



# **Manonmaniam Sundaranar University**

## **Directorate of Distance and Continuing Education**

**Tirunelveli – 627 012. Tamil Nadu.**

### **M.A. Economics**

**(Second Year)**

### **DEVELOPMENT ECONOMICS**

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## **DEVELOPMENT ECONOMICS**

### **Course Objectives:**

- To equip with strong economic fundamental governance and the process of economic growth and development.
- To understand the alternative theory of growth.
- To understand the knowledge of planning in a mixed economy.
- Gain knowledge of structural view of development.

### **Unit – I: Economic Growth and Models**

Economic growth and development – Factors affecting economic growth – Capital, labour and technology – Growth and models – Harrod and Domar, instability of equilibrium – Neo-classical growth models – Solow, Mrs. John Robinson's growth model – Cambridge criticism of neo-classical analysis of growth.

### **Unit – II: Theories of Development**

Classical theory of development – Contribution of Adam Smith, Ricardo, Malthus; Karl Marx-development of capitalistic economy – Theory of social change, surplus value and profit – immutable laws of capitalist development – crisis in capitalism – Schumpeter and capitalistic development – Innovation – Profit and degeneration of capitalism – Structural analysis of development .

### **Unit – III: Approaches to Development**

Partial theories of growth and development – Vicious circle of poverty – Circular causation – Unlimited supply of labour – Big push, Balanced growth, Unbalanced growth, Critical minimum effort thesis – Low income equilibrium trap – Dualism – Technical, behaviour and social - Fei and Ranis model – Dependency theory of development – structural view of development.

### **Unit –IV: Allocation of Resources**

Need for investment criteria in development countries – present vs future, alternative investment criteria – cost-benefit analysis – Shadow Prices, project evaluation.

### **Unit – V: Planning and Development**

Meaning –Objectives-Need for planning –Plan Formulation and Requisites for successful Planning- Capitalistic planning and socialistic planning-Problems-Perspective and Annual Planning-Planning in a Mixed Economy

**Reference Books:**

1. The Economics of Development and Planning, M.L.Jhingan, Vrinda Publication, 2012.
2. Economic Development and Planning, Karnati Lingaiah, 1993.
3. Theories of Economics Growth and Development, Adlman.I, Stanford University Press, Stanford, 1961.
4. Handbook of Development Economics, Behrman, S. and T.N. Srinivasan, Vol3, Elsevier, Amsterdam. 1995.
5. On the Theory and Measurement of Technical Change, Brown .M, Cambridge University Press, Cambridge, 1966.
6. Handbook of Development Economics, Chenery. H. and T.N. Srinivasan, Vol 1&2, Elsevier, Amsterdam, 1989.

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## **UNIT – I**

### **ECONOMIC GROWTH AND MODELS**

#### **1.1. Introduction**

Economic growth has been defined in two ways. In the first place, economic growth is defined as sustained annual increases in an economy's real national income over a long period of time. In other words, economic growth means rising trend of net national product at constant prices. This definition has been criticized by some economists as inadequate and unsatisfactory. They argue that total national income may be increasing and yet the standard of living of the people may be falling. This can happen when the population is increasing at a faster rate than total national income.

For instance, if national income is rising by 1% per year and population is increasing at 2% per year, the standard of living of the people will tend to fall. This is so because when population is increasing more rapidly than national income, per capita income will go on falling. Per capita income will rise when the national income increases faster than population. Therefore, the second and better way of defining economic growth is to do so in terms of per capita income. According to the second view, "economic growth means the annual increase in real per capita income of a country over the long period. Thus Professor Arthur Lewis says that "economic growth means the growth of output per head of population." Since the main aim of economic growth is to raise the standards of living of the people, therefore the second way of defining economic growth which runs in terms of per capita income or output is better. Another point which is worth mentioning in regard to the definition of economic growth is that the increase in national income or more correctly increase in per capita income or output, must be a 'sustained increase' if it is to be called economic growth.

By sustained increase in per capita income we mean the upward or rising trend in per capita income over a long period of time. A mere short-period rise in per capita income, such as that occurs over a business cycle, cannot be validly called economic growth. Now, almost universally, rates of economic growth are measured both in terms of increase in overall Gross National Product (GNP) or Net National Product (NNP) and increase in per

capita income. While Gross National Product (GNP) measures the total output of goods and services which an economy is capable of producing, per capita income measures how much of real goods and services which an average person of the community will have for consumption and investment, that is, average level of living of a citizen of a country.

The two words 'growth' and 'development' were often used interchangeably in economic discussion. As soon as 'development economics' emerged as a distinct field of study after the World War II, it 'had the appearance of being a bastard child of growth economics' and, in fact, this child did not differ from what could be expected from a genuine 'son of growth economics'. But, technically speaking, they are not the same. To a layman, these two terms appear to be synonymous. However, in the 1950s and 1960s, economists drew a line of demarcation between economic growth and economic development. True enough, the concept of economic development is broader than economic growth. Development is taken to mean 'growth plus change', whereas economic growth means growth only quantitative expansion of an economy. Economic growth is, thus, a quantitative concept, while economic development is a qualitative concept. C. P. Kindleberger says that growth involves focusing on height or weight while development focuses on the change in functional capacity.

Economic growth is defined in positive terms. It is measured by the sustained increase in real, national or per capita income of a nation over time. Economic growth is usually measured in terms of an increase in real GNP or GDP over time or an increase in income per head over time. Growth is desirable as it enables a society to consume more goods and services. That is why growth is considered to be the basis of advancing real living standards or human welfare. At the same time, it is also true that growth does not necessarily lead to an increase in human welfare. Economic development is more fundamental than economic growth.

**Economic growth figure does not give us correct assessment of an economy for the following reasons:**

First, economic growth is associated with an increase in GNP/GDP per capita. But per head GNP does not, by itself, constitute or measure welfare or

success in development. This is because per capita income does not give any information about income distribution. It is observed that despite high rate of growth, some of the countries experience high incidence of poverty and unemployment.

Secondly, economic growth does not talk about the quality of life. In poor developing countries, people end themselves at low level of literacy, low standards of health and nutrition, etc. Miseries arising from lack of food and shelter do not get reflected in the concept of economic growth. Thirdly, economic growth does not deal with environmental issues. In the process of achieving higher economic growth, environmental considerations like depletion of renewable natural resources, air pollution, etc., are given little weightage. These aspects have an important bearing on the economic development of a country in the long run. Desire for higher and higher economic growth is associated with environmental damages. It is economic development that cares for environmental issues.

It is, thus, obvious that economic development involves something more than economic growth. In fact, there are certain qualitative dimensions in the process of development that are conspicuous by their absence in the growth or expansion of an economy. Economic development implies both more output and changes in the technical, institutional arrangements by which it is produced, and a change in attitudes and values. "Development concerns not only man's material needs but also improvement of the social conditions of his life. Development is, therefore, not only economic growth but growth plus change—social, cultural and institutional as well as economic. Development is, thus, not purely an economic phenomenon; it has to be conceived of as a multidimensional process.

Naturally, economic development is a value-based concept. It should include not only the acceleration of economic growth but also the reduction of inequality and eradication of poverty, increase in employment opportunities and welfare of the masses, etc. However, economic development may mean more. Economic development must encompass human development. Amartya Sen defines economic development in terms of 'entitlement' and 'capability'. Entitlement refers to the set of alternative commodity bundles that an

individual can command through the totality of rights and obligations that he or she faces.

Thus, entitlements of people generate 'capabilities'. Entitlements of people do not only depend on their incomes but also on a host of power relations in a society, the spatial distribution of resources in a society (like facilities of health care and schooling) and what individuals can accumulate from such supplied by the state. 'Capability' represents a person's freedom to achieve various functioning combinations. Thus, the notion of capability is essentially one of freedom the range of options a person has in deciding what kind of life he or she wants to pursue. Poverty, according to Amartya Sen, is a kind of 'capability deprivation'. Sen says that economic development should be interpreted as a process of expansion of the freedoms that people enjoy. Important areas of unfreedom that people face are famine and undernourishment, mass illiteracy, poor state of health of people, lack of shelter and other basic needs, economic insecurity, denial of basic civil and political liberty, etc. Through the policies of expansion of human capabilities, development processes can be initiated. That is why it is said that the basic objective of development is the process of expansion of entitlements and human capabilities. That is to say, how GNP growth is used to improve human capabilities and, in turn, how people utilise their capabilities is economic development. Amartya Sen, thus, emphasises that, instead of concentrating on GNP or GDP, development economics should take into account both entitlements and capability expansion. He argues that income does not necessarily address the nature of entitlement. Taking a cue from the Chinese famine (1958-1961) as well as the Bengal famine (1943), he emphatically demonstrated that famines, in general, were to be attributed to the entitlement failure rather than the shortage of food. Despite abundant supplies in food, people had to suffer miserably from hunger and famine in Bengal due to entitlement failure in collecting food from the market. Famine is one source of unfreedom.

## **1.2. Factors affecting economic growth**

Economic growth can be defined as a positive change in the level of goods and services produced by a country over a certain period of time. An important characteristic of economic growth is that it is never uniform or



same in all sectors of an economy. Economic growth is directly related to percentage increase in GNP of a country. In real sense, economic growth is related to increase in per capita national output or net national product of a country that remain constant or sustained for many years.

**Important factors that affect the economic growth of a country:**

**(a) Human Resource:**

The quality and quantity of available human resource can directly affect the growth of an economy. The quality of human resource is dependent on its skills, creative abilities, training, and education. If the human resource of a country is well skilled and trained then the output would also be of high quality. On the other hand, a shortage of skilled labor hampers the growth of an economy, whereas surplus of labor is of lesser significance to economic growth. Therefore, the human resources of a country should be adequate in number with required skills and abilities, so that economic growth can be achieved.

**(b) Natural Resources:**

Affect the economic growth of a country to a large extent. Natural resources involve resources that are produced by nature either on the land or beneath the land. The resources on land include plants, water resources and landscape. The natural resources of a country depend on the climatic and environmental conditions. Countries having plenty of natural resources enjoy good growth than countries with small amount of natural resources.

**(c) Capital Formation:**

Involves land, building, machinery, power, transportation, and medium of communication. Producing and acquiring all these manmade products is termed as capital formation. Capital formation increases the availability of capital per worker, which further increases capital/labor ratio. Consequently, the productivity of labor increases, which ultimately results in the increase in output and growth of the economy.

**(d) Technological Development:**

Technology involves application of scientific methods and production techniques. In other words, technology can be defined as nature and type of technical instruments used by a certain amount of labor. Technological

development helps in increasing productivity with the limited amount of resources. Countries that have worked in the field of technological development grow rapidly as compared to countries that have less focus on technological development. The selection of right technology also plays a role for the growth of an economy. On the contrary, an inappropriate technology results in high cost of production.

**(e) Social and Political Factors:**

Play a crucial role in economic growth of a country. Social factors involve customs, traditions, values and beliefs, which contribute to the growth of an economy to a considerable extent. For example, a society with conventional beliefs and superstitions resists the adoption of modern ways of living. In such a case, achieving becomes difficult. Apart from this, political factors, such as participation of government in formulating and implementing various policies, have a major part in economic growth.

**1.3. Growth and Models:**

**1.3.1. Harrod-Domar Economic Growth Model**

Harrod-Domar Model—is the direct outcome of the short-run Keynesian analysis into the long-run. A feature common to them all is that they are based on the Keynesian saving-investment analysis. This model is based on the capital factor as the crucial factor of economic growth. It concentrates on the possibility of steady growth through adjustment of supply of demand for capital. On the one hand, new investment generates income (through multiplier effect); on the other hand, it increases productive capacity (through productivity effect) of the economy by expanding its capital stock. Classical economists emphasized the productivity aspect of the investment and took for granted the income aspect. Keynes had given due attention to the problem of income generation but neglected the problem of productive capacity creation. Harrod and Domar took special care to deal with both the problems generated by investment in their models.

**Assumptions:**

- (i) A full-employment level of income already exists.
- (ii) There is no government interference in the functioning of the economy.

(iii) The model is based on the assumption of “closed economy.” In other words, government restrictions on trade and the complications caused by international trade are ruled out.

(iv) There are no lags in adjustment of variables i.e., the economic variables such as savings, investment, income, expenditure adjust them completely within the same period of time.

(v) The average propensity to save (APS) and marginal propensity to save (MPS) are equal to each other.  $APS = MPS$  or written in symbols,

$$S / Y = \Delta S / \Delta Y$$

Harrod had adopted three different concepts of growth rates:

(i) the actual growth rate,  $G$ , (ii) the warranted growth rate,  $G_w$  (iii) the natural growth rate,  $G_n$ .

### **Actual Growth Rate:**

The Actual Growth Rate is the growth rate determined by the actual rate of savings and investment in the country. In other words, it can be defined as the ratio of change in income ( $\Delta Y$ ) to the total income ( $Y$ ) in the given period. If actual growth rate is denoted by  $G$ , then

$$G = \Delta Y / Y$$

The actual growth rate ( $G$ ) is determined by saving-income ratio and capital-output ratio. Both the factors have been taken as fixed in the given period. The relationship between the actual growth rate and its determinants was expressed as:

$$GC = s \dots (1)$$

### **Warranted growth rate:**

“Warranted growth” refers to that growth rate of the economy when it is working at full capacity. It is also known as Full-capacity growth rate. This growth rate denoted by  $G_w$  is interpreted as the rate of income growth required for full utilisation of a growing stock of capital, so that entrepreneurs would be satisfied with the amount of investment actually made. Warranted growth rate ( $G_w$ ) is determined by capital-output ratio and saving- income ratio. The

relationship between the warranted growth rate and its determinants can be expressed as  $G_w = C_r = s$

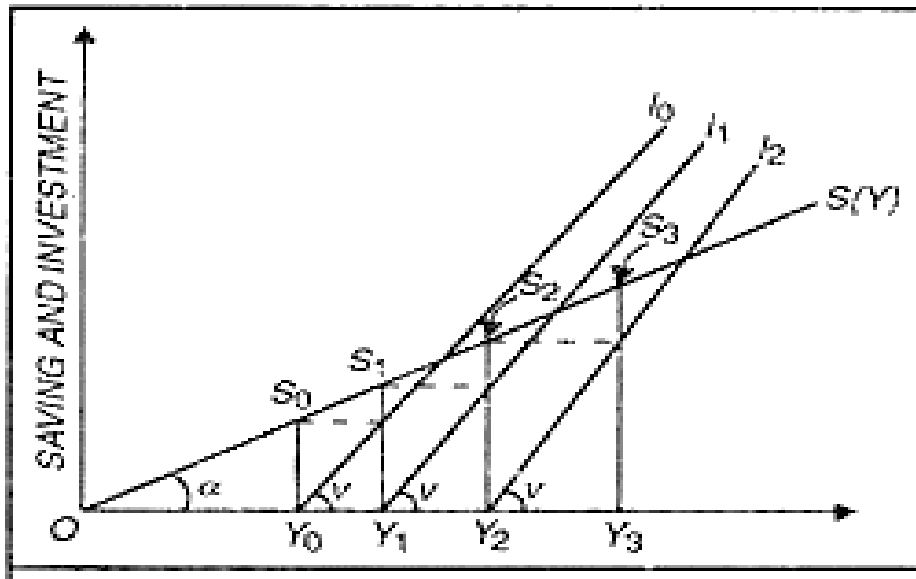
Where  $C_r$  shows the needed C to maintain the warranted growth rate and s is the saving-income ratio.

**Natural growth rate:**

$G_n$  the Natural growth rate is determined by natural conditions such as labour force, natural resources, capital equipment, technical knowledge etc. These factors place a limit beyond which expansion of output is not feasible. This limit is called Full-Employment Ceiling. This upper limit may change as the production factors grow, or as technological progress takes place. Thus, the natural growth rate is the maximum growth rate which an economy can achieve with its available natural resources. The third fundamental relation in Harrod's model showing the determinants of natural growth rate is

$$G_n = C_r \text{ is either } = \text{ or } \neq s$$

Following diagram income is shown on the horizontal axis, saving and Investment on vertical axis. The line S(Y) drawn through the origin shows the levels of saving corresponding to different levels of income. The slope of this line (tangent  $\alpha$ ) measures the average and marginal propensity to save. The slopes of lines  $Y_0I_0$ ,  $Y_1I_1$ ,  $Y_2I_2$  measure the acceleration co-efficient  $v$  which remains constant at each income level of  $Y_0$ ,  $Y_1$ , and  $Y_2$ . At the initial income level of  $Y_0$ , the saving is  $S_0Y_0$ . When this saving is invested, income rises from  $Y_0$  to  $Y_1$ . This higher level of income increases saving to  $S_1Y_1$ . When this amount of saving is reinvested, it will further raise the level of income to  $Y_2$ . The higher level of income will again raise saving to  $S_2Y_2$ . This process of rise in income, saving and investment shows the acceleration effect on the growth of output.



**Fig.1.1. Harrod Model and acceleration growth**

### 1.3.2. Instability of Equilibrium Growth:

We have stated above that the steady-state growth of the economy requires an equality between  $G$  and  $G_w$  on the one hand and  $C$  and  $C_r$  on the other. In a free-enterprise economy, these equilibrium conditions would be satisfied only rarely, if at all. Therefore, Harrod analysed the situations when these conditions are not satisfied. We analyse the situation where  $G$  is greater than  $G_w$ . Under this situation, the growth rate of income being greater than the growth rate of output, the demand for output (because of the higher level of income) would exceed the supply of output (because of the lower level of output) and the economy would experience inflation. This can be explained in another way too when  $C < C_r$ . Under this situation, the actual amount of capital falls short of the required amount of capital. This would lead to deficiency of capital, which would, in turn, adversely affect the volume of goods to be produced. Fall in the level of output would result in scarcity of goods and hence inflation. This, under this situation the economy will find itself in the quagmire of inflation.

On the other hand, when  $G$  is less than  $G_w$ , the growth rate of income would be less than the growth rate of output. In this situation, there would be excessive goods for sale, but the income would not be sufficient to purchase those goods. In Keynesian terminology, there would be deficiency of demand and consequently the economy would face the problem of deflation. This situation can also be explained when  $C$  is greater than  $C_r$ . Here the actual

amount of capital would be larger than the required amount of capital for investment. The larger amount of capital available for investment would dampen the marginal efficiency of capital in the long period. Secular decline in the marginal efficiency of capital would lead to chronic depression and unemployment. This is the state of secular stagnation.

### **1.3.3. The Domar Model:**

The main growth model of Domar bears a certain resemblance to the model of Harrod. In fact, Harrod regarded Domar's formulation as a rediscovery of his own version after a gap of seven years. Domar's theory was just an extension of Keynes' General Theory, particularly on two counts:

1. Investment has two effects:

- (a) An income-generating effect and
- (b) Productivity effect by creating capacity.

The short-run analysis governed by Keynes ignored the second effect.

2. Unemployment of labour generally attracts attention and one feels sympathy for the jobless, but unemployment of capital attracts little attention. It should be understood that unemployment of capital inhibits investment and hence reduces income. Reduction of income brings about deficiency in demand and hence unemployment. Thus the Keynesian concept of unemployment misses the root cause of the problem. Domar wanted to analyse the genesis of unemployment in a wider sense.

### **Summary of Main Points:**

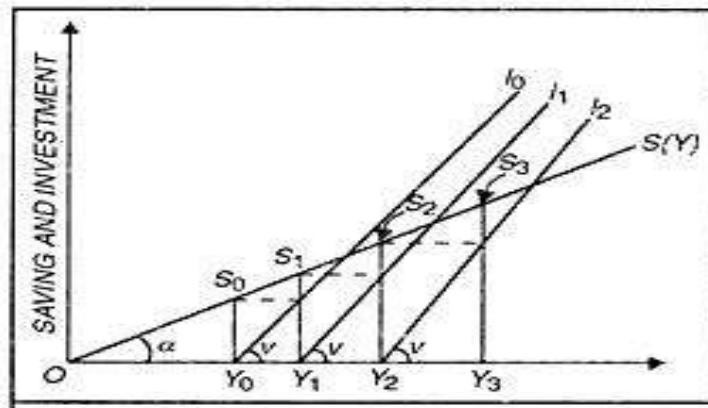
The main points of the Harrod-Domar analysis are summarised below:

1. Investment is the central variable of stable growth and it plays a double role; on the one hand, it generates income and on the other, it creates productive capacity.
2. The increased capacity arising from investment can result in greater output or greater unemployment depending on the behaviour of income
3. Conditions concerning the behaviour of income can be expressed in terms of growth rates i.e.  $G$ ,  $G_w$  and  $G_n$  and equality between the three growth rates can ensure full employment of labour and full-utilisation of capital stock.

4. These conditions, however, specify only a steady-state growth. The actual growth rate may differ from the warranted growth rate. If the actual growth rate is greater than the warranted rate of growth, the economy will experience cumulative inflation. If the actual growth rate is less than the warranted growth rate, the economy will slide towards cumulative inflation. If the actual growth rate is less than the warranted growth rate, the economy will slide towards cumulative deflation.

5. Business cycles are viewed as deviations from the path of steady growth. These deviations cannot go on working indefinitely. These are constrained by upper and lower limits, the 'full employment ceiling' acts as an upper limit and effective demand composed of autonomous investment and consumption acts as the lower limit. The actual growth rate fluctuates between these two limits.

