberal in their lending policies.

This is not to say, however, that changes in the quantity of money have no influence whatsoever on the volume of aggregate spending. As we shall show below, changes in the quantity of money are sometimes capable of inducing changes in the volume of aggregate spending. What we are denying is the assertion that there exists a direct, simple, and more or less a proportional relation between variation in money supply and variations in the level of total spending.

Coming to the second assumption, this will be

valid only under conditions of full employment. It is only then that we can assume a totally inelastic supply of output, for all the available resources are being already fully utilised. In conditions of less than full employment, the supply curve of output will be elastic. Now, if we assume that aggregate spending increases with an increase in the quantity of money, it does not follow that prices must necessarily rise. If the supply curve of output is fairly elastic, it is more likely that the effect of an increase in spending will be more to raise production rather than raise prices. Of course, at full employment, every further increase in spending must lead to an increase in prices as output is inelastic in supply. Since full employment cannot be assumed to be a normal feature, we cannot accept the quantity theory of money as a valid, general explanation of changes in the price level in the short run.

Not useful. Apart from challenging the basic assumptions underlying the theory, it is criticised on the score of its utility. It is not regarded as particularly helpful either as an analytical tool or as a guide to policy. It is pointed out that neither the volume of transactions nor the velocity of money is stable.

Merits of the Theory. Although the quantity theory of money is widely criticised by modern economists and is rejected as an adequate explanation of the value of money, it has some merits too:

(i) It is historically true for whenever there has been over-issue of currency, prices have invariably risen. The currency history of every country has demonstrated it.

(ii) The practical utility of the theory is evident from the fact that whenever the monetary authorities seek to control prices they do so by regulating and controlling the issue of currency. The manipulation of the bank rate and open market operations of the central bank are based on this assumption.

(iii) Although every change in the quantity of money may not produce a proportionate change in the price level, yet the theory seems to be broadly true.

Cash Balances Approach: Cambridge Equation

As already mentioned, there are two main lines of approach to the problem of relationship between the quantity of money and its value (or the price-level). This has given rise to two types of quantity theories. One is the Quantity Theory of Money proper, called the Transactions Approach theory which we have discussed above and which is represented by Fisher's Equation. This approach has been more popular in the U.S.A. The other approach, known as the cash-balances type, which has been more popular in Europe, especially in England, is represented by the Cambridge Equation.

The latter is an improvement on the former Quantity Equation in the sense that it is based on the National Income approach and takes into account the concept of liquidity, both of which form part of Keynesian Economics.

As mentioned above, the Cambridge Equation represents what has been called the cash-balances approach to the value of money.[1] It simply says that the value of money depends on demand for cash-balances and the supply thereof **at any given time.** We have discussed in the preceding sections the determinants of both demand and supply of money. Here we want to draw the attention of the student to one point on the demand side. The demand for money does not merely depend on the physcial quantity of resources or of the goods and services which are sought to be exchanged, but it largely depends on the **period of time** which the transactions are intended to cover. Take the case of a consumer of wheat. Is it necessary for him to purchase his whole year's requirement of wheat at once or, what comes to the same thing, keep sufficient liquid cash to buy the whole year's requirement? No, it is unnecessary. Few consumers will do that unless they happen to be foolish. A consumer may decide to buy wheat from month to month. It will then be necessary for him to keep cash equal to 1/12 of his total requirement of wheat for the year. Similarly, he will keep liquid funds just enough to enable him to purchase his requirements of other goods and services for a certain **period only** and not for the **whole year.**

If the members of a community are in the habit of keeping cash to cover their purchases over a long period, obviously their demand for cash will be greater. Only a fraction of the whole income is kept in cash, the rest is invested. The amount of cash held should not be too much, because to keep cash locked up idly means a loss, besides being a danger, although a large cash balance makes business smooth and easy. Nor should the amount of cash held be too small, because it may be risky from the business point of view. As Marshall observes, "A man fixes the appropriate fraction (of his income) after balancing one against another the advantages of a further ready command and the disadvantages of putting more of his resources into a form in which they yield him no direct income or other benefit."[2] An individual has thus to keep only a fraction of his income in titles to legal tender (*i.e.*, liquid cash) to carry on his business smoothly and to guard against emergencies. Let this fraction be denoted by k.