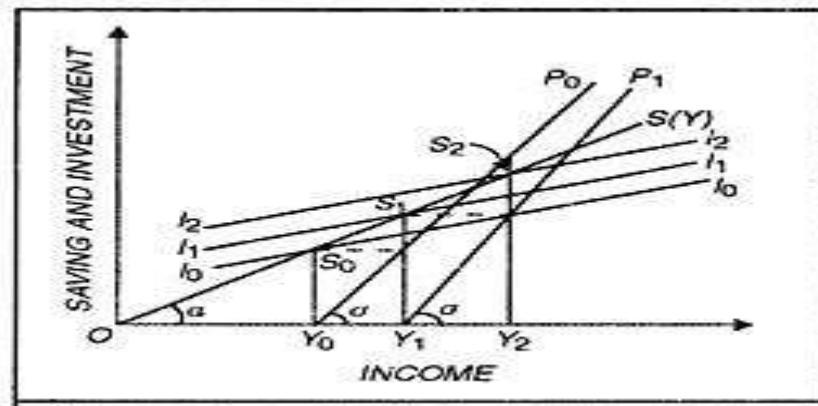
**Diagrammatic Representation:**



**Fig 1.2. Harrod Model and acceleration growth**

Refer to Figure 1.2. Where income is shown on the horizontal axis, saving and Investment on vertical axis. The line  $S(Y)$  drawn through the origin shows the levels of saving corresponding to different levels of income. The slope of this line (tangent  $\alpha$ ) measures the average and marginal propensity to save. The slopes of lines  $Y_0I_0$ ,  $Y_1I_1$ ,  $Y_2I_2$  measure the acceleration co-efficient  $v$  which remains constant at each income level of  $Y_0$ ,  $Y_1$ , and  $Y_2$ . At the initial income level of  $Y_0$ , the saving is  $S_0Y_0$ . When this saving is invested, income rises from  $Y_0$  to  $Y_1$ . This higher level of income increases saving to  $S_1Y_1$ . When this amount of saving is reinvested, it will further raise the level of income to  $Y_2$ . The higher level of income will again raise saving to  $S_2Y_2$ . This process of rise

in income, saving and investment shows the acceleration effect on the growth of output.



**Fig. 1.3. Domar Model: productivity of capital and growth**

Now we give the diagrammatic exposition of the Harrod model with the help of Figure 1.3. In this figure, income is shown on horizontal axis, saving and investment on vertical axis. The line  $S(Y)$  passing through the origin indicates the level of saving corresponding to different levels of income.  $I_0I_0$ ,  $I_1I_1$  and  $I_2I_2$  are the various levels of investment.  $Y_0P_0$  and  $Y_1P_1$  measure the productivity of capital corresponding to different levels of investment. The lines  $Y_0P_0$  and  $Y_1P_1$  are drawn parallel so as to show that productivity of capital remains unchanged. This diagram shows that the level of income is determined by the forces of saving and investment. The level of income  $Y_0$  is determined by the intersection of saving line  $S(Y)$  and the investment line  $I_0I_0$ . At the level of income  $Y_0$ , the saving is  $Y_0S_0$ . When the saving  $Y_0S_0$  is invested, it will increase the income level from  $OY_0$  to  $OY_1$ . The productive capacity will also rise correspondingly. The extent of the income increase depends upon the productivity of capital, which is measured by the slope of the line  $Y_0P_0$  ( $\alpha$ ). Higher is the level of income higher the productive capacity. Similarly, when the level of income is  $OY_1$  the level of saving is  $S_1Y_1$ . With investment of  $S_1Y_1$  income will further rise to the level  $Y_2$ . This increase in income means expansion of purchasing power of the economy. But the coefficient of capital productivity would remain constant, this being an important assumption of Domar's model.



#### 1.4. NEOCLASSICAL THEORY:

The neoclassical growth theory was developed by Robert Solow, J. E. Meade, are the two well-known contributors to the neoclassical theory of growth. This neoclassical growth theory lays stress on capital accumulation and its related decision of saving as an important determinant of economic growth. Growth model considered two factor production functions with capital and labour as determinants of output. Besides, it added exogenously determined factor, technology, to the production function.

Thus neoclassical growth model uses the following production function–

$$Y = AF(K, L) \dots (1)$$

Where, Y is Gross Domestic Product (GDP), K is the stock of capital, L is the amount of unskilled labour and A is technology. Technology shift in the production function. There are two ways in which technology parameter A is incorporated in the production function. One popular way of incorporating the technology parameter in the production function is to assume that technology is labour augmenting and accordingly the production function is written as–

$$Y = F(K, AL) \dots (2)$$

Labour-augmenting technological change implies that it increases productivity of labour. The second important way of the technology factor in the production function is to assume that technological progress augments all factors (both capital and labour in our production function) and not just augmenting labour. It is in this way that we have written the production function equation (1) above.

$$Y = AF(K, L)$$

A represents total factor productivity (that is, productivity of both factor inputs) then contribution of A to the growth in total output is called Solow residual which means that total factor productivity really measures the increase in output which is not accounted for by changes in factors, capital and labour.

Unlike the fixed proportion production function of Harrod-Domar model of economic growth, neoclassical growth model uses variable proportion production function, that is, it considers unlimited possibilities of

substitution between capital and labour in the production process. That is why it is called neoclassical growth model as the earlier neoclassical considered such a variable proportion production function.

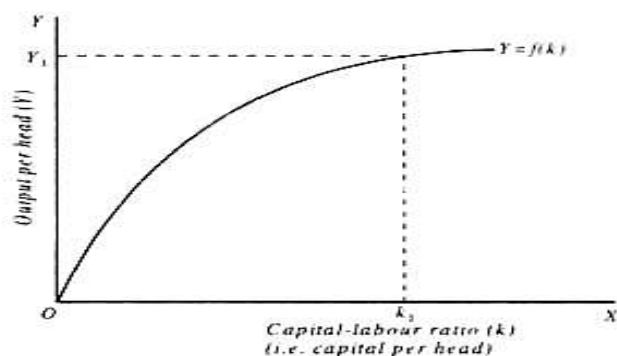
The second important departure made by neoclassical growth theory from Harrod-Domar growth model is that it assumes that planned investment and saving are always equal because of immediate adjustments in price (including interest). With these assumptions, neoclassical growth theory focuses its attention on supply side factors such as capital and technology for determining rate of economic growth of a country. Therefore, unlike Harrod-Domar growth model, it does not consider aggregate demand for goods limiting economic growth. Therefore, it is called 'classical' along with 'neo'. The growth of output in this model is achieved at least in the short run through higher rate of saving and therefore higher rate of capital formation. However, diminishing returns to capital limit economic growth in this model. Though the neoclassical growth model assumes constant returns to scale which exhibits diminishing returns to capital and labour separately.

We explain below how neoclassical growth model explains economic growth through capital accumulation (i.e., saving and investment) and how this growth process ends in steady state equilibrium. By steady 'State equilibrium for the economy we mean that growth rate of output equals growth rate of labour force and growth rate of capital (i.e.,  $\Delta Y/Y = \Delta L/L = \Delta K/K$ ) so that per capita income and per capita capital are no longer changing. Note that for income per capita and capital per worker to remain constant in this steady state equilibrium when labour force is growing implies that income and capital must be growing at the same rate as labour force. Since growth in labour force (or population) is generally denoted by letter  $n$  in this steady state equilibrium, therefore,  $\Delta Y/Y = \Delta K/K = \Delta N/N = n$ . Neoclassic growth theory explains the process of growth from any initial portion to this steady state equilibrium.

### **Neoclassical Growth Theory: Production Function and Saving:**

As stated above, neoclassical growth theory uses following production function:

$$Y = AF(K, L)$$



**Fig. 1.4. Production function relating output per head to output per head**

However, the neoclassical theory explains the growth process using the above production function in its intensive form, that is, in per capita terms. To obtain the above production function in per capita terms we divide both sides of the given production function by  $L$ , the number of labour force. Thus

$$\begin{aligned} Y/L &= AF (K, L, L/L) \\ &= AF (K/L, 1) = AF (K/L) \dots (2) \end{aligned}$$

To begin with we assume that there is no technological progress. With this assumption then equation (2) is reduced to

$$Y/L = F (K/L) \dots (3)$$

The equation (3) states that output per head ( $Y/L$ ) is a function of capital per head  $K/L$ . Writing  $y$  for  $Y/L$  and  $k$  for  $K/L$ , equation (3) can be written as

$$y = f (k) \dots (4)$$

Now, in Figure 1.4 we represent the production function (4) in per capita terms. It will be noticed from Figure 1.4 shows that as capital per capita ( $k$ ) increases output per head increases, that is, marginal product of labour is positive. The slope of the production function curve decreases as capital per head increases. This implies that marginal product of capital diminishes. That is, the increase in capital per head causes output per head to increase but at a diminishing rate. It will be seen from the Figure 1.6 that at capital-labour ratio (i. e. capital per worker) equal to  $k_1$  output per head is  $y_1$ . Similarly we can read from the production function curve:  $y = f (k)$  the output per head corresponding to any other capital per head.

## **1.5. SOLOW GROWTH MODEL:**

### **Introduction:**

Prof. Robert M. Solow made his model an alternative to Harrod-Domar model of growth. It ensures steady growth in the long run period without any pitfalls. Prof. Solow assumed that Harrod-Domar's model was based on some unrealistic assumptions like fixed factor proportions, constant capital output ratio etc. Solow has dropped these assumptions while formulating its model of long-run growth. Prof. Solow shows that by the introduction of the factors influencing economic growth, Harrod-Domar's Model can be rationalised and instability can be reduced to some extent. He has shown that if technical coefficients of production are assumed to be variable, the capital labour ratio may adjust itself to equilibrium ratio in course of time. In Harrod-Domar's model of steady growth, the economic system attains a knife-edge balance of equilibrium in growth in the long-run period. This balance is established as a result of pulls and counter pulls exerted by natural growth rate ( $G_n$ ) (which depends on the increase in labour force in the absence of technical changes) and warranted growth rate ( $G_w$ ) (which depends on the saving and investment habits of household and firms). However, the key parameter of Solow's model is the substitutability between capital and labour. Prof. Solow demonstrates in his model that, "this fundamental opposition of warranted and natural rates turns out in the end to flow from the crucial assumption that production takes place under conditions of fixed proportions."

The knife edge balance established under Harrodian steady growth path can be destroyed by a slight change in key parameters. Prof. Solow retains the assumptions of constant rate of reproduction and constant saving ratio etc. and shows that substitutability between capital and labour can bring equality between warranted growth rate ( $G_w$ ) and natural growth rate ( $G_n$ ) and economy moves on the equilibrium path of growth. In other words, according to Prof. Solow, the delicate balance between  $G_w$  and  $G_n$  depends upon the crucial assumption of fixed proportions in production. The knife edge equilibrium between  $G_w$  and  $G_n$  will disappear if this assumption is removed. Solow has provided solution to twin problems of disequilibrium between  $G_w$  and  $G_n$  and the instability of capitalist system.

In short, Prof. Solow has tried to build a model of economic growth by removing the basic assumptions of fixed proportions of the Harrod-Domar model. By removing this assumption, according to Prof. Solow, Harrodian path of steady growth can be freed from instability. In this way, this model admits the possibility of factor substitution.

**Assumptions:**

Solow's model of long run growth is based on the following assumptions:

1. The production takes place according to the linear homogeneous production function of first degree of the form

$$Y = F (K, L)$$

Y = Output

K = Capital Stock

L = Supply of labour force

The above function is neo-classic in nature. There is constant returns to scale based on capital and labour substitutability and diminishing marginal productivities. The constant returns to scale means if all inputs are changed proportionately, the output will also change proportionately. The production function can be given as  $aY = F (aK, al)$

2. The relationship between the behaviour of savings and investment in relation to changes in output. It implies that saving is the constant fraction of the level of output. In this way, Solow adopts the Harrodian assumption that investment is in direct and rigid proportion to income.

In symbolic terms, it can be expressed as follows:

$$I = dk/ dt = sY$$

Where

S—Propensity to save.

K—Capital Stock, so that investment I is equal

3. The growth rate of labour force is exogenously determined. It grows at an exponential rate given by

$$L = L_0 e^{nt}$$

Where L—Total available supply of labour.

N—Constant relative rate at which labour force grows.

4. There is full employment in the economy.

5. The two factors of production are capital and labour and they are paid according to their physical productivities.
6. Labour and capital are substitutable for each other.
7. Investment is not of depreciation and replacement charges.
8. Technical progress does not influence the productivity and efficiency of labour.
9. There is flexible system of price-wage interest.
10. Available capital stock is fully utilized.

Following these above assumptions, Prof. Solow tries to show that with variable technical co-efficient, capital labour ratio will tend to adjust itself through time towards the direction of equilibrium ratio. If the initial ratio of capital labour ratio is more, capital and output will grow more slowly than labour force and vice-versa. To achieve sustained growth, it is necessary that the investment should increase at such a rate that capital and labour grow proportionately i.e. capital labour ratio is maintained.

Solow's model of long-run growth can be explained in two ways:

A. Non-Mathematical Explanation.

B. Mathematical Explanation.

**A. Non-Mathematical Explanation:**

According to Prof. Solow, for attaining long run growth, let us assume that capital and labour both increase but capital increases at a faster rate than labour so that the capital labour ratio is high. As the capital labour ratio increases, the output per worker declines and as a result national income falls. The savings of the community decline and in turn investment and capital also decrease. The process of decline continues till the growth of capital becomes equal to the growth rate of labour. Consequently, capital labour ratio and capital output ratio remain constant and this ratio is popularly known as "Equilibrium Ratio".

Prof. Solow has assumed technical coefficients of production to be variable, so that the capital labour ratio may adjust itself to equilibrium ratio. If the capital labour ratio is larger than equilibrium ratio, than that of the growth of capital and output capital would be lesser than labour force. At some time, the two ratios would be equal to each other. In other words, this

is the steady growth, according to Prof. Solow as there is the steady growth there is a tendency to the equilibrium path. It must be noted here that the capital-labour ratio may be either higher or lower.

Like other economies, Prof. Solow also considers that the most important feature of an underdeveloped economy is dual economy. This economy consists of two sectors-capital sector or industrial sector and labour sector or agricultural sector. In industrial sector, the rate of accumulation of capital is more than rate of absorption of labour. With the help of variable technical coefficients many employment opportunities can be created. In agricultural sector, real wages and productivity per worker is low. To achieve sustained growth, the capital labour ratio must be high and underdeveloped economies must follow Prof. Solow to attain the steady growth. This model also exhibits the possibility of multiple equilibrium positions. The position of unstable equilibrium will arise when the rate of growth is not equal to the capital labour ratio. There are other two stable equilibrium points with high capital labour ratio and the other with low capital labour ratio. If the growth process starts with high capital labour ratio, then the development variables will move in forward direction with faster speed and the entire system will grow with high rate of growth. On the other hand, if the growth process starts with low capital labour ratio then the development variables will move in forward direction with lesser speed.

To conclude the discussion, it is said that high capital labour ratio or capital intension is very beneficial for the development and growth of capitalist sector and on the contrary, low capital-labour ratio or labour-intensive technique is beneficial for the growth of labour sector.

### **B. Mathematical Explanation:**

This model assumes the production of a single composite commodity in the economy. Its rate of production is  $Y(t)$  which represents the real income of the community. A part of the output is consumed and the rest is saved and invested somewhere. The proportion of output saved is denoted by  $s$ . Therefore, the rate of saving would be  $sY(t)$ . The capital stock of the community is denoted by  $K(t)$ . The rate of increase in capital stock is given by  $dk/dt$  and it gives net investment.

Since investment is equal to saving so we have following identity:

$$K = sY \dots (1)$$

Since output is produced by capital and labour, so the production function is given by

$$Y = F (K, L) \dots (2)$$

Putting the value of Y from (2) in (1) we get

$$S = s F (K, L) \dots (3)$$

Where

L is total employment

F is functional relationship

Equation (3) represents the supply side of the system. Now we are to include demand side too. As a result of exogenous population growth, the labour force is assumed to grow at a constant rate relative to n. Thus,

$$L (t) = L_0 e^{nt} \dots (4)$$

Where

L—Available supply of labour

Putting the value of L in equation (3) we get

$$K = sF (K, L_0 e^{nt}) \dots (5)$$

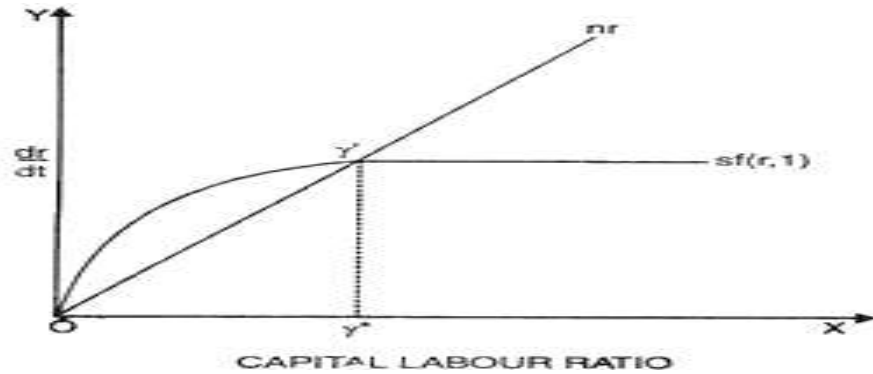
The right hand of the equation (4) shows the rate of growth of labour force from period 0 to t or it can be regarded as supply curve for labour.

“It says that the exponentially growing labour force is offered for employment completely in elastically. The labour supply curve is a vertical line, which shifts to the right in time as the labour force grows. Then the real wage rate adjusts so that all available labour is employed and the marginal productivity equation determines the wage rate which will actually rule.” If the time path of capital stock and of labour force is known, the corresponding time path of real output can be computed from the production function. Thus, the time path of real wage rate is calculated by marginal productivity equation.

The process of growth has been explained by Prof. Solow as, “At any moment of time the available labour supply is given by (4) and available stock of capital is also a datum. Since the real return to factors will adjust to bring about full employment of labour and capital we can use the production function (2) to find the current rate of output. Then the propensity to save



tells us how much net output will be saved and invested. Hence, we know the net accumulation of capital during the current period. Added to the already accumulated stock this gives us the capital available for the next period and the whole process can be repeated.”



**Fig.1.5. Solow Model**

In diagram 1.5, the line passing through origin is  $nr$ . The total productivity curve is the function of  $SF(r, 1)$  and this curve is convex to upward. The implication is that to make the output positive it must be necessary that input must also be positive i.e. diminishing marginal productivity of capital. At the point, of intersection i.e.  $nr = sf(r, 1)$  and  $r' = 0$  when  $r' = 0$  then capital labour ratio corresponds to point  $r^*$  is established. Now capital and labour will grow proportionately. Since Prof. Solow consider constant returns to scale, real output will grow at the same rate of  $n$  and output per head of labour, force will remain constant.

**The merits of Prof. Solow’s model are under-mentioned:**

- (i) Being a pioneer of neo-classical model, Solow retains the main features of Harrod-Domar model like homogeneous capital, a proportional saving function and a given growth rate in the labour forces.
- (ii) By introducing the possibility of substitution between labour and capital, he gives the growth process and adjustability and gives more realistic touch.
- (iii) He considers a continuous production function in analysing the process of growth.
- (iv) Prof. Solow demonstrates the steady-state growth paths.
- (v) He successfully shunted aside all the difficulties and rigidities of modern Keynesian income analysis.

**Short Comings of the Model:**

**1. No Study of the Problem of Balance between  $G$  and  $G_w$ :**

Solow takes up only the problem of balance between warranted growth ( $G_w$ ) and natural growth ( $G_n$ ) but it does not take into account the problem of balance between warranted growth and the actual growth ( $G$  and  $G_w$ ).

## **2. Absence of Investment Function:**

There is an absence of investment function in Solow's model and once it is introduced, the problem of instability will immediately reappear in the model as in the case of Harrodian model of growth.

## **3. Flexibility of Factor Price may bring Certain Problems:**

Prof. Solow assumed the flexibility of factor prices but it may bring certain difficulties in the path of steady growth.

For example, the rate of interest may be prevented from falling below a certain minimum level and this may in turn, prevent the capital output ratio from rising to a level necessary for sustained growth.

## **4. Unrealistic Assumptions:**

Solow's model is based on the unrealistic assumption that capital is homogeneous and malleable. But capital goods are highly heterogeneous and may create the problem of aggregation. In short, it is not easy to arrive at the path of steady growth when there are varieties of capital goods in the market.

## **5. No Study of Technical Progress:**

This model has left the study of technological progress. He has merely treated it as an exogenous factor in the growth process. He neglects the problem of inducing technical progress through the process of learning, investment and capital accumulation.

## **6. Ignores the Composition of Capital Stock:**

Another defect of Prof. Solow's model is that it totally ignores the problem of composition of capital stock and assumes capital as a homogeneous factor which is unrealistic in the dynamic world of today. Prof. Kaldor has forged a link between the two by making learning a function of investment.

## **1.6. JOHN ROBINSON'S GROWTH MODEL**

'The Accumulation of Capital' in 1956. Joan Robinson's model clearly takes the problem of population growth in a developing economy and analyses the influence of population on the role of capital accumulation and growth of output. In words of Prof. Mathew, The relation between distribution and growth in this model arises partly from the mutual interdependence of the rate of profit and the pace of capital accumulation and partly from the effect of distribution of income on the proportion of income saved.

**The two fundamental propositions of the model are as under:**

1. The capital formation depends on the manner of distribution of income.
2. The rate at which labour is utilized depends upon the supply of capital and that of labour.

**Assumptions:**

1. Labour and capital are the only productive factors. It implies that the national output is the result of combined efforts of these two factors of production.
2. The economy is assumed to be closed i.e., there is no foreign trade.
3. Total wage bill is the product of real wage rate and number of workers.
4. Total income is divided between capital and labour as these are the two factors of production.
5. The production is not affected by the technological changes i.e. there is no progress in technology.
6. Total profit is the product of profit rate and amount of capital invested.
7. There is constancy in price level.
8. Wage earners spend all of their wage income on consumption, while profit takers save and invest all of their profit income.
9. Capital and labour are combined in a fixed proportion for a given output.
10. The national income is the sum of wage bill and total profits.

11. There is no scarcity of labour and entrepreneurs can employ as much labour as they wish.

12. Entrepreneurs consume nothing but save and invest their entire income for capital formation. If they have no profits, there is no accumulation and if they do not accumulate, they have no profits.

**Open Model:**

In an open economy, the conditions for the steady growth and conditions for rising rate of capital accumulation will be discussed. According to Mrs. Joan Robinson, national income is the sum of the total wage bill and total profit. Total wage bill is the real wage multiplied by the number of workers and total profits are equal to profit rate multiplied by the amount of capital.

This relationship can be expressed as under:

$$PY = WN + \pi PK$$

Where P — Average Price level.

Y— Net national income.

W — Net money wage rate.

N— Amount of labour employed.

K— Amount of capital invested.

$\pi$  — Rate of profit.

$$S = \pi K$$

I is simply increase in real capital *i.e.*

$$I = \Delta K$$

Substituting the value S and I in saving investment function,

$$S = I$$

$$\pi K = \Delta K$$

$$\pi = \frac{\Delta K}{K}$$

The above relation implies that profit rate is equal to growth rate of real capital. Now

For the economy to be in equilibrium, the growth rate of capital must be equal to rate of profit. A higher rate of profit is achieved when

$$\pi = \frac{\Delta K}{K}$$

$$\pi = \frac{\rho - \frac{W}{P}}{\theta}$$

For the economy to be in equilibrium, the growth rate of capital must be equal to rate of profit. A higher rate of profit is achieved when

$$\left( \rho - \frac{W}{P} \right) > \theta$$

The above equation illustrates that the rate of growth of capital is capable of increasing if the net returns to capital rise in greater proportion than the capital-labour ratio and vice-versa. In other words, lower rate of profit always affects the supply of capital adversely which in turn widens the gap between supply of capital and labour. The main feature of the model is that the rate of growth of capital is dependent on profit rate.

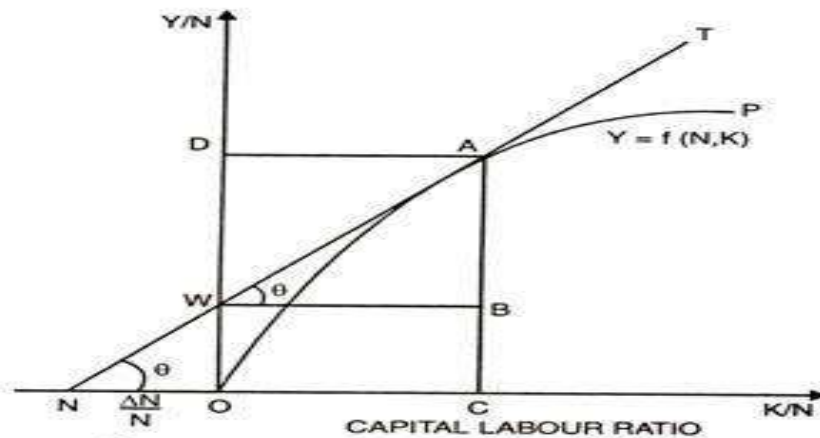
### **Closed Model:**

In a closed economy, the concepts of Golden age and Platinum age are to be discussed. In simple words, Golden age is a situation of smooth steady growth with full employment arising out of the equality of the 'Desired' and 'Possible' rates of accumulation and has been designated by Mrs. Joan Robinson as the Golden age equilibrium. However, if an increase in labour supply is not accompanied by proportionate increase in the capital supply, then it will cause unemployment in the economy. To achieve full employment of labour the growth rate of population must be equal to growth rate of capital *i.e.*

$$\Delta N/N = \Delta K/K$$

When the rate of growth of labour and capital are equal to each other, then there is full utilisation of capital in the economy. Such a switch on is called

Golden age. The existence of Golden age is the indicator of full employment level. The concept of Golden age implies that there must be equality in actual, warranted and natural growth rates. In short, in Mrs. Robinson Joan's words, when technical progress is neutral and proceeding steady, without any change in the time pattern of production, the competitive mechanism works freely, population grows (if at all) at a steady rate and accumulation goes on fast enough to supply productive Capacity for all available labour, the rate of Profit tends to be constant and the level of real wages rises with output per head. Then there are no internal contradictions in the system, we may describe these conditions as a Golden age (thus indicating that it represents a mythical state of affairs not likely to obtain in any actual economy). This is explained with the help of a diagram.



**FIG. 1.6. Closed Model**

In the figure 1.6, capital labour ratio is illustrated along positive direction of X-axis and wage rate of labour on Y-axis and the growth rate of labour on negative side of X-axis. The production function is represented by OP. Each point on this curve shows the proportion in which capital and labour are combined to produce a particular level of output. Tangent NT touches the curve OP at A and intersects Y-axis at W. At point A capital labour ratio is OC, the productivity of labour is OD and out of which OW is the wage rate. The surplus DW is rate of return to capital. The point A shows the position of equilibrium because the slope of tangent NT and the slope of production curve OP is the same. It can also be said that at A, the growth rate of capital  $\Delta K/K$  is equal to growth rate of labour  $\Delta N/N$ .

### **1.7. Types of Golden Age:**

Mrs. Joan Robinson in her book 'Essays in the Theory of Economic Growth' gives various types of Golden age as discussed below:

#### **1. A Limping Golden Age:**

In this age, the steady rate of accumulation of capital takes place below full employment or the growth rate of capital stock is less than the growth of labour force. The limping Golden age can be well compared with the concept of underemployment equilibrium as it arises due to the deficiency of capital as given by Lord Keynes. The limp in Golden age may be of various degrees.

The intensity of limp depends upon fall or rise in employability and the labour force. The limp is said to be severe if the actual growth of output is less than the required rate of output per head. The continuous decline in the level of employment is an indicator of severity of limp which, in turn, may lead to the problem of inflation and unemployment. On the other hand, when the limp is of moderate degree, the actual level of output would be rising faster than required rate of output per head i.e. if the employment increases faster than labour force, the economy would be heading towards full employment.

#### **2. A Restrained Golden Age:**

It is the situation where actual growth rate of capital is lower than the desired growth rate. This is due to the operation of certain bottlenecks as of high rate of interest and rationing of credit. During this period, firms cannot maintain the high rate of growth despite the technical progress in the economy. Mrs. Joan Robinson coined it Restrained Golden Age. This situation is impossible. In her own words, with a stock of plant appropriate to the desired rate of accumulation which exceeds the rate of growth of population and full employment already attained, the desired rate of accumulation cannot be realised because the rate of growth of output per head (even with the stimulus of scarcity of labour) is not sufficient to make it possible. Therefore, in a Restrained Golden age, proportion of unemployment is rising due to insufficient rate of accumulation, standard of workers falls unless real wage for employed workers is not rising sufficiently or opportunities for self-employment are not sufficiently favoured. The desired rate of accumulation cannot be realized due to the fact that when the firm desires to employ more

labour than the existing labour force, this results in rise in money wages and price which further giving rise to the demand for credit to finance production. Thus, it pushes up the rate of investment to such a point at which investment is checked.

### **3. A Bastard Golden Age:**

Prof. R.F. Kahn, originally used the term 'Bastard Golden Age'. It is the age where unemployment prevails but real wages remain rigid downwards. As a result, the rate of accumulation cannot increase in the absence of technical progress. Therefore, the Bastard Golden Age implies that stock of capital equipment does not grow faster because of inflation barrier. This barrier puts a limit to the growth rate of capital accumulation which leads to unemployment. The unemployment will continue till the wage rate does not fall below a particular level. Hence, a situation in which the rate of capital accumulation is low due to the threat of rising money wages an account of rise in prices, may be called as Bastard Golden Age. A Bastard Golden Age may be of two types—High level and Low level. A high level bastard age is one which steps in at a fairly high level of real wages when organised labour stalls the efforts to reduce the real wage rate. In such a situation, the rate of accumulation is limited by the inflation barrier. A low level bastard age steps in when the real wage rate is at the minimum level.

### **1.8. Types of Platinum Age:**

In the platinum age, the growth rate of output and employment are given from outside and technical advance is zero. Thus, in platinum age, the development parameters are considered to be rigid. The steady growth cannot occur in initial stages due to rigidity of development parameters.

Various types of platinum ages are discussed below:

#### **1. Bastard Platinum Age:**

The Bastard Platinum Age resembles to Bastard Golden age. This is a situation when the rate of accumulation is increasing and real wages remain constant even in the face of technical progress. Therefore, acceleration of accumulation takes place without inflation. This type of situation occurs in underdeveloped countries where the available capital is inadequate to provide



employment to unemployed force. In other words, it implies that manpower exceeds the material power.

For making proper utilization of manpower, the underdeveloped countries should adopt appropriate development strategy. This age lies at the heart of the development strategy of the underdeveloped economies. It is, therefore, necessary for underdeveloped countries to pay more attention to this type of growth.

## **2. Galloping Platinum Age:**

It reflects the case of an economy experiencing a rising rate of profit and rising capital intensity of production but unemployment still prevails. In this age, the rate of capital accumulation accelerates rapidly from low level to high level. The rate of profit rises as the real wage rate falls. As a result, less mechanised methods of production are chosen at each round of investment to increase the employment at a faster rate. It is also known as Forward platinum age.

## **3. Creeping Platinum Age:**

This age begins with full employment situation where the rates of accumulation and profit are very high and techniques of low capital intensity are being installed. The consequent fall in the rate of profit will bring down the desired rate of accumulation. As the rate of profit falls, more mechanised techniques will be chosen at each round of investment. This process will continue until the rate of accumulation comes down approximately equals the rate of growth of labour force. The path followed by the model “resembles the path through logical time of an equilibrium model with a decelerating rate of accumulation, falling rate of profit, falling marginal efficiency of investment and rising real wage rate, approaching asymptotically to a stationary state.”

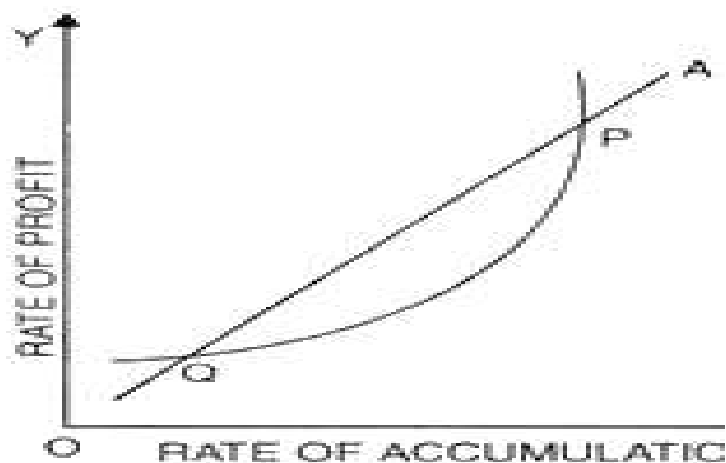
## **4. Trotting Platinum Age:**

In trotting platinum age, growth rate of capital accumulation neither accelerates nor decelerates but it is steady. This type of platinum age is mostly suitable to the underdeveloped countries as their sole aim is to attain the growth with stability. To conclude the concept of Golden age in the words of Prof. Joan Robinson, it is said “In Golden age, the initial conditions are appropriate to steady growth. In true and limping Golden ages, the actual

realization growth rate is limited only by the desired rate. In a restrained Golden age, the realised growth rate is limited by the possible rate and kept down to it. In a Golden age, the possible rate is held down by realised rate. In a bastard Golden age, the possible rate is limited in a different way i.e., by real wages at the tolerable minimum. Both in a limping Golden age and a bastard Golden age, the stock of capital in existence at any moment is less than sufficient to offer employment to all available labour. In the limping Golden age, the stock of equipment is not growing faster for lack of animal spirits. In the bastard age, it is not growing faster because it is blocked by inflation barrier”.

**Desired Rate of Accumulation:**

Mrs. Robinson established a relation between the desired rate of accumulation and possible rate of accumulation. The desired rate of accumulation which would make the firms feel satisfied with economic conjuncture in which they find themselves. It is necessary to know the relation between “the rate of profit caused by the rate of accumulation and the rate of accumulation which the rate of profit will induce”. This relation is explained with the help of a diagram 1.7. The curve A gives the rate of profit as a function of the rate of accumulation that gives rise to it. The curve 2 shows the rate of accumulation as a function of rate of profit that induces it. The two curves intersect at point P and Q. When the firms operate in the region lying to the right of the point P, the rate of accumulation exceeds the rate of profit. Such a situation may rise when the ratio of basic and commodity sector S is high.



**FIG. 1.7. Rate of Accumulation**

In the immediate future, this ratio is likely to fall and consequently the rate of accumulation will fall. If the firms are operating in the region bounded by points P and Q, they try to step up the rate of accumulation. This situation occurs when the ratio of machinery between the capital goods sector and consumer goods sector happens to be low with the result that it would increase the rate of accumulation. Similarly, the lower point of intersection of I and A, point Q is indeed a crucial point. This is the desired rate of accumulation. It is desired in the sense that the firms feel contented in the situation in which they find themselves. Here, we must remember that desired rate of accumulation is analogous to Harrod's warranted rate of growth.

### **1.9. Similarities:**

The above stated relationship exhibits that the two models are similar in nature and provides the same results i.e. the growth rate of the economy is determined by the saving income ratios and the productivity of capital. Moreover both models postulate the fixed capital coefficient and technical neutrality.

### **Dis-Similarities:**

In spite of the fact these two models are same, yet their approaches to the problem of economic growth widely differ. The points of differences are noted below:

1. In Harrod-Domar model, capital accumulation is determined by the saving income ratio and capital productivity. But, Robinson distinctly links capital accumulation with the profit wage relation and labour productivity.
2. In Harrod-Domar, model, the prime mobile of capital accumulation is capital itself while in Mrs. Joan Robinson's case, it is the labour. The latter is more realistic for labour is the ultimate source of capital.
3. In Harrod-Domar approach, growth is possible through trade cycle while Mrs. Joan Robinson, on the contrary neglected the explanation of trade cycle.
4. Harrod-Domar has more relevancy in the capital rich economies and Mrs. Robinson's model has relevance in the capital-poor economies.

### **Critical Evaluation:**

Mrs. Joan Robinson presents an interesting classification of growth process. This model seems to provide more realistic analysis of the problem

of economic development in under developed countries. In Harrod-Domar model, the capital accumulation depends upon saving ratio and capital productivity but in Robinson Model, it depends upon the profit wage relation and labour productivity bringing her theory closer to a real market economy. The idea of Golden age lays stress on the parity between the growth rate of capital and growth rate of population. This difference between two growth rates is necessary for underdeveloped countries striving to achieve development with stability. Despite of many merits, the model is not free from flaws.

**Some of these weak points are summarised below:**

1. Neglects Institutional Transformation,
2. Constant Price Level,
3. Closed Economy,
4. Unrealistic Assumptions,
5. Neutrality to Policy Implications,
6. Role of Human Capital ignored,
7. Low Rate of Capital Accumulation in relation to Potential Growth,
8. No Role of State, and
9. No Technical Progress.

**1. Neglects Institutional Transformation:**

This model ignores institutional transformations for promoting savings.

The capital accumulation among other things implies:

- (a) An increase in the volume of savings
- (b) Finance and credit mechanism
- (c) Act of investment
- (d) Pattern of investment involving the use of capital
- (e) Changing technology. But these factors find no place in the model.

The development of an economy depends upon social, cultural and institutional changes to a greater extent.

**2. Constant Price Level:**

This model is based on the unrealistic assumption of constant price level. The investment has to be increased continuously which tends to raise

the demand for factors but their supply cannot be increased to meet the demand. This results in increase in prices which is a contradiction.

### **3. Closed Economy:**

The model is based on the closed economy but this is unreal because underdeveloped countries are open rather than closed economies in which foreign trade and aid play creditable role in increasing the growth rate.

### **4. Unrealistic Assumptions:**

Another weakness of the model is that it is based on certain assumptions which do not hold well in the present era. The technical neutrality does not fit in the dynamic process of growth. Growth model becomes irrelevant if factors like these are taken to be neutral. The assumption of closed economy Laissez faire, free market system, price stability and neglect of institutional forces are all unrealistic, and this makes the economy static. Static economy and economic development cannot go side by side.

### **5. Neutrality to Policy Implications:**

It does not suggest any fiscal or monetary policy for economic development. Prof. K.K. Kurihara is of the opinion that Mrs. Robinson's model is not capable to introduce fiscal and monetary policy parameters. Prof. V.B. Singh has observed. "That the critical deficiency of this model consists in its neutrality to the important policy implications in economic development." The crux of the discussion is that this model fails to consider fiscal or monetary parameters without which theory of development remains more or less incomplete.

### **6. Role of Human Capital Ignored:**

This model lays more emphasis on material capital but ignores the role of human capital. The essential ingredients of capital are education and technical training. Marx emphasised the role of labour productivity in the accumulation of capital. Mc Cullach included, the dexterity skill the accumulation of capital. Further, he says, the dexterity skill and intelligence of labour in his concept of capital.

The contemporary development writes subscribe to this approach by including, "investment in human capital" in their development theories.

Human capital means investment in education, health, sanitation and nutrition etc. This model gives an explanation for economic development because it emphasizes the accumulation of physical capital while neglects the role of human capital.

#### **7. Low Rate of Capital Accumulation in Relation to Potential Growth:**

Generally underdeveloped countries are backward due to shortage of capital accumulation than potential growth ratio and have surplus labour force. In this regard Prof. K. Kurihara has rightly mentioned, “Joan Robinson’s discussion of capital growth has the subtle effect of discrediting the whole idea of leaving so important a problem as economic growth to the capitalist rule of the game, for her model of Laissez-faire growth demonstrates how precarious and insecure it is to entrust to provide profit makes the paramount task of achieving the stable growth of an economy consistent with the needs of a growing population and the possibility of advancing technology.”

#### **8. No Role of State:**

In Mrs. Joan Robinson’s model, the role of state has been left out of picture. In the present world, it is precarious to rely solely on the private entrepreneurs for attaining the stable growth in them with the requirements of a growing population and rapidly changing technology.

#### **9. No Technical Progress:**

According to the model, there is no technical progress. But in a dynamic setting where technical progress is inherent, technical co-efficient of production can no longer remain fixed.

### **1.10. CAMBRIDGE CAPITAL CONTROVERSY:**

The Cambridge capital controversy refers to a debate that started in the 1950s and continued through the 1970s. The core of the debate concerns the measurement of capital goods in a way that is consistent with the requirements of neoclassical economic theory. The debate involved economists such as Piero Sraffa, Joan Robinson, Piero Garegnani, and Luigi Pasinetti at the University of Cambridge England and Paul Samuelson and Robert Solow. In a now-famous *Quarterly Journal of Economics* publication from 1966, Samuelson admitted the logical validity of the British critique of the neoclassical theory of capital (Samuelson 1966). Yet, Solow (1963) claimed the debate was largely a sideshow to the core of neoclassical analysis.

The essence of the debate revolved around the fundamental premises of the theories of value, distribution, and growth, each of which depends upon an aggregate production function where the inputs or factors of production for capital and labor are aggregated in some fashion prior to the determination of the rate of profit (interest) and the wage rate. According to neoclassical theory, the price of each factor of production is determined by its marginal contribution to production; furthermore, there exists substitutability between factors of production that gives rise to diminishing returns. As a consequence, the rate of profit (or interest) is the price of capital and as such reflects capital's relative scarcity; more specifically, a relative abundance of capital, in combination with the law of diminishing returns of a factor of production (whereby the greater use of an input will imply a lower marginal product, other things being equal) will give rise to a low rate of profit (interest). The opposite would be true in the case of a relative scarcity of capital. Capital income would amount to the product of the rate of profit times the amount of capital employed. Piero Sraffa pointed out that there was an inherent measurement problem in applying the neoclassical model of value and income distribution, because the estimation of the rate of profit requires the prior measurement of capital. The problem is that capital—unlike labor or land, which can be reduced to homogenous units stated in their own terms (for example, hours of the same skill and intensity or land of the same fertility)—is an ensemble of heterogeneously produced goods, which must be added in such a way as

to enable a cost-minimizing choice of techniques. From the various alternatives, neoclassical theory chooses to measure capital goods in value terms; that is, the product of physical units (buildings, machines, etc.) times their respective (equilibrium) prices. Joan Robinson (1953), inspired by Sraffa's teaching and early writings, and later Sraffa himself (1960), argued that the value measurement of capital requires the prior knowledge of equilibrium prices, which in turn requires an equilibrium rate of profit that cannot be obtained unless we have estimated the value of capital.