The equation is usually put in the form:

$$M = kpR$$

where M is the quantity of money and is the same as M of Fisher's Equation of Exchange. R is the real

1. Robertson, D.H.—*Money*, 1932, Ch. II and Appendix A.
2. Marshall, A.—*Money, Credit and Commerce*, I, iv. 3.

national income, *i.e.*, it is the sum total of goods and services **finally** brought to the market and sold for money, *e.g.*, cotton is not part of R but a suit of clothes made by a tailor is a part of R. Similarly, wheat is not included in R, but bread is.

p is the average price-level of the real national income. That is, it is the average of price of clothes, food, shelter and other goods, and services consumed by the public.

Thus, pR is the monetary national income,

Now, a proportion of the monetary national income is held by the community in cash. This proportion is k and represents the desire of the public to have liquid resources. This is called the liquidity factor for buying it. If all money circulated only once, then the amount of money required would be the same as the monetary national income. If money circulated twice in a year, then obviously half pR will be required to purchase the national product, *i.e.*, to create the monetary national income which is shown as pR above. The number of times money circulates for buying the national production in a year is V_1, *i.e.*, income-velocity of circulation of money, k is the proportion of the monetary national income which the community desires to hold in cash. pR then is the demand for money for purchasing the national product. This must be equal to the money supply.

M × velocity of circulation of money = M × V.

$$M = kpR \quad \text{where } k = \frac{I}{V_1}$$

We have seen that in the Fisher's Equation of Exchange in its simplest form

$$M = \frac{PT}{VT} = \frac{I}{V_1} \times PT$$

By Cambridge Equation

$$M = kpR$$

$$\text{Now as } k = \frac{I}{V_1}$$

$$\therefore M = \frac{I}{V_1} PR$$

Differences between Fisher Equation and Cambridge Equation. The differences between the two equations are as follows:—

(i) T in the Fisher Equation is the sum total of all transactions, whereas R is only the final product which comes to the market. For example, Fisher will include in T the transactions of production and sale of cotton, sale of yarn, sale of cloth and finally brought to the market, *e.g.*, tailored clothes.

(ii) Similarly, P in the Fisher equation is the average of the price-level of each good and service at each stage of production and includes the average price-level of all transactions. p in the Cambridge Equation is the price-level of only the goods finally brought to the market. They may tend to move up and down in the same direction, but are not the same.

(iii) The meaning of V and V_1, *i.e.*, velocity of circulation, also differs between them. In the Fisher Equation, it takes the form VT, *i.e.*, Transactions Velocity of Circulation. It represents the number of times a unit of money circulates for performing all the transactions taking place in the economy in a year. V_1, on the other hand, is only Income Velocity of circulation and represents the number of times a unit of money circulates for buying the final product.

Superiority of Cambridge Equation. The Cambridge equation, which in fact was a later form of the Quantity Theory, sought to remove some of the shortcomings of the latter and took several steps on the way to the modern theory of money and prices. The old theory did not provide any explanation of the velocity or circulation of money. Instead of explaining the frequency with which money changed hands, the Cambridge equation tried to explain why money rested (instead of moving) in people's hands. This was an important shift in the emphasis. An attempt was now made to analyse the motives on account of which people wished to hold money.

Similarly, there was a switch away from the analysis of causes of changes in the supply of money to an analysis of the causes of changes in the demand for it.

Another important new element in the Cambridge version was that instead of being concerned with the total number of transactions, it was concerned only with the transactions relating to final goods only, *i.e.*, the level of income. It thus concentrated attention on a concept which occupies an important place in the whole of modern economic theory.

The Cambridge equation went some way towards explaining both short and long-run changes in the level of income. But the theory did not satisfactorily separate price changes and changes in the level of output both of which are included in the changes in the level of money income.

Criticism. However, the Cambridge version is an over-simplified explanation of the theory of money and prices. It ignores the speculative demand to hold money. Thus, it loses sight of an important fact that the quantity of money may change without corresponding changes in the level of money income or that money income may change without corresponding changes in the quantity of money.