Clearly, there is a problem of circularity here that the Cambridge, Massachusetts, economists sought to resolve. Paul Samuelson, in particular, presented a model based on the heroic assumption that capital-intensity is uniform across sectors, which is equivalent to saying that there is a one-commodity world. In such an economy, as income distribution varies, the subsequent revaluation of capital gives rise to results that are absolutely consistent with the requirements of neoclassical theory. In fact, Samuelson derived a straight-line wage-profit rate frontier (the mirror image of the usual convex isoquant curves), each one representing a cost-minimizing technique, and this gave rise to a well-behaved demand-for-capital schedule. Parenthetically, Samuelson attacked Marxian value theory for its alleged inability to explain relative prices. However, if one applies Samuelson's heroic assumption of an equal capital intensity across all industries to Marx's labor theory of value, then all of Samuelson's criticisms of Marx become irrelevant. This irony was not unnoticed by the British participants in the capital debates.

Samuelson's assumption was attacked for lack of realism by Garegnani, Pasinetti, and Amartya Sen among others, who showed that once we hypothesize different capital intensities across industries, the neoclassical results do not necessarily hold. The idea is that as relative prices change the revaluation of capital can go either way, and it is possible for an industry that is capital-intensive in one income distribution to become labour-intensive in another. As a consequence, we no longer derive Samuelson's straight-line wage-profit rate frontiers, which are consistent with the cost-minimizing choice of technique and give rise to well-behaved demand-for-capital



schedules. In the presence of many capital goods and various capital intensities across industries it follows that the wage–profit rate frontiers are nonlinear and may cross over each other more than once, which means that for a low rate of profit one may choose a capital-intensive technique. As the rate of profit increases, the technique with a lower capital intensity may be chosen, and for a higher rate of profit the original technique of higher capital intensity is chosen again. We observe that a capital-intensive technique may be chosen for both low and high rates of profit, a result that runs contrary to the neoclassical theory of value and income distribution. Under these circumstances we cannot determine a well-behaved demand for capital schedule and so the whole neoclassical construction is under question.

It is important to point out that the capital theory critique does not affect the classical theory of value and income distribution, because the classical theory does not claim that relative prices of factors of production reflect relative scarcities; additionally this theory assumes one of the distributive variables, usually the real wage, as a datum that in combination with the given technology and output level determines the relative equilibrium prices together with the equilibrium rate of profit. Furthermore, the evaluation of heterogeneous capital goods can be achieved in terms of labor values; hence there might be a problem of consistency because variables estimated in terms of labor values will differ from those estimated in terms of equilibrium prices. This, however, is mainly an empirical question and the empirical research has shown that the two types of prices are close to each other, and variables estimated in labor values or equilibrium prices are approximately equal to each other.

The capital controversy had an initial effect on neoclassical economics, but soon it was forgotten to the point that the new generation of neoclassical economists either dismisses it or simply does not know it. As a result, both theoretical and empirical neoclassical research makes use of aggregate production functions, where capital is still used along with labor in the determination of output and the marginal products of these inputs are estimated on the assumption of substitutability between factors of production, as if the capital controversy never happened. At the close of the

twentieth century, there were new efforts by the so-called modern classical economists to revive the classical approach, and once again the capital theory began to surface in mainstream journals, which may revive theoretical questions that puzzled the best Cambridge economists in England and the United States.

The Cambridge capital controversy revived interest in Marxian economics, contributed to the founding of neo-Ricardian or Sraffian economics, and inspired the development of post-Keynesian Economics. Indeed, it was Sraffa's 1920s critique of the neoclassical theory of the firm and Sraffa's proto-critique of neoclassical value theory that greatly influenced Keynes's *General Theory of Employment, Interest, and Money* (1936). British interpretation of Keynes's influential publication assumed a classical theory of value and distribution, while the U.S. interpretation sought to integrate Keynes into the neoclassical theory of value and distribution. Finally, in another famous barb, Robinson once said that because she never learned math she was always forced to think. Robinson's mathematics never went beyond basic algebra and very elementary geometry—the kind of math mastered by many American students in the first two years of high school. On the other hand, Samuelson's economic analysis has led the way in the use of calculus, linear algebra, differential equations, real analysis, and mathematical programming. Robinson's biting comment is a warning to economists to not allow mathematical technique to triumph over substantive understanding of how real-world economies operate.

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## **UNIT – II**

### **THEORIES OF DEVELOPMENT**

#### **2.1. Introduction:**

The classical economists had explained growth process in terms of rate of technological progress and population growth. In their opinion, technological progress remains in lead for some time but finally it disappears when the falling rate of profit prevents further accumulation of capital. It is at this stage that the economy slumps down into stagnation.

In broad way, the classical theory of economic development may be stated as: suppose an expected increase in profits brings about an increase in investment which adds to the existing stock of capital and to the steady flow of improved techniques. This increase in capital accumulation raises the wage fund. Higher wages induce an accelerated population growth which causes the demand for food to rise. Food production is raised by employing additional labour and capital. But diminishing returns to land bring about rise in labour cost and as a result, the price of corn goes up. In turn, rents increase, wages rise, thereby reducing profits. Reduction in profit implies reduction in investment, retarded technological progress, diminution of wage fund and slowing down of population growth and capital accumulation. “In the classical model, the end result of capitalist development is stagnation... This stagnation resulted from the natural tendency of profits to fall and consequent chopping off capital accumulation”. When this happens, capital accumulation ceases, population becomes constant and stationary state sets in.

#### **2.2. Concept of classical theory:**

The classical theory implies that every complex concept has a classical analysis, where a classical analysis of a concept is a proposition giving metaphysically necessary and jointly sufficient conditions for being in the extension across possible worlds for that concept.

#### **2.3. ADAM SMITH CLASSICAL THEORY:**

Adam Smith is considered to be the father of economics. It is not so because he was first explorer in the field of economics, also not because he revolutionized economic planning by his maiden ideas, but because he

abbreviated what he had received from his predecessors and handed it down as a guide to the coming generations. He was the editor and not the author, organizer and not the originator of economic science. "He was the man of systematic work and balanced presentation, not of great new ideas but a man who carefully investigates the given data, criticizes them coolly and sensibly, and coordinates the judgements arrived at with others which have already been established".

Adam Smith contained all his ideas in his "Wealth of Nations". The most important aspect of this book was a Theory of Economic Development. Physiocracy came into existence due to mercantilism. They believed in science of natural laws and emphasised the significance of agriculture and contended that it is the only industry that can make country wealthy. Adam Smith's 'Wealth of Nations' was scientific not because it contained the absolute truth but because it came as a turning point, the beginning of all that came after, as it was the end of all that came before.

**The main points of the theory are as under:**

**Natural Law:**

Adam Smith proposes natural law in economic affairs. He advocated the philosophy of free and independent action. If every individual member of society is left to peruse his economic activity, he will maximize the output to the best of his ability. Freedom of action brings out the best of an individual which increases society wealth and progress. Adam Smith opposed any government intervention in industry and commerce. He was a staunch free trader and advocated the policy of Laissez-Faire in economic affairs. He opines that natural laws are superior to law of states. Statutory law or manmade law can never be perfect and beneficial for the society that is why Smith respects nature's law because nature is just and moral. Nature teaches man the lesson of morality and honesty. These exercise favourable effects on the economic progress of society.

**Laissez Faire:**

Adam Smith's theory is based on the principle of 'Laissez-Faire' which requires that state should not impose any restriction on freedom of an individual. The theory of economic development rests on the pillars of saving,

division of labour and wide extent of market. Saving or capital accumulation is the starting point of this theory. He believed that “there is a set of rules or rights of justice and perhaps even of morality in general which are, or may be known by all men by either or reason or of a moral sense, and which possesses an authority superior to that of such commands of human sovereigns and such customary legal and moral regulations as may contravene them”. The policy of laissez-faire allows the producers to produce as much they like, earn as much income as they can and save as much they like. Adam Smith believed that it is safe to leave the economy to be propelled, regulated and controlled by invisible hand i.e. the forces of competition motivated by self-interest be allowed to play their part in minimizing the volume of savings for development.

**Production Function:**

Adam Smith recognized three factors of production namely labour, capital and land i.e.

$$Y = f(K, L, N)$$

K = Stock of Capital

L = Labour force

N = Land

He emphasized labour as an important factor of production along with other factors and observed, “The annual labour of nation is the fund which originally supplies it with all necessaries and conveniences of life which it annually consumes and which consists always either in immediate produce from other nations”. Since the growth is a function of capital, labour, land and technology and land being passive element is least important. Prof. Adam Smith regarded labour as father and land as mother. He wrote, “To him (farmer) land is the only instrument which enables him to earn the wages of his labour and to make profits of this stock”.

The production function does not conceive the possibility of diminishing marginal productivity. It is subject to law of increasing returns to scale. Smith argued that real cost of production shall tend to diminish with the passage of time, as a result the existence of internal and external economies occurring out of the increases in market size.

Adam Smith asserted that division of labour does not depend merely on technological feasibility, it greatly depends on the extent of the market as well and the size of market depends on the available stock and the institutional restrictions placed upon both domestic and international trade. Smith observes that, “when the market is small, no person can have encouragement to dedicate himself entirely to one employment, for want of power to exchange all the surplus part of production of his own labour, which is over and above his own consumption, for such parts of the produce of other man’s labour as he has occasion for”.

Smith also recognizes the importance of technological development for improvement in productivity and which is possible only if sufficient capital is available. He wrote, “The person who employs his stock in maintaining labour, endeavours, therefore, both to make among his workmen the most proper distribution of employment and furnish them with the best machines which he can either invent or afford to purchase. His ambition in both these respects is generally in proportion to the extent of his stock or to the number of people which it can employ”.

### **Division of Labour:**

The rate of economic growth is determined by the size of productive labour and productivity of labour. The productivity of labour depends upon technological progress of a country and which, in turn, depends upon the division of labour. This division of labour becomes the true dynamic force in Adam Smith’s theory of growth. The only remarkable feature of Smith’s account of division of labour is pointed by Prof. Schumpeter as “nobody, either before or after Adam Smith ever thought of putting such a burden upon division of labour. With Adam Smith it is practically the only factor in economic progress”.

Division of labour increases the productivity of labour through specialization of tasks. When a work is sub-divided into various parts and the worker is asked to perform small parts of whole job, his efficiency increases as now he can focus his attention more carefully. Thus, the concept of division of labour means the transference of a complex production process into number of simpler process in order to facilitate the introduction of various

methods of production. Adam Smith concentrated upon the social division of labour which emphasized the co-operation of all for satisfaction of the desires of each. It is the process by which different types of labour which produce goods to satisfy the individual needs of their producers are transformed into social labour which produces goods for exchanging them for other goods.

**Adam Smith in his book 'Wealth of Nations' pointed out three benefits of division of labour:**

1. Increase of dexterity of workers.
2. Saving time required to produce commodity.
3. Invention of better machines and equipment.

The third advantage implies that invention is the result of worker's intelligence. But Smith wrote that workers become 'as stupid and ignorant as it is possible for human creature to become as a result of division of labour'. Division of labour necessarily leads to exchange of goods, which highlights the importance of trade. In short, division of labour leads to exchange of goods which, in turn, promotes trade and widens the extent of market. Wide extent of market is an essential pre- requisite for economic development.

**Capital Accumulation:**

It is the pivot around which the theory of economic development revolves. The growth is functionally related to rate of investment. According to Smith, "any increase in capital stock in a country generally leads to more than proportionate increase in output on account of continually growing division of labour". Capital stock consists of:

- (a) Goods for the maintenance of productive workers.
- (b) Goods for helping the workers in their productive activities.

Adam Smith distinguished between non capital, circulating capital and fixed capital goods. Non capital goods refer to those which are useful directly and immediately to their owner. Fixed capital refers to those goods which are directly used in production processes, without changing hands. Fixed capital consists of all the means of production. Capital is increased by parsimony and diminished by prodigality and misconduct. The rate of investment was determined by the rate of saving and savings were invested in full. The classical economists also believed in the existence of wage fund. The idea is

that wages tend to equal to the amount necessary for the subsistence of labourers. If the total wages at any time become higher than subsistence level, the labour force will increase, competition for employment will become keener and the wages come down to the subsistence level. Thus, Smith believed that, “under stationary conditions, wage rate falls to the subsistence level, whereas in periods of rapid capital accumulation, they rise above this level. The extent to which they rise depends upon the rate of population growth”. Thus, it can be concluded that wage fund could be raised by increasing the rate of net investment.

According to Smith, “investments are made because the capitalist want to earn profits on them. When a country develops and its capital stock expands, the rate of profit declines. The increasing competition among capitalists raises wages and tends to lower profits”. So it is a great difficulty of finding new profitable investment outlets that leads to falling profits.

Regarding the role of interest, Smith postulated a negatively sloped supply curve of capital implying that supply of capital increased in response to decline in interest rate. Smith wrote that with the increase in prosperity, progress and population, the rate of interest falls and as a result, capital is augmented. With the fall in interest rate, the money lenders will lend more to earn more interest for the purpose of maintaining their standard of living at the previous level. Thus, the quantity of capital for lending will increase with the fall in rate of interest. But when the rate of interest falls considerably, the money lenders are unable to lend more in order to earn more to maintain their standard of living. Under these circumstances, they will themselves start investing and become entrepreneurs. Smith believed that economic progress-involves rise in money as well as real rentals, and a rise in rental share of national income. This is because the interest of land owners is closely related to general interest of the society.

### **Agents of Growth:**

Smith has observed that farmers, producers and businessmen are the important agents of economic growth. It was the free trade, enterprise and competition that led farmers, producers and businessmen to expand the market and which, in turn, made the economic development inter-related. The



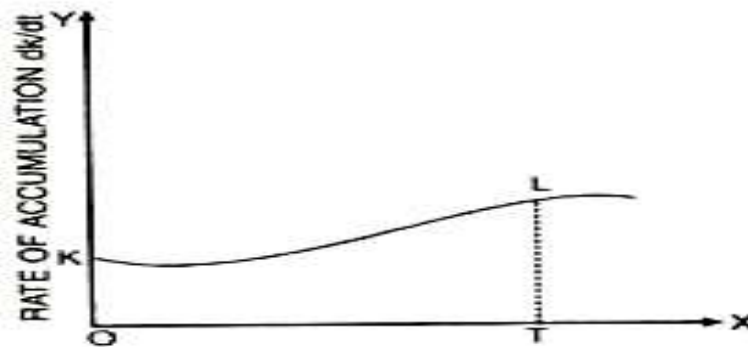
development of agriculture leads to increase in construction works and commerce. When agricultural surplus arises as a result of economic development, the demand for commercial services and manufactured articles arises. This leads to commercial progress and establishment of manufacturing industries. On the other hand, their development leads to increase in agricultural production when farmers use advanced techniques. Thus, capital accumulation and economic development take place due to the emergence of the farmer, the producer and the businessmen.

**Process of Growth:**

“Taking institutional, political and natural factors for granted, Smith starts from the assumption that a social group may call it a ‘nation’ will experience a certain rate of economic growth that is accounted for by increase in numbers and by savings. This induces a widening of market which, in turn, increases division of labour and thus, increases productivity. In this theory, the economy grows like a tree. This process is no doubt exposed to disturbances by external factors that are not economic... but in itself, it proceeds continuously and steadily.

Each situation grows out of preceding one in a uniquely determined way and the individuals whose act combine to produce each situation count individually for no more than the individual cells of a tree”. The process of growth is cumulative. Division of labour made possible by accumulation of capital and expansion of market, increases national income and output, which in turn, facilitates saving and further investment and in this way, economic development rises higher and higher. Smith’s progressive state is in reality the cheerful and hearty state to all the different orders to the society. But this progressive state is not endless. It ultimately leads to stationary state. It is the scarcity of natural resources that stops growth. An economy in stationary state is characterized by unchanged population, constant total income, and subsistence wage, elimination of profit in excess of the minimum consistent with risk and absence of net investment. In his opinion, an economy in stationary state finds itself at the highest level of prosperity consistent with its natural resources and environment. The competition for employment reduces wages to subsistence level and competition among the

businessmen brings profits as low as possible. Once profit falls, it continues to fall. Investment also starts declining and in this way, the end results of capitalist is stationary state. When this happens, capital accumulation stops, population becomes stationary, profits are minimum, wages are at subsistence level, there is no change in per capita income and production and the economy reaches the state of stagnation. The stationary state is dull, declining, melancholy life is hard in stationary state for different sections of the society and miserable in declining state.



**Fig. 2.1 Smith theory**

Smith's theory is explained with the help of a diagram 2.1. Time is taken along the X-axis and the rate of accumulation along the Y-axis. The economy grows from K to L during the time path T. After T, the economy reaches stationary state. Linked to L where further growth does not take place because wages rise so high that profits become zero and capital accumulation stops.

**Conclusion:**

It can be concluded that Prof. Adam Smith did not propound any specific growth theory. His views relating to economic development are part of general economic principle propounded by him. In a very important aspect then this book (Wealth of Nations) was the theory of economic development.

**2.4. RICARDO THEORY OF DEVELOPMENT:**

Economics as a science is, on the one hand, a body of knowledge and on the other hand, an engine of analysis. As a result of knowledge, it contains generalizations about the working of economic system. Prof. Ricardo added little to the economic knowledge gathered by Smith. As an analytical engine, economics provides an apparatus through which actual economic problems are analyzed.

Ricardo's greatest contribution to economics is the provision of engine of analysis. By using the technique of deductive or abstract reasoning, he constructed a rigorous model in which some selected economic variables were systematically placed to form a logic. Such a theoretical model helps to understand how a system works and how the change in variables affects the working of the system. Ricardo propounded no theory of development. He simply discussed the theory of distribution. This theory is based on the marginal and surplus principles. The marginal principle explains the share of rent in national output and surplus principle explains the division of the remaining share between wages and profits.

**Assumptions:**

The Ricardian theory is based on certain assumptions which are as under:

- Supply of land is fixed.
- Land is used for production of corn and the working force in agriculture helps in determining the distribution in industry.
- Law of diminishing returns operates on land.
- Demand for corn is perfectly inelastic.
- Labour and capital are variable inputs.
- Capital consists of circulating capital.
- There is capital homogeneity.
- All workers are paid subsistence wages.
- The state of technological knowledge is given.
- There is perfect competition.
- Demand for labour depends upon accumulation of capital.
- Demand and supply price are independent of the marginal productivity of labour.
- The supply price of labour is given and constant.
- Capital accumulation results from profits.

Ricardian system considers agriculture as the most important sector of the economy. The difficulty of providing food to expanding population is the main problem. According to Ricardo, there are three major groups in the economy. They are landlords, capitalists and labourers among whom the entire productive land is distributed. It is the capitalists who initiate the process of

economic development in the society by reinvesting profits and, thus, increasing capital formation. The total national output is distributed among the three groups as rents, profits and wages, respectively and the share of each group can be determined as under:

1. Rent per unit of labour is the difference between average and marginal product or total rent equals the difference between average product and marginal product multiplied by the quantity of labour and capital on land.

2. The wage rate is determined by wage fund divided by number of workers employed at subsistence wage. Thus, output of total corn produced and sold, rent has the first right and the residual is distributed among wages and profits, while interest is included in profits.

### **Production Function:**

Ricardo's production function assumes the existence of three factors-land, labour and capital and it is subjected to the restriction of diminishing marginal productivity due to perfectly inelastic of land and its variable quality. He regarded economic development as the process of these factors of production. The marginal productivity of land, labour and capital declines with the increase in cultivation. In agriculture, the rate of innovation introduced would be insufficient to affect the tendency for diminishing returns to set in at either intensive or extensive margin of cultivation. Thus, the introduction of improvements in the agriculture techniques might check the progress of diminishing returns it could have temporary effect on cost of agricultural production.

For the overall growth of the economy, it is necessary to examine as to which of these patterns prevail with respect to the output of industry and agriculture together. Ricardo is of the opinion that "Although, then it is probable that under the most favourable circumstances, the power of production is still greater than that of population, it will not long continue so, for the land being limited in quantity and differing in quality, with every increased portion of capital employed on it there will be a decreased rate of production while the power of population continues always to be the same". As Smithian economy grows at an accelerated rate, Ricardian economy develops at a progressively slower pace.

**Ricardian production function is given as:**

$$Y = F(K, N, L)$$

K = Capital

N = Labour

L = Land

**Capital Accumulation:**

Ricardo emphasized the rate of capital accumulation as capital acts as an engine of growth. "Capital" is the part of the wealth of a country which is employed in production and consists of food, clothing tools, raw materials, machinery etc., necessary to give effect to labour.

**Capital accumulation depends upon two factors:**

- (a). Capacity to save.
- (b). Will to save.

The capacity to save is more important in capital accumulation. This depends on the net income of society which is a surplus out of the total output after meeting the cost of workers subsistence. The larger the surplus, the larger will be the capacity to save. Landlords and capitalists invest through this surplus and the size of this surplus depends upon the rate of profit.

**The Profit Rate:**

The rate of profit is the ratio of profits to capital employed. But since capital consists of working capital, it is equal to the wage bill. So, as long as rate of profit is positive, the process capital accumulation will continue and the economy will progress. The labour force will grow proportionately and the total wage fund will increase. The profit depends upon wages, wages on price of the corn and price of the corn on the fertility of marginal land. Hence, profits and wages are inversely proportional to each other. When there is improvement in agriculture, the productivity power of land increases and there is fall in the price of corn and as a result, subsistence wage also falls, but profits increase and there is more capital accumulation. This will increase the demand of labour and wage rate will rise, which will increase population and demand for corn and its price. Since the wages rise, the profit will decline and there will be less capital accumulation. The process of growth will continue till the profits fall to zero or the whole of the total product less rent is used for the

maintenance of labour at subsistence level. At this stage, capital accumulation stops and the progress of the economy reaches a stationary state.