Also, ignoring the speculative demand meant that the theories of interest were not linked with the theories of level of income through demand for money. This is an important omission.

Thus, the Cambridge version is an inadequate guide to the understanding of the mechanics of price changes. Its misleading simplicity obscures more than it reveals.

In the words of A.C.L. Day, "Although the

Cambridge version of the Quantity Theory represented a big advance on the Fisher version, it is not in itself an adequate monetary theory. Its weakness is that it is too simple to deal adequately with the complexities of the economic system." [3] Its weakness lies in this that it does not pay attention to the fact that effective demand for goods and services does not necessarily vary at all closely with the quantity of money. In order to understand variations in effective demand, we must analyse the causes of changes in expenditure.

The second weakness is that it pays inadequate attention to the fact that the price level does not necessarily change in proportion to the changes in effective demand.

Thus, we can say that the Cambridge Equation lays stress on the national income, its price-level and the liquidity of the public. Keynes uses the concept of national income in the modern Keynesian analysis and it is with the fluctuations of the price-level of final goods and output with which the modern trade cycle economists and governments are concerned. The concept of liquidity, slightly modified, is used by Keynes for his theory of rate of interest and investment, as a determinant of total production.

But, for Keynes, there are other factors more important on which total national income depends. These are the profitability of investment and thriftiness. The Cambridge Equation does not take note of these and is, therefore, not used for analysis these days.

Friedman's Restatement of the Quantity Theory of Money

Milton Friedman, a leading luminary of what has come to be known as the **Chicago School** of economists has put forward his own quantity theory of money. In his restatement of the theory, he restored the quantity theory of money almost to its original position. That is, he resuscitated and rehabilitated the Fisher formula of the quantity theory of money, but in a more sophisticated manner. In view of the importance of his restatement of the theory and the influence his theory exercised on economic thinking and policies it deserves a fuller treatment which has been attempted in a subsequent section.

FRIEDMAN'S RESTATEMENT OF THE QUANTITY THEORY OF MONEY

Special Features

Milton Friedman's restatement of the quantity theory of money has already become a modern classic. He says that his quantity theory of money is essentially a theory of *demand for money*. Hence his analysis in this connection is primarily concerned with exploring and explaining the nature of the demand function for money! its objective is to discover the relatively more significant variables which determine the demand for money and to find out whether this function is stable or not. The traditional quantity theory of money was based on the assumption of a constant velocity of money.

Friedman draws a distinction between velocity and velocity function. He says that while velocity of money may and does fluctuate, the velocity functions is stable. Thus the modern quantity theorists like Friedman draw a distinction between *demand* for money and the *demand function* for money or between velocity of money and velocity-of-money function. The velocity-of-money function is highly stable much more stable than the Keynesian consumption function. Friedman therefore prefers economic analysis in terms of changes in the money supply and a money multiplier derived from velocity relationship rather than use autonomous expenditures and the multiplier which emerges from the consumption function as emphasised in the Keynesian theory.

The modern quantity of money theorists regard the money demand function not only stable but also of vital importance in determining the variables which are very important for the economy as a whole e.g. the level of national income, employment and price level.

Friedman is of the opinion that the demand function and the money supply function are independent of each other. That is, there are some important variables which determine the supply of money but which do not affect the demand for money. The notion of stable demand function is useful in order to trace out the effect of changes in supply, but it is useful only if supply is influenced by at least some factors other than those regarded as affecting demand. Thus the modern quantity theorists would reject the notion that the supply of money expands or contracts according to the needs of trade.

We can also say that the modern quantity theorists reject the concept of the Keynesian liquidity trap or infinite elasticity of demand for money. Friedman makes out a strong case for the quantity theory if the elasticity of demand for money is approximately zero.