### **Increase in Wages:**

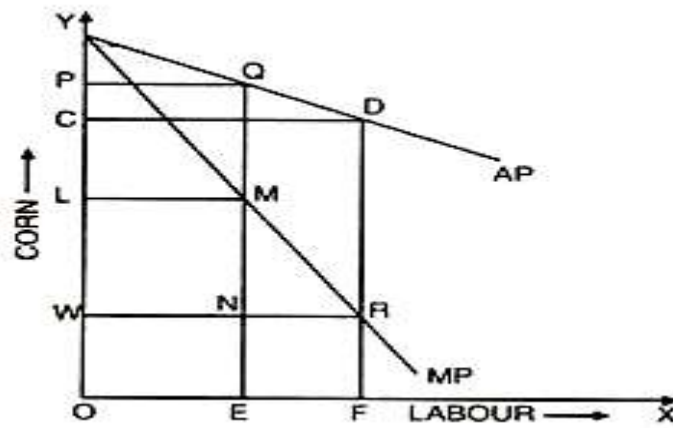
In Ricardian Scheme, wages play an active role in determining income between capital and labour. The wage rate depends upon the number of workers and wage fund. The wage rate falls with the increase in number of workers and vice-versa. If the wage rate is sufficient to enjoy the comforts of life by labourers, the population is expected to increase and if the wage rate is the lowest the working class cannot meet the necessities of life, the population will decrease. Thus, there is positive co-relation between wage rate and size of population. The increase in wages with the increase in population absorbs the rise in price of corn. Since wages also increase, profits decline. These opposite tendencies ultimately retard the capital accumulation.

### **Declining Profits in Other Industries:**

According to Ricardo, "The profits of the farmer regulate the profits of all other trades". Ricardo uses agricultural profits as a basis and it is the agricultural profit which determines the industrial profit. The money rate of profit earned on capital must be equal in equilibrium in both agriculture and industry. The rate of profit in the agricultural sector determines the rate of profit in the industrial sector of an economy. Thus, when the profit declines in the agricultural sector, it also declines in the industrial sector. The industry would have to raise the wages of labourers with the increase in price of corn and which in turn, reduces the profit. Thus, the price of corn determines the rate of profit in an industry. When profit declines in agricultural sector, it declines in all trades.

### **Other Sources of Capital Accumulation:**

Ricardo is of the view that economic development depends upon the difference between production and consumption. He stresses on increasing production and reducing unproductive consumption. The productivity of labour can be increased through technological changes and better organisation and thereby stimulating capital accumulation. But the use of machines will employ less workers which will lead to unemployment and



**FIG. 2.2 Capital accumulation**

reduced wages since the economic condition of workers decreases with the employment of more machines. So Prof. Ricardo regards the technological conditions as given and constant. Taxes are the source of capital accumulation in the hands of the government. According to Ricardo, taxes are levied only to reduce conspicuous consumption, otherwise the imposition of taxes on capitalists, landlords and labourers will transfer resources from these groups to government. Taxes adversely affect the investment. Therefore, Ricardo is not in favour of imposition of taxes, as taxes reduce income, profit and capital accumulation.

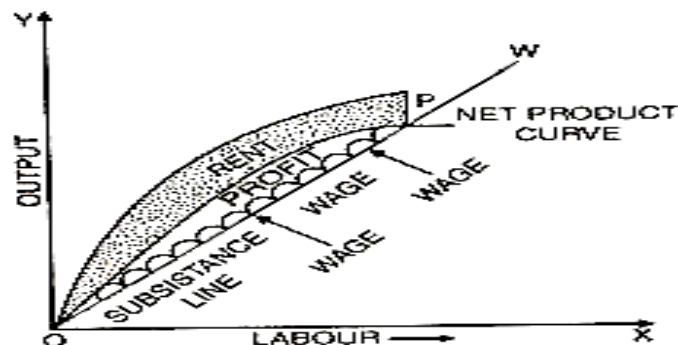
Prof. Ricardo is in favour of free trade as it is an important factor of development of the country. Free trade provides vast opportunities of investment to capitalists. The capitalists can make investment in export oriented industries and earn profits. The re-investment of profit by the capitalists will further enhance the developing activities. The capital accumulation can be raised by importing corn. But the import of corn leads to fall in demand for labour which deteriorates the economic conditions of labourers. On the other hand, landlords and capitalists do not think it fit to import cheap corn from the foreign countries, as a result, their profits decline. Ricardian theory has been illustrated with the help of a diagram (Fig 2.2). The quantity of corn is measured along the vertical axis and labour along the horizontal axis. The curve AP represents average product of labour and MP represents the marginal product of labour. With OE amount of labour, total corn produced is OPQE. Rent is shown by rectangle PQML, as the difference between AP and MP. At subsistence wage rate OW, the supply curve of labour WN is infinitely elastic and total wage is OWNE. Total

profits WLMN, are the residue after deducting rent and wages from the total output:

$$WLMN = OPQE - (LPQM - OWNE)$$

**Stationary State:**

When the economic development proceeds real wage rate remains at the subsistence level and profit tends to fall. When the capital accumulation rises with increase in profit, total output increases which raises the wage fund. With the increase in the wage fund' population increases which raises the demand for corn and its price. As population increases, inferior grade lands are cultivated to meet increasing demand of corn. Ricardo assumes that labourers and landlords spend all their income on consumption and hence, save nothing. The saving is done by the capitalist for profit earners. But as the society progresses, the share of profit begins to decline. Fall in the rate of Profit slackens the process of capital accumulation and the development receives a set back and at this stage, there is no further increase in capital and the economy enters in a stationary state.



**FIG. 2.3. Ricardo classical theory**

In this state, capital accumulation stops, population does not grow, the wage rate is at subsistence level and technological progress ceases. “The basic casual force in this scheme is the fact of diminishing returns in agriculture, a grim tendency which can be postponed temporarily by technical progress. But technical progress cannot prevent the ultimate disappearance of profit and the onset of stationary state”. The phenomenon of stationary state is explained with the help of a diagram 2.3. With the increase in capital accumulation, profits and wages tend to increase and the rise in wages bring about a decline in profits. The decline in profits will continue till a stage comes



when the net product curve intersects the wage line OW at P. At this point, wages are equal to net product and the profit is nil. Any disturbance to the right of point P, will make the net product less than wage level which is impossible. So P is the point at which economy is in a stationary state. Thus, “Ricardian system of development formulated certain interrelations among capital, population and output on the basis of these relations, it traces the course of rent, wages and profits every time and finally it concedes with the celebrated forecast of the eventual advent of a stationary state”.

**Conclusion:**

The model tries to deal with the various problems relating to development. It determines the relative shares of different agents of production in national income. The economy in this model is considered to be ever changing with the passage of time, till it reaches stationary state. This theory highlights the importance of major development variables such as capital accumulation, population, profits, wages and rent etc.

**2.5. MALTHUS CLASSICAL THEORY:**

Thomas Robert Malthus enunciated his views about population in his famous book, *Essay on the Principle of Population as it affects the Future Improvement of Society*, published in 1798. Malthus revolted against the prevailing optimism shared by his father and Godwin that a perfect state could be attained if human restraints could be removed. Malthus’ objection was that the pressure of increasing population on the food supply would destroy perfection and there would be misery in the world. Malthus was severely criticised for his pessimistic views which led him to travel on the continent of Europe to gather data in support of his thesis. He incorporated his researches in the second edition of his *Essay* published in 1803.

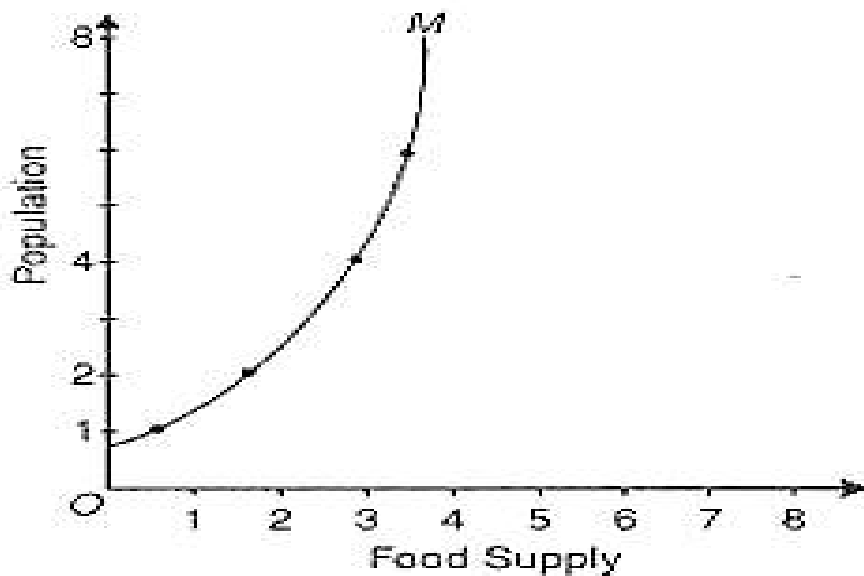
The Malthusian theory explains the relationship between the growth in food supply and in population. It states that population increases faster than food supply and if unchecked leads to vice or misery. The Malthusian doctrine is stated as follows:

(1) There is a natural sex instinct in human beings to increase at a fast rate. As a result, population increases in geometrical progression and if

unchecked doubles itself every 25 years. Thus starting from 1, population in successive periods of 25 years will be 1, 2, 4, 8, 16, 32, 64, 128, and 256 (after 200 years).

(2) On the other hand, the food supply increases in a slow arithmetical progression due to the operation of the law of diminishing returns based on the supposition that the supply of land is constant. Thus the food supply in successive similar periods will be 1, 2, 3, 4, 5, 6, 7, 8, and 9 (after 200 years).

(3) Since population increases in geometrical progression and the food supply in arithmetical progression, population tends to outrun food supply. Thus an imbalance is created which leads to over-population.



**Fig.2.4. Malthus theory**

This is depicted in Figure 2.4. The food supply in arithmetical progression is measured on the horizontal axis and the population in geometrical progression on the vertical axis. The curve M is the Malthusian population curve which shows the relation between population growth and increase in food supply. It rises upward swiftly.

(4) To control over-population resulting from the imbalance between population and food supply, Malthus suggested preventive checks and positive checks. The preventive checks are applied by a man to control the birth rate. They are foresight, late marriage, celibacy, moral restraint, etc. If people fail to check growth of population by the adoption of preventive checks, positive checks operate in the form of vice, misery, famine, war, disease,

pestilence, floods and other natural calamities which tend to reduce population and thereby bring a balance with food supply. According to Malthus, preventive checks are always in operation in a civilized society, for positive checks are crude. Malthus appealed to his countrymen to adopt preventive checks in order to avoid vice or misery resulting from the positive checks. Malthus' doctrine is illustrated below.

**Criticisms of the Malthusian Doctrine:**

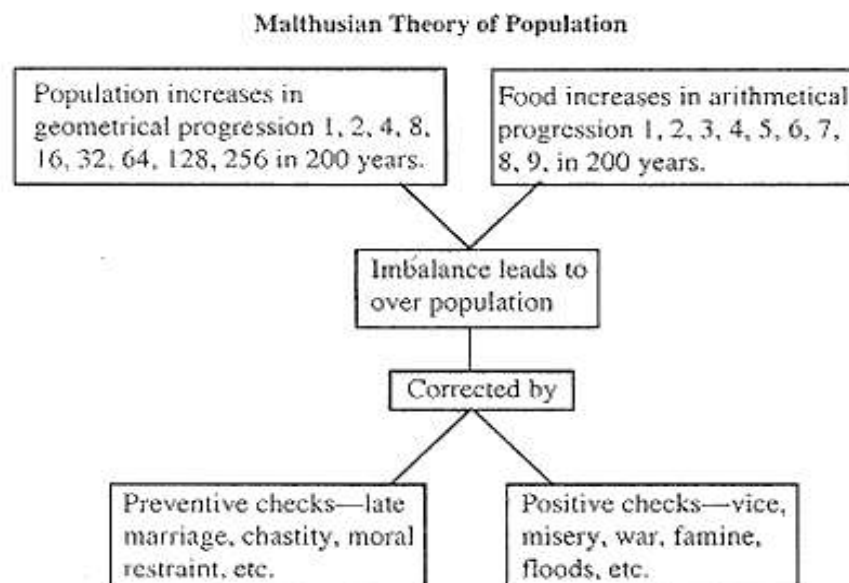
The Malthusian theory of population has been widely discussed and criticised during the 19th and early 20th century. Some of the criticisms are as follows:

**(1) Mathematical Form of the Theory Wrong:**

The mathematical formulation of Malthus' doctrine that food supply increases in arithmetical progression and population increases in geometrical progression in 25 years has not been proved empirically. Rather, the food supply has increased more than in the arithmetical progression while population growth has not been in geometrical progression so as to double the population in 25 years. But this criticism is beside the point because Malthus used his mathematical formulation to make his principle clear in the first edition of his Essay and deleted it in its second edition.

**(2) Failed to foresee the Opening up of New Areas:**

Malthus had a narrow vision and was particularly influenced by local conditions in England. He failed to foresee the opening up of new areas of Australia, the United States and Argentina where extensive farming of virgin



lands led to increased production of food. As a result, countries like England on the continent of Europe have been provided with abundant supplies of cheap food. This has been made possible with rapid improvements in the means of transport, a factor almost overlooked by Malthus. No country need fear starvation and misery if it does not produce sufficient for its increasing population these days.

**(3) Applied a Static Economic Law to a Period of Time:**

The Malthusian notion that the food supply increases in arithmetical progression is based on a static economic law at any one time. i.e., the law of diminishing returns. Malthus could not foresee the unprecedented increase in scientific knowledge and agricultural inventions over a period of time which has stayed the law of diminishing returns. Consequently, the food supply has increased much faster than in arithmetical progression. Malthus has been proved wrong not only in the advanced countries but also in developing countries like India with the 'green revolution'.

**(4) Neglected the Manpower Aspect in Population:**

One of the principal weaknesses of Malthus' thought has been that he neglected the manpower aspect in population growth. He was a pessimist and dreaded every increase in population. He forgot, according to Cannan, that "a baby comes to the world not only with a mouth and a stomach, but also with a pair of hands." This implies that an increase in population means an increase in manpower which may tend to increase not only agricultural but also industrial production and thus makes the country rich by an equitable distribution of wealth and income. As rightly pointed out by Seligman, "The problem of population is not merely one of mere size but of efficient production and equitable distribution." Thus the increase in population may be necessary.

**(5) Population not related to Food Supply but to Total Wealth:**

The Malthusian theory rests on a weak relationship between population and food supply. In fact, the right relationship is between population and total wealth of the country. This is the basis of the optimum theory of population. The argument is that if a country is rich materially and even if it does not produce enough food for its population, it can feed the people well by

importing food stuffs in exchange for its products or money. The classic example is of Great Britain which imports almost all its food requirements from Holland, Denmark, Belgium and Argentina because it concentrates more on the production of wealth rather than on food products. Thus the very basis of the Malthusian doctrine has been proved wrong.

**(6) Increase in Population the Result of declining Death Rate:**

The Malthusian theory is one sided. It takes the increase in population as the result of a rising birth rate, whereas population has grown considerably the world over due to a decline in death rate. Malthus could not foresee the marvellous advancements in the field of medical sciences which have controlled fatal diseases and made human life longer. This has been particularly so in underdeveloped countries like India where the Malthusian theory is said operate.

**(7) Empirical Evidence proves this Theory Wrong:**

Empirically, it has been proved by demographers that population growth is a function of the level of per capita income. When per capita income increases rapidly, it lowers the fertility rate and the rate of population growth declines. Dumont's "social capillarity thesis" has proved that with the increase in per capita incomes, the desire to have more children to supplement parental incomes declines. When people are accustomed to a high standard of living, it becomes a costly affair to rear a large family. Population tends to become stationary because people refuse to lower their standard of living. This has actually happened in the case of Japan, France and other western countries.

**(8) Preventive Checks do not pertain to Moral Restraint:**

Malthus was essentially a religious man who laid emphasis on moral restraint, celibacy, late marriage, etc. to control population. But he could not visualise that human beings would invent contraceptives and other family planning devices for birth control. This was perhaps due to the fact that he could not make any distinction between sexual desire and the desire to have children. People have sexual desire but they do not want to have more children. Thus moral restraint alone cannot help to control the increase in

population which Malthus suggested. Family Planning is essential as a preventive check.

**(9) Positive Checks not due to Over-population:**

Malthus' pessimism and religious education led him to believe that over-population was a heavy burden on the earth which was automatically lessened by God in the form of misery, wars, famines, floods, diseases, pestilence, etc. But all these are natural calamities which are not peculiar to over-populated countries. They visit even those countries where the population is on the decline or stationary, such as France and Japan.

**(10) Malthus a False Prophet:**

The Malthusian theory is not applicable to countries for which this was propounded. In the western European countries, the bogey and pessimism of Malthus has been overcome. His prophecy that misery will stalk these countries if they fail to check the growth of population through preventive checks has been proved wrong by a decline in birth rate, adequacy of food supply, and increase in agricultural and industrial production. Thus Malthus has proved to be a false prophet.

**2.6. KARL MARX DEVELOPMENT OF CAPITALISTIC ECONOMY:**

**2.6.1. Introduction**

Capitalism is 'a system of economic enterprise based on market exchange'. The Concise Oxford Dictionary of Sociology (1994) defines it as 'a system of wage-labour and commodity production for sale, exchange and profit, rather than for the immediate need of the producers'. 'Capital' refers to wealth or money used to invest in a market with the hope of achieving a profit' (Giddens, 1997). It is an economic system in which the means of production are largely in private hands and the main incentive for economic activity is the accumulation of profits. From the perspective developed by Karl Marx, capitalism is organized around the concept of CAPITAL implying the ownership and control of the means of production by those who employ workers to produce goods and services in exchange for wages.

**2.6.2. Definition:**

Max Weber, on the other hand, considered market exchange as the defining characteristic of capitalism. In practice, capitalist systems vary in the

degree to which private ownership and economic activity are regulated by government. It has assumed various forms in industrial societies. In common parlance, these days, capitalism is known as a market economy. The goods sold and the prices they are sold at are determined by the people who buy them and the people who sell them. In such a system, all people are free to buy, sell and make a profit if they can. This is why capitalism is often called free market system. It gives freedom to entrepreneur (of opening industry), to worker (of selling labour), to trader (of buying and selling goods), and to the individual (of buying and consuming).

### **2.6.3. Capitalistic Economy:**

If Marx was bothered about anything or any concept in his thoughts and idea it was mainly two concepts that bothered him the most.

(a) Capital and

(b) Labour.

Any particular epoch about which Marx was bothered in the history was capitalism; because Marx belongs to this period in the history, i.e. definitely after the Industrial Revolution. Capitalism represents the historic mode of production under historic phases of the society. Capitalism comes after the downfall of Feudalism. Capitalism refers to a process and a system where there is predominance in the use of capital or predominance in the use of productive resources. Economists do not agree with the sociological definitions and argue that a system in which there is predominance in the use of capital can refer to the capitalist process of production and not capitalism. Sociologists, on the other hand, argue that capitalism is an ideology. It represents not only a system but also a process. There was predominance in the use of capital prior to capitalism. As for example, towards the end of the feudal system certain mechanical tools, technology, skills and devices were used by Feudal Guilds (Industry) which were not necessarily the capitalist systems. So the use of productive resources representing a peculiar form of labour and capital relationships represents what is known as Capitalism as an ideology. So capital refers to the manmade, nature made, tangible and intangible things including those infrastructural provisions which become the

objects of labour. So capitalism is a system representing a peculiar form of labour capital relations during the process of Industrial production.

#### **2.6.4 Characteristics of Capitalism:**

Capitalism, as a system, has certain characteristics:

1. Capitalism is characterised in the use of private property.
2. Idea of inheritance (necessary for continuity of capitalist system).
3. Free enterprise.
4. Market oriented system of production.
5. A favourable Government is necessary for survival of capitalist system.
6. Rational organization of production.
7. Competition.

##### **1. Private Property:**

It refers to those productive resources including the capital which is exclusively owned by a single individual and his family. By appropriating more and more surplus value is used for more savings. Necessary amenities are provided. Tools and techniques are used by the rich mass. Private property also includes shares and debentures. Private property is the most important moving force which moves the capitalist system.

##### **2. Idea of Inheritance:**

It suggests that there must be a legal heir to succeed to such office after the death or withdrawal of the first owner. It is a process by which capitalist system perpetuates itself, maintains itself and survives.

##### **3. Free Enterprise:**

The capitalist system is such that the individual private capitalist exercises enough of freedom to innovate. Had there been no scope for innovation or freedom to the individual private capitalist, the capitalist system would not have survived today.

##### **4. Market oriented system of Production:**

This characteristic refers to the fact that every production is characteristically limited to the saleable goods. Every production is oriented towards market. Every individual private capitalist is interested to maximize his profit by increasing the sale of his product, more the sale more is the profit; more is the accumulation, more is the investment, more the investment



more is the production and sale. This makes the capitalist system survive. Production under capitalist system is not much for the domestic market. Greater interest of the capitalist is if his products reach the international market.

#### **5. Favourable Government:**

Capitalist system survives and maintains itself because of the presence of a favourable government. Government provides internal security and administrative support and protects the best interest of the capitalist. Marx says that state manages the common affairs of the bourgeoisie. Marx further said, "The ideas of the ruling class are the ruling ideas of every epoch." Marx says, "What the bourgeois does not want, the state does not do."

#### **6. Rational Organisation of Production:**

As a characteristic of capitalism, it basically refers to three things:

- ❖ Periodic planning
- ❖ Careful weighing out the means and ends.
- ❖ Periodic evaluation and market prediction.

It is because of these three things, capitalist system survives and maintains itself. If the capitalists do this then there is every chance of making more and more profit.

#### **7. Competition:**

There is perpetual competition. The competing product in the market and the direction of their sale are appropriately monitored. Every private capitalist desires that his product is the best to capture the best market. So unless otherwise the capitalist has such spirit of competition he cannot survive in the international competitive market.

#### **Origin of the Capitalism System:**

There are three explanations of capitalism and its origin.

1. Evolution of money, systematization of exchange process. Expansion of world market.
2. Declining of the importance of feudal system as well as the monopoly of the closed guilds.
3. Revolution from below, Revolution from the top.

There was a system called barter system, where commodities were exchanged for commodities. There was  $C \leftrightarrow C$ , a system of exchange which has created a lot of problems in the economic system. M (Money) evolved gradually which facilitated the exchange process better.

Here

$C \leftrightarrow M \leftrightarrow C - ME$

### **Monetary system**

Commodity exchange for money then money was evolved to purchase the commodity. This 'M' gradually becomes a factor of production.

$M \rightarrow C \leftrightarrow M \rightarrow CE$  (Capital Exchange)

Money is invested for production of commodity; then a price was there to sell these commodities; which is higher than the investment. This system is called capital exchange. There is an excellent sequence in the capitalist system. Capitalist system is always oriented towards accumulation of money. Every system has its expiry date. So there is declining of the importance of feudal system as well as the monopoly of the closed guilds.

There is always class struggle throughout the pages of history and struggle is nothing but revolution from bottom to top. The peasant serfs started revolutionary system as against the feudal lords. The industrial capitalists take the power of the feudal lords. Therefore, the revolution is from the top. Feudal system gets twist and the capitalist system gets expanded.

### **Capitalism as a process:**

With the growth of capitalist system there was:

1. Extreme polarization of classes.
2. Pauperization
3. Alienation
4. Dehumanization of Labour
5. Dictatorship of the proletariat
6. Shift from Capitalism to Socialism.

## **2.7. THEORY OF SOCIAL CHANGE**

### **2.7.1 Meaning:**

Change is a process. Change denotes any alternation, difference or modification that takes place in a situation or in any object through time. It

is the universal law of nature. It refers to the difference that exists between the past and the present situation. Change is an “on-going” process, No society remains completely static. Society is subject to constant changes. The term social change refers to changes taking place in human society. Basically the changes in human inter-actions and inter relations, indicate social change. Society is the net-work of social relationship. Hence, social change obviously implies a change in the system of social relationship. So any difference or any modification or transformation in the established pattern of human interaction and standards of conduct amounts to change. Abolition of child marriage, inter-caste marriage, and high status to Indian women is some of the important instances of social change.

### **2.7.2. Definitions:**

The meaning of the term “Social Change” can be better understood if we will discuss few definitions formulated by the eminent sociologists. Some of the important definitions are stated below.

MacIver and Page, “Social change refers to a process responsive to many types of changes, to changes in man-made conditions of life” to changes in the attitude and beliefs of men and to changes that go beyond the human control to the biological and physical nature of things.

Lundberg, “Social change refers to any modifications in the established patterns of inter-human relationship and standard of conduct.”

H.T. Mazumdar, “Social change may be defined as a new fashion or mode, either modifying or replacing the old, in the life of people or in the operation of society.”

From the above definitions it may be concluded that social change is:

- (i) A process.
- (ii) It is a change in social organisation that is the structure and functions of society.
- (iii) Social change means human change, which takes place in the life patterns of the people. Basically it refers to the change in social relationship.
- (iv) It refers to all historical variations in human societies. It means changes in all fundamental relations of man to man. Which includes changes in political institutions, class structure, economic systems, mores and modes of

living. From the analysis of the above definitions we come to know that the phenomenon of social change is not simple but complex. It is very vast and a complicated process. It is a process in which we always face problems in its conditions, forms, limitations, direction, sources, causes as well as consequences. But it would be worthwhile to analyse the nature of social change for clear understanding. The following natures of social change are discussed below.

### **2.7.3. Characteristics:**

#### **(1) Change is Social:**

Social change means a change in the system of social relationship. Social relationship is understood in terms of social process, social interactions and social organizations. So in any variation of social process, social interactions and social organizations social change-takes place.

In an instance it is found that society is like an organization, which never dies. New civilizations and societies come up by replacing old societies and thereby retaining some of its elements in its change. Thus social change is different from individual change. Its cause and consequences are always social which make it social.

#### **(2) Universal:**

Social change is universal. Because it is present in all societies and at all times. No society remains completely static. The society may be primitive or modern, rural or urban, simple or complex, agrarian or industrial, it is constantly undergoing change. The rate or the degree of change may vary from society to society from time to time but every society keeps on changing. A changeless society is an unreality.

#### **(3) Continuous:**

Social change is a continuous process but not an intermittent process. Because the changes are neither stopped nor the societies are kept in museum to save them from change. It is an on-going process without any break. In the process of change every society grows and decays, where it finds renewal and accommodates itself to various changing conditions. The sources, direction, rate and forms of change may vary time to time but it is always continuous.

**(4) Inevitable:**

Change is inevitable. It is the human nature that desires change and also it is his tendency to bring change and to oppose or accept change. Human wants are unlimited which always keep on changing. To satisfy these wants social change has become a necessity not only to him but also to the society.

**(5) Temporal:**

Social change is temporal. Change in anything or any object or in a situation takes place through time. Time is the most important factor and social change denotes time-sequence. According to Maclver, "It is a becoming, not a being; a process, not a product". Innovation of new things, modification and renovations of the existing behaviour take time. So a social change is temporary or permanent on the basis of time. Sometimes some social changes may bring about immediate results while some others may take years to produce results. Similarly, some social changes spread rapidly and also disappear rapidly. Movements, style, fashion and cults are the examples of this type. But in the biological process of ageing short time does not cause change.

**(6) Degree or rate of change is not uniform:**

Though social change is an ever-present phenomenon, its degree or rate or what we call the speed is not uniform. It varies from society to society and even in the same society from time to time. Sometimes the degree of change is high and sometimes low depending upon the nature of society like open and close, rural and urban and traditional and modern etc. For example, in the rural social structure the rate of change is slower because the rate of change is not governed by any universal law, whereas it is quick in the urban societies.

**(7) Social Change may be planned or unplanned:**

Social change takes place sometimes with planning and sometimes without planning. Social change which occurs in the natural course is called the unplanned change. The unplanned changes are spontaneous, accidental or the product of sudden decision. Usually the change resulting from natural calamities like flood; drought, famines, volcanic eruption, etc. are the instances of unplanned changes.

Here in this unplanned change there is no control on the degree and direction of social change. It is the inborn tendency of human beings that they desire change. So sometimes plans, programmes and projects are made effective by them to bring change in the society. This is called planned change. As it is consciously and deliberately made, there is every possibility to have control on the speed and direction of change. For example, the five years plan made by the government.

**(8) Social change is multi-causal:**

A single factor may cause a particular change but it is always associated with a number of factors. The physical, biological, demographical, cultural, technological and many other factors interact to generate change. This is due to mutual interdependence of social phenomenon.

**(9) Social change creates chain-reactions:**

Social change produces not a single reaction but chain-reactions as all the parts of the society are inter-related and interdependent. For example, the economic independence of women has brought changes not only in their status but also a series of changes in home, family relationship and marriages etc.

**(10) Prediction is uncertain:**

We can see some elements for prediction in social change. But the prediction we make is uncertain. It is because of three reasons. They are:

- (a) There is no inherent law of social change.
- (b) The forces of social change may not remain on the scene for all times to come.
- (c) The process of social change does not remain uniform.

Apart from the above characteristic features it may be said that social change can be qualitative or quantitative. It is a value free term as it does imply any sense of good or bad, desirable or undesirable. It is a concept distinct from evolution, process and development which are regarded as key concepts in the literature of social change.

#### **2.7.4. MARXIAN ECONOMIC THEORIES:-**

1. Law of Fetishism of Commodities
2. Labour Theory of Value
3. Theory of Surplus Value
4. Theory of Capitalist Exploitation
5. Law of Capitalist Accumulation.

##### **1. Law of Fetishism of Commodities**

Fetishism means the mystical character and contradictory nature possessed by the commodities. Every commodity has two values-use value for the consumer and exchange value for the owner. According to Marx, a commodity was a mysterious one because the social character of labour presented in the commodity appeared to the producer as an objective one. To quote Marx, "This fetishism of commodities has its origin in the peculiar social character of the labour that produces them". To Marx, this social character of labour demanded that the product must be not only useful to him, but useful to others. It should have a common quality i.e., Value.

##### **2. Labour Theory of Value**

Marx considered the labour theory of value a necessary step to arrive at the theory of surplus value which explains the exploitative nature of the capitalist society. In a capitalist society, a commodity is defined as a carrier of use value and exchange value. As a carrier of use value, it satisfies the human wants. As a carrier of exchange value, it possesses a quantitative relation with other commodities. Along with this double character of a commodity, there is a corresponding two-fold nature of labour. The one is useful labour, and the other is 'abstract' human labour. Useful labour produces commodities that satisfy human wants. Variety of human wants requires variety of use values. But labour alone cannot produce use value. Matter provides a material on which labour is to be exercised. Besides, a thing may possess use value, but may not require labour to produce it. Air, water, soil are some examples. If a thing is to be called as commodity, it must have exchange value and to have exchange value, it should have "something common". In Marxian economics, this something common is "The abstract human labour". The value of every commodity is simply the amount of

crystallized human labour which it contains, and commodities differ in value according to the different quantities of labour which are socially necessary to produce them". By "Socially necessary labour", Marx meant "labour- time necessary to produce any use-value with the given normal conditions of social production and the social average degree of skill and intensity of labour".

Further Marx emphasised that the value of a commodity would remain constant, if the labour-time required for its production also remained constant.

### **Criticisms:**

#### **This theory has been criticised on the following grounds:**

The argument that, value is the product of human labour is rather wrong because labour is not the only factor which determines value. All factors are necessary to produce a commodity.

(2) According to Marx, the exchange value of a commodity depends upon the amount of labour put in its production. He ignored the dominant role played by demand.

(3) It has been pointed out that Marx did not take into consideration the difference in the qualities of labour.

(4) Marx argued that any commodity which does not involve human labour will not have exchange value. But we find that in practical world, due to scarcity, good lands derive more exchange value.

(5) Critics argue that identical commodities may represent different amounts of labour. For example if old methods of production are employed, the amount of labour involved would be greater. Hence value would not be the same.

(6) It is purely an objective theory. It explains total value only.

(7) This theory is considered half-hearted. For if a chair made after 16 hours of hard labour cannot be used, it will have no value. Hence if labour is misdirected, the commodity will have no value.

### **3. Theory of surplus value:**

The theory of surplus value is the corner stone of Marxian economic theory. It provides the framework on the basis of which Marx has built up his theory of capital accumulation. To Marx, in capitalism, production was not simply production of commodities, but was production of surplus value.



The worker produces not for himself but for the capitalist. From capitalist point of view, that labourer alone is productive who produces a surplus. Under capitalism, labour power itself becomes a commodity and is bought and sold in the market. The main aim of the capitalist is to maximise profit. It is possible for him because labour power has the peculiar character of being able to create more value than is needed for its own production. In other words, the worker can produce more in a day's labour than is needed for his own subsistence. The capitalist pays only those wages with which the latter can purchase the means of subsistence. Thus Marx divided the labour into two kinds-necessary labour and surplus labour.

For example, let us assume that if a labourer works for eight hours a day to produce a commodity, it is sufficient to maintain himself. Then the exchange value of the product should be equal to 8 hours labour. But if the wages paid to the labourer are equal to four hours labour-this labour is the necessary labour and the remaining four hours is known as surplus labour. It creates surplus value which goes to the capitalist. Thus surplus value is the difference between the selling price of the commodity and the actual wages paid to the labourer. In a capitalist society the workers are thus exploited by the capitalists. Marx classified capital as constant capital and variable capital. Capital invested in stocks or raw materials or equipment's which directly assist the productivity of labour was called by Marx as constant capital. Capital spent for the purchase of labour power in the form of wages was called variable capital. According to Marx, it was only the variable capital which was capable of creating surplus value.

**There are three components of the value of commodity:**

- (a) Constant capital,
- (b) Variable capital and
- (c) Surplus value.

Suppose 'C' stands for constant capital, 'V' for variable capital and 'S' for surplus value, then the total value=C+V+S. The rate of surplus value will be

$$S = \frac{\text{Surplus value}}{\text{Variable Capital}} = \frac{\text{Surplus value}}{\text{Value of labour power}} = \frac{\text{Surplus labour}}{\text{Necessary labour}}$$

$$S=S/v.$$

The annual rate of surplus value can be measured by multiplying the surplus value by the number of turnovers of the variable capital in a year 'n'. Thus the annual rate of surplus value (as') will be

$$as' = S_n/V$$

The rate of profit is equal to the ratio of surplus value to total capital. It is  $S/C+V$ .

**Marx showed the relation of profit to the rate of surplus value as:**

$P_1 + S_1V/C+V$  in which

$P_1$  stands for the rate of profit,

$S_1$  for the rate of surplus value,

$C$  for constant capital and

$V$  for variable capital.

Marx also distinguished between absolute surplus value and relative surplus value. Absolute surplus value results from an increase in the number of working hours and the relative surplus value from reducing the real wages.

The extent of surplus value can be increased by raising the rate of exploitation.

**The capitalists can raise the rate of exploitation by the following ways:**

- (i) By increasing the working days of labourers,
- (ii) By increasing the productivity of labour and,
- iii) By reducing real wages.

**Criticism:**

**The Marxian theory of surplus value has been critiqued on the following grounds:**

1. Marxian theory of surplus value is derived from the labour theory of value. But there is no proof that labour alone creates surplus value.
2. In the real world, we are not concerned with values, but real tangible prices
3. Marxian theory ignores the demand side.
4. Marx exaggerated the scope of exploitation.
5. Critics have pointed out that the rate of profit is not only related to variable capital, but also depends on the demand and supply of commodities.

#### **4. Theory of Capitalist Exploitation:**

According to Marx, in a capitalist society, there are two classes of people-capitalists and workers. In a capitalist society all the means of production are owned by the capitalists. The workers, on the other hand sell their labour power to the capitalists. The capitalists produce the commodity with the application of labour to machinery and raw materials. Large scale production creates more employment opportunities to the workers. The act of production creates surplus. When the wages are paid less than the market value, exploitation arises. But over production is another characteristic feature of capitalism in which goods are produced for the market. So when the market contracts, unemployment of workers emerges. Again when market expands, labour power is required again. So such labourers who are temporarily employed form an industrial reserve army. In the industrial reserve army, the farmers who are expelled from land also join. It should be noted that in Marxian economics, capital means money used for exploitation. In a pre-capitalist society the producer sells his commodities for money. With that money, he buys the commodities of other producers for consumption purposes. So the cycle is C-M-C.

Here money simply performed the medium of exchange function. It was not used for the exploitation of any one. But under capitalism, production is done for profit. So the equation of exchange is  $M-C-M_1$  in which M stands for money or capital, C for commodity and  $M_1$  for money. The difference between M and  $M_1$  constitutes profit or the degree of exploitation. Thus the capitalist system grows. According to Marx, the capitalist is a vampire which thrives upon the blood of others and becomes stouter and broader the more blood it gets. But very soon in the very root of its expansion are the seeds of destruction.

#### **5. Law of Capitalist Accumulation:**

According to Marx, it is the surplus value that creates capital accumulation. Capitalists choose the method of increasing the productivity of labour to maximise their profit. In order to make improvements in the productivity of labour, the capitalists save the surplus value. They reinvest it to acquire a

large stock of capital and thus accumulate capital. In this Marx commented, "Accumulate, accumulate it that is Moses and the Prophets."

**Evil Effects:**

**The accumulation of capital gives rise to the following evil effects:**

- (1) Large scale production is controlled by a few persons.
- (2) There is concentration of rural population in towns which leads to an increase in the number of proletariat.
- (3) As a result of capital accumulation, there is a declining trend in profits.
- (4) Since in a capitalist system, there is no balance between production and consumption, an industrial crisis occurs. In order to compensate the falling profits, the capitalist try to increase the production, but consumption does not increase at the same rate. So there is over production and under consumption.
- (5) There is growth of unemployment and pauperism. With the accumulation of capital, technological improvements take up which reduces the demand for labour. So the labour class forms an industrial reserve army. Thus there exist a large mass of casual labourers and paupers.
- (6) The developments of joint stock companies and banking and credit facilities fasten the growth of concentration of capital.

Thus the General law of Capital Accumulation shows a cumulative process the higher the degree of accumulation, the greater the wealth of society, the greater the industrial reserve army, the greater the concentration of power in a few hands, and the greater the accumulation of misery.

**2.8. SURPLUS VALUE AND PROFIT:**

Marx's concept of surplus value plays an important role in his theory of capitalist development. It is therefore proper for us to explain his concept of surplus value and how it is related to profits earned by the capitalist-entrepreneur and exploitation of the workers which leads to the class struggle in the economy. The Marxian analysis of capitalism rests on the labour theory of value, which Marx took over from Adam Smith and Ricardo. According to Marx's labour theory of value, the value of a commodity is determined by the labour time necessary for its production. It is the labour alone that is the

ultimate source of all value. According to Marx, equipment and raw materials do not create value – they merely transfer their own value to the value of the final product. On the other hand, labour creates more value than the value of labour power expended on the production of goods and services. In other words, it is the unique characteristic of labour power that it creates more value than its own value. The value of labour power is determined by the cost of reproduction of labour, that is, by the value of goods and services that are required to maintain the labourers at the minimum subsistence level. In other words, the value of labour power, that is, the own cost of labour, means the minimum subsistence wages which are just sufficient to keep the labourers living and intact.

Labour theory of value and the concept of value of labour power as being equal to the minimum subsistence level are crucial in Marxian theory because they form the basis of Marx's theory of surplus value which in turn explains the distribution of aggregate income into wages and profits in a capitalist economy. Since labour creates more value product than its own cost or value of labour power, that is, more than the minimum subsistence output, the surplus emerges which is expropriated by the capitalists who happen to own the material means of production such as capital equipment, land and raw materials with which labour is employed to produce goods and services. This surplus value represents profits of the capitalists. According to Marx, the surplus value or profits which are created by labour over and above the value of their subsistence requirements are unjustifiably expropriated by the capitalist class. In other words, the surplus value or profits extracted from labour by the capitalists represents the exploitation of labour.

It is through the ownership of material means of production that the capitalists are able to exploit the labour class and extract surplus value from it. Thus the share of profits in the total value of output depends upon the magnitude of surplus value extracted from it. Prof. Patterson rightly remarks, "The notion of surplus value is crucial to the Marxian theory of income distribution; surplus value is the source of profits and thus the amount of surplus that can be expropriated by the capitalist class will determine the relative share of profits in the income total."

In the Marxian analysis, the total value of output is composed of three elements. Firstly, it consists of the value of the capital and raw materials consumed in the production of goods and services. Marx calls this as constant capital which is written as C. Secondly, the total value of output contains the value of labour power used in the production of goods and services, that is, total wages in terms of minimum subsistence wages paid to the workers. Marx calls this as variable capital which is written as V. Thirdly, the total value of output contains the surplus value which is created by the labourers over and above the value of their labour power and which, as seen above, is bagged by the capitalist class as profits.

Thus –

$$p = \frac{S}{V+C} \quad \dots(1)$$

Total value output = constant capital + variable capital + surplus value  
= C+V+S

C, as said above, stands for capital consumption. It should be noted that in case of the whole economy C will contain only the consumption of fixed capital, since raw materials are intermediate products and their value will be included in the value of final goods produced. If we subtract the value of C from the total output, we get the net output which will consist of value of the labour power or variable capital (V) and the surplus value (S). V and S are wages share and profits share respectively in the net output. Thus –

Net output = V+S

If Y stands for net national output, then

$$Y = V+S$$

$$\text{or Surplus value, (S) = Y— V}$$

That is, surplus value (S) is equal to net national income minus the variable capital (i.e., wages). The rate of surplus value or what Marx called ‘degree of exploitation’ is given by the ratio S/V. It is this rate of surplus value S/V which represents the ratio of profits share to the wages share in the national income. A rise in this ratio means the increase in the rate of exploitation and hence increases in the profits share relative to wages share in the national income. However, the rate of profit in Marx’s theory is given by the ratio of

surplus value (S) to the total capital, that is, variable capital (V) + constant capital (C). Thus rate of profit (p) is given by-

We further elaborate it by dividing the denominator in equation (1) by variable capital, V. In doing so we have-

Where, C/V, that is, ratio of constant capital to the variable capital was called by Marx as 'organic composition of capital' which in modern terminology is called capital-labour ratio or simply capital intensity. From equation (2) above it follows that with economic development as technology becomes more capital-intensive, the organic composition of capital (that is, capital-labour ratio) C/V rises through time and rate of profit (p) falls unless rate of surplus value S/V rises.