Without going into how Friedman derives or expounds his version of the Quantity Theory, it may suffice to give his restatement of the Quantity Theory of Money; this is set out below:

$$Y = M, V(e_b, r_e, \frac{1}{P}, \frac{dP}{dt}, W\frac{p}{y}, u)$$

Friedman's above equation is equivalent to the Equation of Exchange of the traditional Quantity Theory, *i.e.* $M = PY$, however, with the difference

3. Day, A.C.L.—*Outline of Monetary Economics*, 1960. p. 257.

that Y is the real income in the traditional equation instead of the money income that Y represents in Friedman's equation given above.

It is very necessary to bear in mind that the traditional quantity theory is only superficially equivalent to Friedman's restatement of it. The fundamental difference between the two approaches is that Friedman has substituted the velocity function, $V(r_b, r_e, \frac{1}{p}\cdot\frac{dp}{dt}, W, \frac{y}{p}, V)$, in place of the velocity constant V, or its reciprocal, k, in the traditional statement of the Quantity Theory. This is by no means a mere formal difference: it is instead a very significant *difference of substance.*

Criticism

Friedman's Restatement of the Quantity Theory of Money gives a highly formalised model of the determination of the demand for money. But one can pick a number of holes or gaps and inadequacies which are mentioned below:—

(i) Friedman's derivation of money demand takes explicit note of the *asset* demand for money only, but the transactions demand for money has not been adequately analysed. This means that he has practically ignored the function of money as a means of payment. It provides no analysis of the cost of transactions and how these costs could be relevant in the determination of the demand for money and for alternative forms of assets.

Also, as Miles Fleming puts it, "The nature of the services provided by money balances is not enquired into closely" and this makes Friedman's analysis rather too abstract.

(ii) In Friedman's analysis is implied that the different forms of assets mentioned by him are close substitutes of one another. How this substitutability will influence the demand for money and alternative assets is not clearly spelt out.

(iii) Friedman's model has been given in a static form. It takes no notice of the time lags involved and implications for the demand of money. The nature of the time lags will determine the values of the variables from period to period. Time lags in the adjustment of the values and structure of assets in the wealth-holders portfolios to the desired levels and structure are also important in the determination of demand for money. But Friedman's model does not take note of these factors.

(iv) Empirical investigations have not borne out Friedman's assertion that his money demand function and the monetary multiplier based on it are much more stable than the Keynesian consumption function and the Keynesian multiplier based thereon.

(v) An important implication of Friedman's model is that there is a very regular relationship between the supply of money, the money income and prices. This proposition is however challenged by certain studies.

(vi) Friedman's definition of money is too broad. It includes even time deposits which cannot be regarded as ready money

Conclusion

In sum, the Friedmanites think that the economy is like a "black box" and it is difficult to know or show precisely what processes are taking place in this 'black box,' which connects changes in M to changes in GNP. They would like to hold that whatever the processes are, the interest elasticity of demand for money is very low or zero. A study covering the period 1897–1958 showed that the quantity of money was a better predicator of consumption than was investment. In other words, it was found that the quantity of money furnished a better explanation of the GNP than the multiplier did except during the Great Depression of the 30's (thirties).

Thus, we come to the conclusion that the quantity theorists of today seem to have established a broad relationship between the GNP, consumption and money supply. It may be that this relationship does not hold uniformly satisfactorily throughout the various periods of economic history. They hold that money supply is the principal factor leading to fluctuations in income, though causal influences work slowly and variably. One implication of the contemporary quantity theory of money is that the monetary authorities should not use monetary policy for the "'fine-tuning' of the economy when one is trying to deal with short-term fluctuations in economic activity"[4].

KEYNESIAN THEORY OF MONEY AND PRICES: THE INCOME APPROACH

The modern theorists, especially the Keynesians, do not deny that changes in money supply can bring about changes in the price-level. However, what they do deny is that there is a simple, direct and easily predictable relation between the quantity of money and the level of prices.

The modern theory emphasises that **the value of money or the price level is in fact a consequence of the total incomes rather than of the quantity of money.** The real cause of fluctuations in prices is to be found in fluctuations in the level of aggregate income or expenditure. Therefore, changes in the quantity of money can bring about changes in the level of prices only if they change aggregate spending in relation to the supply of output. Unless spending increases, there can be no increase in demand for goods. And if demand for goods does not increase, the question of price rise does not arise. However, even if aggregate spending does increase, prices may still not rise if the supply curve of output is fairly elastic. Therefore, the effects of a change in quantity of money on the price-level depend on the following factors:—

4. Stonier, A.W., and Hague, D.C., *A Textbook of Economic Theory*, 4th Edition, p. 567.

(i) effect of changes in money supply on the level of aggregate demand or spending;
(ii) relation between aggregate spending and the volume of production.

As regards the volume of spending, it depends on the following:—

(i) The consumption function.
(ii) The investment demand schedule.
(iii) Liquidity preference schedule.
(iv) Supply of money.

An increase in the quantity of money in the Keynesian system will lower the rate of interest. But if the rate of interest is already very low, further increases in the quantity of money will not be able to reduce it still further. And we know that a fall in the rate of interest encourages new investment. Thus, if the rate of interest is reduced as a result of an increase in money supply, the rate of investment will rise and the increase in investment will lead to increase in income via the multiplier. If this happens, there will be an increase in aggregate spending. But if the rate of interest cannot be reduced any further by increases in the quantity of money, *i.e.*, we are operating along the perfectly elastic part of the liquidity preference curve, the rate of investment will not increase; and if investment does not increase, income and spending cannot increase.

Thus, there are circumstances when an increase in the quantity of money may fail to increase the level of aggregate spending. If this is the case, prices will not rise at all, even though the quantity of money has increased.

Even if aggregate spending does increase because of an increase in the rate of investment, it is not necessary that prices must rise at all, much less proportionately to the increase in money supply. If we have less than full employment and there are idle capital and labour resources, the supply curve of output will be fairly elastic, and increases in aggregate spending will lead to an increase in production without much increase in prices. On the other hand, if there is full employment, an increase in aggregate spending will largely result in an increase in the level of prices father than output.

To sum up. In the modern theory, money has an important place. But the relationship between changes in money supply and changes in prices is much more indirect and uncertain than was assumed by the quantity theory of money. It all depends on its effects on aggregate spending and the elasticity of supply of output.

Determination of the General Price Level: Keynesian View

We are now in a position to give the modern view regarding the determination of general price level. In the classical and neo-classical monetary theory, the general price level was supposed to vary directly with changes in the quantity of money, so that an increase in the quantity of money was supposed to be the cause of a rise in the price level. That view, it is now generally agreed, is a gross over-simplification of what happens in real life.

In modern theory, the general price-level is thought to be determined by the same forces which determine the level of national income and employment, *i.e.*, aggregate effective demand and aggregate supply. As we have discussed elsewhere, aggregate effective demand in a given period is the sum of the demand of the consumers for current goods and services, the demand of the government for current goods and services and net capital formation in the economy as determined by the decision of entrepreneurs. Similarly, aggregate supply of output of all sorts of goods is determined by the profit expectation of entrepreneurs.

It is quite likely that the total of effective demand (at constant prices) in a given period may not equal the aggregate supply of output (at constant prices) forthcoming. The result will be that in the process of adjustment, the real value of a given monetary effective demand will have to be cut down to be just equal to available supply of output. The mechanism of this adjustment is provided by the change in prices. If aggregate demand tends to be greater than aggregate supply, the general price level will move up, and vice versa.

Policy Significance

In conclusion, let us clearly understand the policy significance of the theories of money and prices. The quantity theory of money suggests that if prices are too high, the monetary authority should contract credit and reduce the money supply. On the other hand, when there is depression, money should be pumped into the economic system so that economic activity or investment is stimulated through the lowering of the rate of interest. The income theory, on the other hand, seeks to control prices through changes in the level of national income and expenditure. It follows that during depression, government must increase its expenditure which will raise the level of incomes and effective demand. Similarly, a business boom can be checked by reducing effective demand through taxation and reduction of government expenditure.

Post-Keynesian Developments in Theory of Money and Prices

The economists coming after Keynes have tried to fill up the gaps in the Keynesian theory and refined it. The post-Keynesian monetary economists have tried to discover and emphasise additional variables which have influence on the demand for money. As a refinement of the monetary theory, these economists have given a more elaborate and rigorous application of the capital theory to the analysis of demand for money.