However, Marx expected that rate of profit can be kept high by increasing the surplus value. Only when a large accumulation of capital has taken place and as a consequence reserve army of labour is exhausted, wages will go up resulting in decline in profit. Even then the capitalists try to keep wages down

$$\begin{aligned} \text{rate of profit (p)} &= \frac{\frac{S}{V}}{\frac{V+C}{V}} \\ &= \frac{\frac{S}{V}}{1 + \frac{C}{V}} \quad \dots(2) \end{aligned}$$

by substituting more capital for labour. This will, on the one hand, lead to the 'immiseration of workers' causing social upheaval and on the other hand, would raise the 'organic composition of capital' (C/V) which will lower the ratio of profit.

**Capital Accumulation, Technological Progress and Economic Growth:**

Unlike other classical economists Marx considered technological change rather than profits as the primer driver of economic growth in capitalist economies. According to him, technological changes in each stage of a country's economic development determine not only the economic situation, but also the production relations in a society. Thus, according to him, the hand mill created the feudal landlord and steam mill the capitalist.

Marx explained his theory of development with his assumption that labour supply is perfectly elastic at the subsistence wages. The capitalist engages workers for the production of goods and these workers create surplus value which is reinvested to increase capital accumulation. But Marx believed that capital accumulation along with technological progress increases labour productivity and brings about economic growth. But Marx regarded technological progress as being labour-saving and capital-using. Thus, according to Marx, with further economic development there was tendency for capital per worker to rise. With wages remaining sticky at subsistence level, the more surplus value is created by workers which are invested in new capital goods of capitalist mode of production brought about the destruction of handicrafts, that is, the simple commodity production by craftsmen and artisans. This is because the craftsmen could not compete with the goods produced with the aid of machines. This led to the decline of simple commodity production of handicrafts by craftsmen. With the destruction of handicrafts, capitalist mode of production became the dominant mode of production. The change from small-scale production of handicrafts by craftsmen to large-scale industrial production with the aid of machines in a factory system was, without doubt, a big stride forward in the development of the productive forces. Machines proved to be powerful means by which man could tame the forces of nature. Machines also lightened labour of workers and considerably raised their productivity.

With further inventions and development of science and technology, the machines became bigger and more sophisticated. The exploitation of the workers and plunder of colonies by the capitalist class and consequently concentration of wealth in its hand enabled this class to invest more and more in machines and factories. This ensured a higher rate of capital formation and industrial growth in the Western European countries. It is worthwhile to note that at that time the propensity of the capitalist class was not so much 'to consume' but 'to accumulate'. The function of the capitalist, according to Marx, is to 'accumulate and it is primarily because capitalist system offered stimulus to accumulation of capital that Marx recognized the historical role performed by it in the development of the Western economies. Having high



propensity to save the capitalist class invested the surplus value extracted from the workers. 'To accumulate' was passion with the capitalists in the earlier phases of capitalism. This generated a higher rate of capital formation and consequently of economic growth.

### **Technological Progress and Capital Accumulation:**

But technical progress can be achieved only if there is capital accumulation. As a result, the competition among the capitalists seeking to increase the surplus value forces them to accumulate capital, that is, to make investment. But in the Marxian scheme, as has been pointed out by Kaldor, capital accumulation or investment activity is not motivated by the lure of profit, but it is the necessity forced on them by the competitive struggle among the capitalists.

We thus see that as technical progress and capital accumulation proceed apace and capitalist economic system develops, the surplus value extracted from the workers or rate of their exploitation will increase as a result of the competitive struggle among the capitalists. Consequently, with the development of capitalist economic system, the relative share of wages (labour's share) in the national income will fall and the relative share of profits (capitalist's share) will rise. Therefore, the development of the capitalist economy involves the steady worsening of the living conditions of the working classes. This has been called by Marx as "the immiseration of the proletariat" or "the law of increasing misery of the working classes." According to this law, technical progress and capital accumulation in a capitalist society and consequently the growth in the national income must lead to the fall in the relative share of wages in the national income and the rise in the relative share of profits.

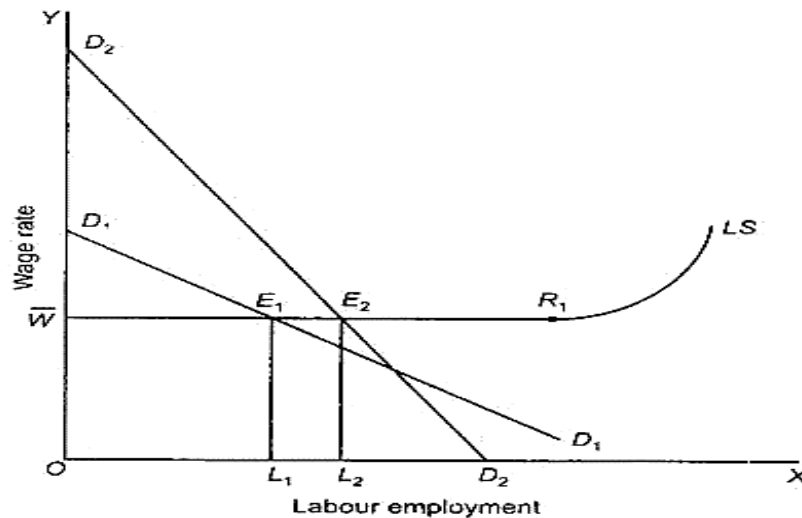
It is thus clear that about the changes in the relative share with development of the capitalist system Marx reaches a conclusion which is diametrically opposed to the conclusion of Ricardo who thought that with the development of the capitalist economy, relative share of wages will increase and the relative share of profits will decline. Professor Patterson rightly points out that in the Marxian macroeconomic model of income distribution "the fundamental cause of decline in the relative share of wages is technical

progress, the fruits of which entirely go to the owners of the physical instruments of production. The alleged increasing misery of the working class does not come from any decline in the level of real wages, since their 'misery' does not increase in any absolute sense; it is the result instead of the failure of real wages to advance along with gains in productivity. This is the heart of Marx's theory of distribution."

**Graphical Illustration of Marxian Model of Development:**

Marxian model of economic development is illustrated in Fig. 2.5 through demand and supply curves of modern economics. It represents the labour-market in the modern capitalist sector. Note that demand curve of labour represents marginal product (MP) of labour as more labour is employed. In Fig. 2.5, the vertical axis represents the wage rate in the modern capitalist sector.  $\bar{W}$  represents the subsistence level of wages and as per Marx's theory labour-supply curve LS is perfectly elastic at this subsistence wage level  $\bar{W}$  over a long range of expansion in labour employment. With a given initial stock of capital ( $K_1$ ), labour demand curve is given by  $D_1D_1$ , which cuts labour-supply curve LS at point  $E_1$  and determines  $OL_1$  level of labour employment at the subsistence wage level  $\bar{W}$ . If  $\bar{W}R_1$  represents the number of workers seeking employment at the subsistence wage  $\bar{W}$ , then out of this, with the given initial capital stock and demand for labour  $D_1D_1$ ,  $\bar{W}E_1$  ( $= OL_1$ ) will be employed and  $E_1R_1$  will constitute reserve army of labour (i.e., unemployed workers). The area  $OL_1E_1 \bar{W}$  is total wages earned by workers where  $\bar{W}E_1D_1$  represents the surplus value extracted by the capitalists from workers. This surplus value will be reinvested. This will promote capital accumulation over time. However, Marxian theory of capital accumulation is not of the type of capital widening in which investment is made in the same type of capital goods. In his theory technological progress takes place along with capital accumulation and the new capital goods or machines in which investment is made embody new and more productive labour-saving technology. As a result, labour employment grows much slowly than growth of output. In Fig. 2.5. The effect of labour-saving bias of new technology embodied in the new machines or capital goods is represented by the change in labour demand curve to a steeper curve  $D_2D_2$  which cuts the initial labour

demand curve  $D_1D_1$  from above at point  $E_2$  and determines labour employment



**Fig.2.5. Marx Model of capitalistic development**

equal to  $OL_2$ . Thus with the use of new capital goods embodying new labour-saving technology while there is a large increase in output from  $OL_1E_1D_1$ , ( $=\Sigma MP_s$ .) with labour employment  $OL_1$  to the output  $OL_2E_2D_2$  with labour employment  $OL_2$ . On comparing we find that the increase in labour employment is much less than the growth in output.

Thus wage remaining fixed at the subsistence level  $\bar{W}$ , the capital accumulation embodying labour-saving new and improved technology would create higher surplus value for further investment and growth. Besides, use of labour-saving technology will create unemployment while labour force is growing. As a result, according to Marx, reserve army of labour will never be exhausted. The process of capitalist development with rapid capital accumulation and use of labour-saving technology necessarily involves rapid increase in income inequalities as in his model wages remain at the subsistence level and technological unemployment prevails on a large scale due to slow growth of employment opportunities. These increasing inequalities will create conflict between the working class and capitalist class. These will, according to Marx, lead to violent revolution in which capitalism will be eliminated and in its place socialism based on public ownership of property will come into existence.

### **Emergence of Under-Consumption, that is, Over-Production:**

Another related form of inner contradictions exists in the capitalist mode of production which also causes its downfall. This form of contradiction leads to under-consumption or what is also called over-production, that is, lack of demand for goods which, according to Marx, causes periodic depressions and economic crises. In order to increase the surplus value, capitalists introduce new machines embodying higher technology. This raises, in Marxian terms, the organic composition of capital, which in modern terminology means capital-labour ratio. The rise in capital-labour ratio and the technological displacement of labour in handicrafts as a result of the use of technically superior new machines causes the reserve army of unemployed to increase. This mounting unemployment of labour also enables the capitalists to keep the wages of labour at the bare subsistence level and appropriates all gains in labour productivity. The low level of employment as well as low wages of labour creates meagre incomes or purchasing power for the workers who constitute a majority in the society. This creates the problem of lack of effective demand for goods or what is called by Marx as under – consumption. As a result, the goods produced on a mass scale by the capitalists cannot be sold. This results in depression or economic crisis.

### **Cut-Throat Competition:**

It follows from above that Marx attempts to explain how capitalism itself will generate conditions which will bring about its end and replace it by socialism. For a time, he says, capitalism will flourish. The capitalists will become richer and richer, but will at the same time become fewer and fewer, the bigger whale swallowing up the smaller fish on account of the cut-throat competition among them; Production will expand resulting in scramble for markets abroad. This will lead to imperialist wars, one war followed by another and more terrible than the preceding one till capitalism perishes in the conflict through workers overthrowing the system through revolution.

Thus, the law of capitalistic production itself will result in expropriation of the capitalists when capital is centralised. “Along with the constantly diminishing number of the capitalists who usurp and monopolise all gains in production, grows the mass of misery and exploitation of working classes. But

with this grows the revolt of the working class, a class which will increase in numbers.

The time will come when the monopoly of capital will become a fetter upon the capitalist mode of production. Then the knell of capitalist private property will sound. The expropriators will be expropriated. Colonialism and imperialism can lend only temporary respite by supplying cheap raw materials and market for the manufactured goods. But they will also give rise to colonial and imperialist wars resulting in mutual destruction of the capitalist powers. Thus, according to Marx, capitalism will collapse on account of the growing

$$P = \frac{S}{C+V}$$
$$P = \frac{S}{V} \cdot \frac{V}{C+V}$$

conflict between labour and capital. Then a new economic and social order represented by socialism will be established, in which private property will disappear and the State will wither away.

### **Falling Rate of Profit and Collapse of Capitalism:**

Although Marx concluded that the relative share of profits will increase with the development of capitalistic economic system as a result of technical progress and capital accumulation, he, however, following Ricardo, took the view that with capital accumulation the rate of profit will be falling. It should therefore be carefully noted that in view of Marx, whereas relative share of profits increases, the rate of profit declines as the capitalist economy develops. This looks like a contradiction but Marx proved their co-existence. But unlike Ricardo, Marx did not explain the falling rate of profit on the basis of operation of diminishing returns. He explained this tendency of declining rate of profit on the basis of the increase in what he called the “organic composition of capital”. Organic composition of capital is the ratio of constant capital (C) to the total capital (C + V). Thus organic composition of capital is  $C/(C+V)$ . Now, the rate of profit is equal to the ratio of surplus value (S) to the total capital (C+V) employed, that is, rate of profit is equal to  $S/(C+V)$ .

Let P stand for the rate of profit. We then have the following relationship –

$V/(C+V)$  is the ratio of variable capital to the total capital. If we subtract  $C/(C+V)$  from 1, we will get the ratio of variable capital to the total capital [or  $V/(C+V)$ ]. Therefore – Where,  $C/(C+V)$  is organic composition of capital.

From the above equation it follows that if the  $S/V$  (the rate of exploitation) remains constant, the, i.e., rate of profit will decline  $C/(C+V)$  if, i.e., organic composition of capital increases. Thus while holding that relative share of profits will increase, Marx also took the stand that the rate of profit will decline in the capitalist economy as a result of capital accumulation and consequent increase in the organic composition of capital. In the modern terminology we can say that Marx was of the view that as more capital is accumulated and capital-output ratio rises in the productive processes or, in other words, as more capital-intensive production techniques are employed, the rate of profit will fall.

**Critical Evaluation of the Marxian Analysis of Capitalism:**

Marxian theory has been criticised on several grounds. Marx has proved to be a bad prophet. Predictions which he made on the basis of his theory have not

$$P = \frac{S}{V} \left( 1 - \frac{C}{C+V} \right)$$

come true and the actual events have not taken the Marxian line. Marx had predicted that relative share of wages in the national income would fall and the economic conditions of the workers would deteriorate. All this has not come true. Empirical research has found that share of wages in the national income has remained constant in the Western capitalist countries instead of falling as predicted by Marx. The workers have obtained a due share from the increases in physical productivities brought about by the technical progress and capital accumulation in the capitalist countries. As a result, in absolute terms the living conditions of the workers have greatly improved so that they have now become less revolutionary.

Besides, there has not been found any tendency for the falling rate of profit. On the basis of the falling rate of profit and the concentration of purchasing power in the hands of the few, Marx predicted that the capitalist economies would have periodic crises and ultimately the system would collapse. Actual events have falsified this gloomy forecast of Marx. Of course,

there have been trade cycles in these economies but in spite of these short-run fluctuations capitalist economies have made phenomenal progress in the last 200 years or so, so that they have now become affluent countries. Prof, Patterson rightly remarks, “Marx thought the capitalistic system would be increasingly wrecked by crises of greater and greater severity until finally it would collapse amid an uprising of the working class that would usher in the era of Communism. Marx proved to be a bad prophet concerning not only the behaviour of the wage share in the national income, but also the long-term development of capitalism.’

Further, there is a great theoretical flaw in Marx’s contention of falling rate of profit with the increase in organic composition of capital. Several authors have pointed out that law of the falling rate of profit cannot really be derived from the law of the increasing organic composition of capital. Since Marx believes that the real wages of the workers remain fixed at the subsistence level, then as a result of increase in organic composition of capital due to capital accumulation and technical progress, the output per head will greatly increase and, given the real wages constant at the subsistence level, the surplus value (i.e., the profits) earned by the capitalists will greatly increase and will secure a rising rate of profit.

Lastly, Marx’s theory of income distribution under capitalism is based upon the labour theory of value which is not acceptable to the modern economists. Marx’s analysis of surplus value or exploitation of labour is directly based upon his contention that all value is created by labour and capital merely transfers his own value to the value of the commodity. Capital adds greatly to the productivity of the process and does create a good deal of value. To deny this is to show one’s prejudice. Therefore, Marx’s thesis that value of a commodity is determined by the necessary labour time required to produce it is quite obsolete and not acceptable to the modern economists. Thus when labour theory of value is wrong, the theory of surplus value and exploitation based upon it falls to the ground.

One of the successful predictions of Marx was that the process of capitalist development leads to the increase in inequalities of income distribution and concentration of wealth in few hands. As seen above, incomes

of workers are reduced relative to the profits made by the capitalists by the use of the labour-saving nature of new technology in the modern industrial sector. This is borne out by the experience of developing countries like India where ever since the initiation of economic reforms based on the Washington Consensus of liberalisation, privatisation and globalisation, income inequalities have greatly raised. Where the rich have become very rich, the reduction in poverty is far less. In developing countries where trade movement is weak, labour is ruthlessly exploited.

Besides, it goes to the credit of Marx by pointing out in his model that capital accumulation and technological improvement are drivers of economic growth. While classical economists emphasised rapid capital accumulation for accelerating economic growth, they underestimated the role of technological progress in sustaining economic growth. Marx, on the other band, laid stress on both capital accumulation and technological progress in determining growth of output. In fact, as explained above, Marx visualised the accumulation of new capital goods (i.e., machines) embodying new improved technology. This is highly relevant for developing countries which aim at accelerating economic growth. However, for generation of adequate employments opportunities, efforts should be made that the new technology used is labour-using rather than labour-displacing. Further, Marx's model gives an important insight into the problem of unemployment faced by developing countries (including India). The developing countries like India have achieved rapid industrial growth through large increase in capital accumulation but growth of labour employment in the modern industrial sector has been very slow while, on the other band, increase in labour force has been high due to rapid population growth.

## **2.9. SCHUMPETER AND CAPITALISTIC DEVELOPMENT**

Schumpeter's theory of development assigns paramount role to the entrepreneur and innovations introduced by him in the process of economic development. According to Schumpeter, the process of production is marked by a combination of material and immaterial productive forces. The material productive forces arise from the original factors of production, viz., land and



labour, etc., while the immaterial set of productive forces are conditioned by the 'technical facts' and 'facts of social organization'. The Schumpeterian production function can, therefore, be written as –

$$Q = f [k, r, l, u, v] \dots (1)$$

Where, Q stands for the output, k for the Schumpeterian concept of “produced means of production”, r for natural resources, l for the employed labour force. The symbol u represents the society’s fund of technical knowledge and v represents the facts of social organization, i.e., the socio-cultural milieu within which the economy operates. The above function shows that the rate of growth of the output depends upon the rate of growth of productive factors, the rate of growth of technology and the rate of growth of investment friendly socio-cultural environment. Schumpeter held that the alterations in the supply of productive factors can only bring about gradual, continuous and slow evolution of the economic system. On the other hand, the impact of technological and social change calls for spontaneous, discontinuous change in the channels of output flow. Thus taking into account these two types of distinct influences Schumpeter distinguished two components in the dynamic evolution of the economy – (a) the “growth component” which brings about gradual, continuous and slow evolution due to the changes in the factor availability, (b) the “development component” which brings about spontaneous and discontinuous change in the channels of output flow due to changes in the technical and social environments.

Schumpeter regarded land to be constant. The growth component will, therefore, include only the effects of changes in population and of increase in the producer goods. But Schumpeter further maintains that there does not exist any a priori relationship between the changes in population and the changes in the flow of goods and services. In other words, Schumpeter considers the population growth to be exogenously determined. Now, the increase in producer goods results from a positive rate of net savings. The major part of savings and accumulations are attributed by Schumpeter to profits. But, according to him, the profits can arise if innovations such as new techniques of production are employed or if new product is introduced. Hence ultimately it is the change in the technical knowledge (i.e., variable u) which

is responsible for any change in the stock of producer goods, i.e., the rate of capital accumulation directly depends on the rate of technical change. Regarding the historical development, Schumpeter subscribed to Marx's materialistic interpretation of history and he maintained that the economic state of people emerges only from the preceding total situation. However, the most important point of Schumpeter's theory is that the expansion of output depends upon the history of technological development. In simple words, we can say, according to Schumpeter, the growth of output is geared to the rate of innovations. No doubt, Schumpeter holds that the trend of economic growth shall be fixed by the exogenous variable of population growth, yet according to him, the process of economic development is synonymous with discontinuous technical change, i.e., innovations. The agent which brings about innovations is called by Schumpeter as entrepreneur. Thus, entrepreneur becomes the pivot of Schumpeter's model.

**Role of Entrepreneur as an Innovator:**

In economic development as outlined by Schumpeter, the entrepreneur plays a key role. The credit for innovations and the outburst of economic activity goes entirely to the entrepreneur.

**Innovation consists in:**

- (i) Introduction of anew good,
- (ii) Introduction of a new method of production,
- (iii) The opening of a new market,
- (iv) The discovery of a new source of supply of raw materials or semi-manufactured goods, and
- (v) Introduction of a new organisation in an industry.

In a world characterised by a high degree of risk and uncertainty, only businessmen of exceptional ability and daring will be able to undertake innovations and launch enterprises and exploit opportunities for profit. But these entrepreneurs are not only lured by profit but are also motivated with a desire to found a dynasty in the business world or a desire for conquests in the competitive world or have the joy of creating. Thus, in the Schumpeterian analysis, the role of the entrepreneur is a determining factor of the rate of economic growth. In his absence the growth rate is bound to be slow. The

supply of entrepreneurs depends not only on the rate of profits (which is obvious) but also on the favourable social climate. They will appear and continue only in a society which honours them, where prestige is attached to them and the social rewards or recognition they are able to earn. In short, the conditions or social values in which they have to operate must be favourable. The rate of profit is an unfailing thermometer of the favourable climate. Any tendency to squeeze profits, increase taxes, intensify welfare programmes, strengthening of the trade union movement or measures of redistribution of income will deteriorate the climate for investment and so for economic development.

### **Role of Credit:**

Another new point introduced by Schumpeter in this analysis of economic development is the important role that credit plays in economic development. It is not the saving out of current income which supplies funds for investment, but the credit creation by the banking system. The classical and the neoclassical economists thought in terms of given supply of money or the supply coming forth to match the increased supply of goods and services, so that the price level is not affected. To them “money is a mere veil which tends to hide the behaviour of the basic forces at work”.