In the application of capital theory to money, they have denied the Keynesian proposition that the demand for speculative money is interest elastic and the transation-cum-precautionary demand for money is interest inelastic. For instance, Baumol's *"Transactions Demand for Cash': An Inventory Theoretic Approach"* and Tobin's *"Interest Elasticity of Transactions Demand for Cash"* have put forward the view that transactions demand for money is influenced not only by the level of income but also by the rate of interest. Tobin is of the view that there is an inverse relationship between the rate of interest and the transactions demand for money. This adjustment is based on inventory-capital theory. In a well developed modern economy, with a well, organised bond market, the transactions demand for money is determined both by the level of income and the rate of interest. The number of transactions will increase if income and the rate of interest rise. The larger is the number of these transactions, the greater is the proportion of income and the rate of interest rise. The larger is the number of these transactions, the greater is the proportion of income held in the form of bonds and smaller the proportion of income kept in the form of cash balances. Thus the transactions demand for money is not a constant proportion of income held in bonds but varies with the rate of interest and is inversely related to it. Hence it is meaningless to distinguish between transactions-cum-precautionary demand for money and put the money demand function in the Keynesian form $M = M_1 + M_2 = L_1(Y) + L_2(r)$; It should be written as $M = L(y,r)$.

Tobins Portfolio Balance Approach

An important post-Keynesian development is what is known as Tobin's **Portfolio Balance Approach** to the analysis of the asset demand for money. In his paper *Liquidity Preference as "Behaviour Toward Risk"* Tobin has liberated the concept of the speculative or asset demand for money from reliance on expectations regarding future changes in the rate of interest. He has done away with unrealistic Keynesian assumption that the only alternative to holding assets in the form of cash balances is to hold single-maturity bonds. These economists hold that money as well as various forms of non-money assets can be liquid as distinguished from the Keynesian view that money is the only liquid asset, although money is perfectly liquid whereas non-money assets possess less perfect liquidity. The various assets can be arranged in a descending order of liquidity thus-money, time deposits, bills, bonds, equities and goods. The normal individuals or the risk averters tend to arrange their portfolio in such a way as to balance, at the margin, the utility of additional return against the disutility of additional uncertainty. An important implication of Tobin's theory is that the demand for money as an asset is determined by the total size of wealth and not merely by change for the rate of interest.

Patinkin's View. Another post-Keynesian development has been brought out in **Patinkin's** *Money, Interest and Prices".* Patinkin suggest that *wealth Effect* is like the *Income Effect.* Thus an increase in the wealth of an asset holder induces him to distribute the increment over all the form of assets except in the exceptional case, when a particular assets is looked upon as 'inferior'. Hence demand for money will increase if wealth increases.

Conclusion. Thus the post-Keynesian version of the demand function for money may be mentioned as

$$M = \frac{M}{P} = L(y, r, w)$$

Where m denotes demand for money, M for quantity of money, P for price level, L for functional relationship, Y for real national income r for rate of interest and w for wealth.

Neutrality and Non-Neutrality of Money

The issue of neutrality or non-neutrality of money has an important bearing on the question of effectiveness or otherwise of monetary policy. The supporters of neutrality of money say that a change in the quantity of money may generate economic fluctuations. It is held that creation of money may generate prosperity. The classical economists regarded money as neutral and a veil. It is regarded as simply a medium of exchange and not affecting output and employment in any manner. But to Keynes, it was no longer a veil. Money affects rate of interest and through it rate of investment and hence general economic activity in the country.

Money is regarded as neutral if a change in the quantity of money does not alter the real equilibrium of the economic system. That is, the relative prices, and interest rates are not affected by a change in the quantity of money.

Conditions for Neutrality

Money will be neutral under the following conditions:

(1) Existence of only one kind of money *i.e.,* either inside money (created against private debt and constituted by claims against financial institutions) or outside money (backed by foreign and government securities).

(2) Absence of money illusion (see p. 385)

(3) Absence of distribution effects.

(4) Price-Wage flexibility.

(5) Absence of open market operations.

(6) Unitary Elasticity of Expectations.