But Schumpeter makes credit creation an integral part of the development, process. In this analysis the entrepreneurs expand their business merely by borrowing from banks who will lend not because some persons have made savings and deposited in the banks. But the banks just create credit themselves to accommodate the business borrowers. This pushes up the prices. “Thus credit- creating facilities tend to free investors from the voluntary abstinence routine of the savers. Forced savings become an important means of capital accumulation.” Two points are worth mentioning in regard to Schumpeter’s analysis of development process in a capitalist society. In the first place, the dominance of the entrepreneur or the producer limits and reduces correspondingly the sovereignty of the consumer. The producer does not passively produce the goods as dictated by consumers’ tastes and preferences. By his dynamic role, through high pressure of

salesmanship, he attempts and succeeds fairly in changing even the tastes of consumers or in creating in them new wants and desires.

This again emphasises the crucial role of the entrepreneur in giving new directions and dimensions to the development process. Secondly, unlike the neoclassical economists who believed that the process of economic development was gradual and harmonious, Schumpeterian analysis brings out the uneven and disharmonious nature of economic growth. It proceeds by spurts and leaps and bounds. "The essence of development is a discontinuous disturbance of the circular flow." This disturbance appears in the form of innovations. This arises from the fact that the world is dynamic and not static. In the static world rational calculations are possible and reasonable forecasting is feasible, but the dynamic world is full of risk and uncertainty mainly arising from the innovation activity of the entrepreneur who is able to exploit new investment horizons.

### **Capitalism- Its Potentialities and its Degeneration:**

The classical economists were depressed by the inexorable law of diminishing returns and the irresistible growth of population. Schumpeter does not share their pessimism. He also does not believe in the inherent tendency towards a mal distribution of incomes resulting in ever-recurring severe crises as Marx did. Nor does he agree with the stagnation that there is persistent lack of investment opportunities together with institutional rigidities making for an equilibrium at less than full employment. Schumpeter, on the other hand, has faith in the capacity of the capitalist system in attaining ever increasing levels of national output and income. He is prepared to admit, however, that there might be temporary setbacks.

Although Schumpeter has infinite faith in the potentialities of capitalism, but he also believes in a Marxian fashion that the very success of capitalism will breed the germs of its ultimate degeneration which will pave the way for socialism. In Schumpeter's view, it is not failure of capitalism which will spell its doom, but its very success that would result in killing the goose that lays the golden egg. He thus says – "The actual and prospective performance of the capitalist system is such as to negative the idea of its break-down under the weight of economic failure, but its very success

undermines the social institutions which protect it, and inevitably create conditions in which it will not be able to live and which strongly point to socialism as the heir apparent.” In other words, it is not the economic barriers but social factors which will undermine capitalism.

**According to Schumpeter, the economic and social foundations of capitalism will crumble on account of:**

- (a) The decay of the entrepreneurial function,
- (b) The destruction of the institutional framework, and
- (c) The disintegration of the protecting political framework.

The entrepreneurs make their business grow so big that innovation itself becomes a routine and is in the charge of salaried persons and technological progress now becomes the province of specialists; marketing and administration become automatic. “Innovation thus degenerates into a depersonalised routine activity carried on in big business through a bureaucracy of highly trained managers.” This is how the entrepreneurial function is rendered obsolete. The concentration of business and the growth of monopolies destroy the institution of private property and freedom of contract. Whereas ‘bigness’ contributes to more rapid economic progress, it also weakens the concepts of private property and freedom of contract. In a big business corporation, the proprietary interest is replaced by shareholders, big and small, none of whom is particularly interested in the business. The part that the proprietor used to play is now played by professional salaried managers. The social class that used to protect capitalism also loses its political power which is captured by a new group of politicians who are ill-equipped to rule and unwilling to support the established trade and industry. They adopt policies inimical to capitalists’ interest. This is what we are witnessing in India. The common people and many politicians are now positively hostile to big business like the Birlas, Tatas and Ambanis. The intellectuals who derived freedom and power from capitalism now lead the anti-capitalist groups. The educated unemployed is another group of ‘have-nots’ against the capitalist class of ‘haves’. Labour also organises itself for fight against capital and the intellectuals supply the leadership. All these new forces lead to the gradual degeneration of capitalism and strengthen the

movement towards socialism. Capitalism cannot function in this new atmosphere.

**Apart from differences in emphasis, three major differences may be noted between the Classical School of Marx and the Schumpeterian analysis:**

(a) Schumpeter introduces interest rate as a determinant of savings which is an important factor in economic development',

(b) He separates the autonomous investment from the induced investment and emphasises innovations as the factor affecting autonomous investment; and

(c) He regards entrepreneurship as the vital force which shapes an economy.

**Evaluation of Schumpeter's Theory of Development:**

Schumpeter has been a great 'theorist' whose writings contain brilliant thoughts and a deep insight into the working of an economy. However, his analysis of the entrepreneurial innovations is not applicable to modern conditions in which the act of invention and innovation is carried on not by individual entrepreneurs but by large corporations as a routine affair. It is not possible to identify entrepreneurs who introduced many actual innovations. He himself recognises the tendency towards obsolescence of the entrepreneur. It has been pointed out by critics that what Schumpeter gives is the theory of business cycles and not an analysis of economic development. Even Schumpeter's analysis of business cycles can be accepted only with some modifications to suit modern economic conditions. According to Schumpeter, crisis in capitalism is brought about by maladjustment caused by waves of innovations. But big businesses in modern times can absorb these waves and produce steadier and larger expansion of the total output. Further, the main cause of business cycles is fluctuations in aggregate demand as pointed out by J.M. Keynes.

The assumption that innovations are financed by borrowing from credit creation by the banks is also not very realistic. It is a well-known fact that most of the bank loans are short-term loans whereas the implementation of innovations requires long-term finances. The long-term projects are financed by retained profits or by the issue of shares and debentures by the companies

concerned. Schumpeter's socio-economic analysis of the capitalist process is also not fully convincing. He seems to overemphasise the influence of economic factors on social culture. It is not one-way link between rationalism in economic matters and rationalism in other fields, social and political. Not many would agree that capitalism was about to crumble and socialism was round the corner.

Capitalism in countries like the U.K. and the U.S.A. which were its traditional homes too strongly established themselves to yield place to socialism. Only, we can say with him that the nature of capitalism has changed. There is no doubt that the political strata protecting the old type capitalism are weakening and the traditional entrepreneurship too is becoming obsolete, as Schumpeter said. But it does not mean that capitalism is about to collapse and socialism is coming. On the contrary, it is socialism that collapsed in eighties of the 20th century. In both Soviet Russia and Republic of China socialism came to end and in its place free-market economy came into existence. Meier and Baldwin rightly write- "Although Schumpeter's analysis is provocative, it seems one-sided and overemphasised. To recognise that history involves perpetual change is quite different from concluding that a socialist form of society will emerge from an equally inevitable decomposition of capitalist society."

### **Relevance of Schumpeter's Theory for Developing Countries:**

The conditions obtaining in Western Europe and America after the First World War presented a capitalist system in full swing, wherein the innovator acted as the initiator and controller of economic development. Schumpeter's observant eye got the clue to formulate a theory of development presenting a unified view of the whole economic process. Schumpeter viewed "development" as a distinct phenomenon which, he says, "is spontaneous and discontinuous change in the channels of flow, disturbance of equilibrium, which forever alters and displaces the equilibrium state previously existing." This springs from changes in the economic life due to endogenous factors (initiated from within) and not exogenous factors which are forced upon it. Explaining his contention further, he holds that "Should it turn out that there are no such changes arising in the economic system itself, and that the

phenomenon that we call economic development is in practice simply founded upon the fact that the data change and the economy continuously adapts itself to them, then we should say that there is no economic development.” This concept wherein endogenous changes in the economy act as the sole prime mobile of development restricts the relevance of Schumpeter’s theory to the growth problems of developing economies.

Rigid and outmoded socio-economic institutions, low saving potential and laggard technology are completely incapable to generate developmental impulses from “within” in the underdeveloped countries. They have to take recourse to imported capital, technology and skill to initiate and propel their developmental wheels. For instance, India made a big stride forward in growth and it has sought foreign capital to help in its economic development. It has also gone for foreign collaboration in terms of loan, equipment, skill and technical know-how. Since factors from ‘without’ are responsible for initiating and operating development projects, they cannot, according to Schumpeter, be regarded as embodiments of India’s genuine process of economic development. This contention of Schumpeter is unsustainable and unconvincing. It cannot be gainsaid that every such plant has generated a developmental wave in the Indian Economy. Thus, Alfred Bonne remarks, “Exclusion from Schumpeter’s definition would not make the new plant cease to be a case of development, having in view precisely those goods which are the essential objectives of development activities in economically backward countries.” In this view, therefore, Schumpeter’s theory of development is incongruent with the conditions prevailing in the developing world.

Further, Schumpeter’s preoccupation with only the endogenous factors and his insistence on development as embodying only the spontaneous and discontinuous changes makes him oblivious of the role of population growth as an economic force in the developmental process. He regarded population as exogenously determined and held that there does not exist any deterministic a priori relationship between population growth and variations in the flow of goods and services. But it is precisely the excessive population pressure that is responsible for revolutionising the methods and techniques



of agricultural production in the presently overpopulated developing countries.

In fact, some of the post-Keynesian theories regard population growth as a stimulant for autonomous investment. By failing to take proper cognisance of one of the most vital phenomena operating in the presently underdeveloped economies, Schumpeter rendered his theory almost ineffectual to such countries. Further, the existence of a business elite, i.e., the entrepreneurial class, is fundamental to Schumpeter's theory of economic development. The carrying out of innovations and using new production functions is the prerogative of this elite group of private entrepreneurs. However, there are serious doubts about the effectiveness of this social group in the development of the developing countries. The contemporary history of economic development of these countries provides ample evidence to reveal that it is not only the private entrepreneurial class, but also the national governments that are responsible for preparing and launching programmes of industrialisation.

With the development process of these countries being rapidly imbued with the socialistic hues, their governments have increasingly assumed the role of a national entrepreneur. Not the innovations of the private entrepreneur but the "government action and mass impulses today seem to be the most characteristic motive forces of economic development." So much so that even in the private sector of these economies the entrepreneurs cannot fulfil their functions without the active and substantial assistance from the government and semi-public bodies. Moved by such a un-Schumpeterian economic landscape in the developing countries, Prof. Gunnar Myrdal remarks that "it represents, indeed, an attempt at a complete reversal of what once happened in the now developed countries as described by the Schumpeterian model."

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**UNIT – III**  
**APPROACHES TO DEVELOPMENT**

**3.1 VICIOUS CIRCLE OF POVERTY**

**3.1.1. Concept:**

The vicious circle of poverty was given by Professor Ragnar Nurkse. It says that a low level of income will lead to a lower level of savings and investment. Therefore, the low investment will lead to low productivity which will again lead to low income.

**3.1.2. Definition:**

According to Prof. Nurkse, “The main reason of vicious circle of poverty is the lack of capital formation.”

Similarly, Kindleberger opined that vicious circle of poverty takes place due to the small size of the market.

**However, the reasons of vicious circle of poverty can be classified into three groups:**

- (a) Supply side of vicious circle.
- (b) Demand side of vicious circle.
- (c) Vicious Circle of Market Imperfections.

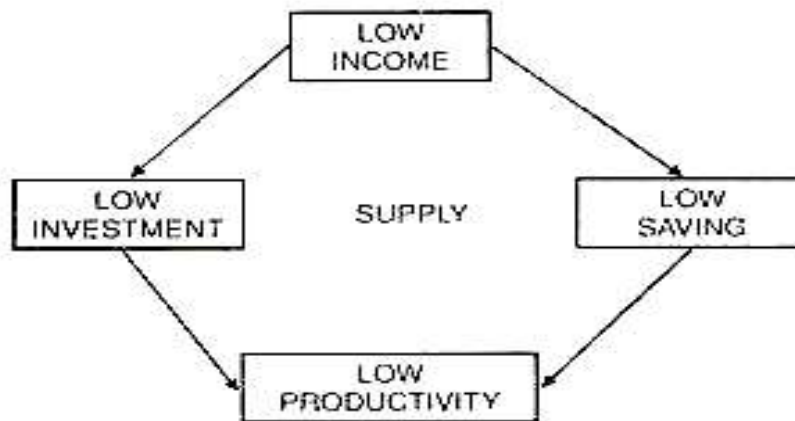
**A. Supply Side of Vicious Circle:**

Supply side of vicious circle indicates that in underdeveloped countries, productivity is so low that it is not enough for capital formation. According to Samuelson, “The backward nations cannot get their heads above water because their production is so low that they can spare nothing for capital formation by which their standard of living could be raised.”

In the words of Prof. Nurkse on the supply side there is small capacity to save resulting from low level of national income. The low real income is a reflection of low productivity, which in turn is due largely to the lack of capital. The lack of capital is a result of the small capacity to save and so the circle is complete.

**Low Income → Low Saving → Low Investment → Low Production → Low Income**

The supply side of vicious circle can be illustrated with the help of a fig 3.1.



**Fig. 3.1. Supply side of poverty**

Reflects the UDCs are poor. In these countries poverty refers to low real income. Real income remains low due to low level of capital and capital is low because of low level of saving. The reason of low saving is low level of income. Those, it becomes clear from the above analysis, that the main reason of low level of poverty and income is the low level of saving. Consequently, investment is not possible in production channels. A man can save only when his real income exceeds consumption. Generally, in UDC, society is divided into two groups' viz.; rich and poor.

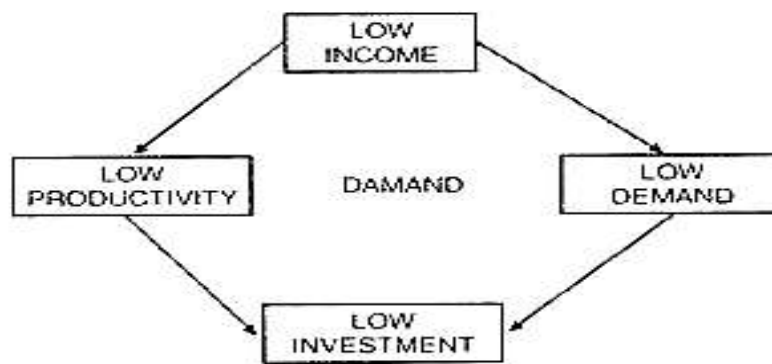
In such countries, majority of farmers are from poor groups. Their income is very low because they are engaged in subsistence farming. The methods of cultivation are old and unskilled. The productivity of labour is low due to unskilled labour, disguised unemployment and immobility of labour. Under such situation, a huge chunk of national product is consumed on consumption purposes. In this way, they lack in saving, investment and so the capital formation. Although, the rich group of the society is in a position to save. But, they spend their saving on luxurious goods instead of saving. They gave preference to foreign products. Thus, their demand does not enlarge the size of the market. Basically, in an economy, investment does not depend only on saving, but also on ability to invest and willingness to invest. These countries lacks in investment facilities due to low level of demand.

The quantity of investment depends on able entrepreneurs. Able entrepreneurs have to take risk and put hard work to set up a new industry. The social atmosphere of the rich class is such that they do not dare to take risk. They prefer to put some labourers on work. Moreover, in UDCs, there exist medium income group who prefer to work in trade, services etc. instead

of capital formation. The main reasons responsible for this are lack of capital for investment in industries, lack of industrial finance, lack of skilled labour, lack of transportation and social overhead etc.

**B. Demand Side of Vicious Circle:**

According to Prof. Nurkse, “On the demand side, the inducement of invest may he low because of the small purchasing power of the people, which is due to the small real income, which is again due to loco productivity. The level of productivity however, is the result of the small amount of capital used in production which in turn may be caused or at least partly caused by small inducement to invest.



**Fig. 3.2. Demand Side of Vicious Circle**

**Low Income → Low Demand Low Investment → Low Productivity → Low Income**

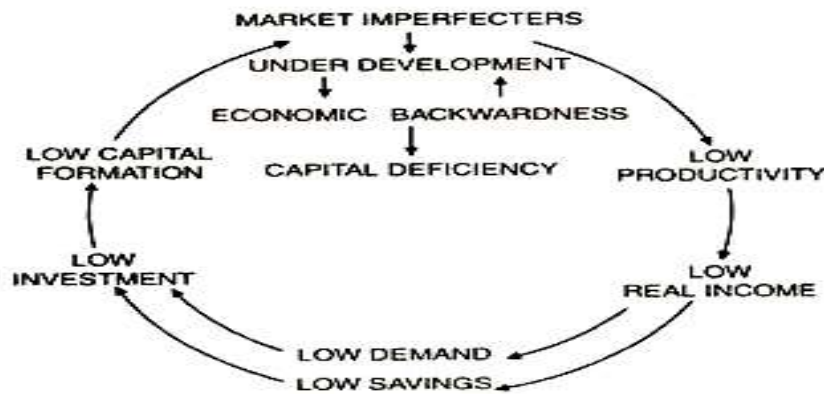
Fig. 3.2. shows that low income leads to low demand which in turn results in low investment and so the low level of capital which again leads to low productivity and low income. The main reason of the poverty in these countries is the low level of demand. Consequently, the size of market remain low. The small size of the market becomes a hurdle in the path of inducement to invest. Thus, the investors do not establish industries on large scale and productivity remains low and so the income. In order to prove this, Prof. Nurkse has cited many examples. For instance, an entrepreneur will not establish a modern shoe factory in a country where the people are poverty ridden and unable to purchase shoes. Similarly, iron and steel industry in Chile will produce so much iron and steel in three hours that the entire demand of the country can be fulfilled. Thus, according to Nurkse, “In

underdeveloped countries, on demand side, low purchasing power of the people results in low productivity.”

**C. Vicious Circle of Market Imperfections:**

Meier and Baldwin have described a third vicious circle based on capital deficiency due to market imperfections. In underdeveloped countries, resources are underdeveloped and people are economically backward. Existence of market imperfections prevents optimum allocation and utilization of natural resources and the result is underdevelopment and this, in turn, leads to economic backwardness.

The development of natural resources depends upon the character of human resources. But due to lack of skill and low level of knowledge, natural resources will remain unutilized, under-utilized and misutilised. In the words of Meier and Baldwin, “Underdeveloped resources are, therefore, both a consequence and cause of the backward people... The more economically backward are the people, the less developed will be natural resources, lesser the development of natural resources more the people are economically backward.” The vicious circle caused by Market Imperfections is shown as under.



**Fig.3.3. Market Imperfection**

The vicious circle of poverty is a result of the various vicious circles which were on the sides of supply of and demand for capital. As a result capital formation remains low productivity and low real incomes. Thus, the country is caught in vicious circles of poverty which are mutually aggravating and it is very difficult to break them.

### **3.2. CIRCULAR CAUSATION**

**Circular Causation:** The classical economists are of the view that the expansion of international trade can be taken as an important source of economic development as it has equalizing effect i.e. it has developed both export and import countries irrespective of type of goods traded. But some of the recent economists have argued that international trade cannot encourage growth especially in underdeveloped countries. It may only help to the developed country. The theory of circular causation is one of the explanations to this.

#### **3.2.1 CONCEPT:**

Circular causation Circular causation can be defined as a common complex situation with several interconnected causes and effects, where an action is controlled or affected by its own outcome or results. Circular causation is a theory developed by Swedish economist Gunnar Myrdal in the year 1956. It is a multi-causal approach where the core variables and their linkages are delineated. The idea behind it is that a change in one form of an institution will lead to successive changes in other institutions. These changes are circular in that they continue in a cycle, many times in a negative way, in which there is no end, and cumulative in that they persist in each round. The change doesn't occur all at once but in small changes because that would lead to chaos.

The theory According to Gunnar Myrdal "Economic development results in a circular causation process leading to rapid development of developed countries while the weaker countries i.e. underdeveloped countries in Asia and Africa continent tend to remain behind and poor". He further argues that "economic theory has disregarded these so called noneconomic factors and kept them outside the analysis. As they are among the main vehicles for the circular causation in the cumulative processes of economic change, this represents one of the principal shortcomings of economic theory" (Myrdal, 1957). Evolution of Theory Gunnar Myrdal developed the concept from Knut Wicksell and developed it alongside with Nicholas Kaldor when they worked together at the United Nations Economic Commission for Europe. Myrdal concentrated on the social provisioning aspect of development, while Kaldor

concentrated on demand-supply relationships to the manufacturing sector. About Economic Theory and Underdeveloped Regions Myrdal wrote that ‘the argument moves on a general and methodological plane in the sense that the theory is discussed as a complex of broad structures of thought’. His aim was to submit ‘broad generalizations, as a ‘theory’ is permitted to be, grasp the social facts as they organize themselves into a pattern when viewed under a bird’s-eye perspective into this general vision, the specific characteristic. Myrdal developed further the circular cumulative causation concept and stated that it makes different assumptions from that of stable equilibrium on what can be considered the most important forces guiding the evolution of social processes. These forces characterize the dynamics of these processes in two diverse ways. It is generally recognized that Myrdal’s work on development and underdevelopment made three important contributions. He proposed accumulative causation approach in opposition to the dominant one, which he called the stable equilibrium approach. He pointed out that analyses of development processes, which only focus on economic factors, are irrelevant and misleading because historical, institutional, social and cultural factors also matter. He disputed the existence of a body of economic thought that is ‘objective’ in the sense that it is value-free.

Myrdal’s cumulative causation theory is the theory of development. His theory includes institutional and political factors to determine the development process besides demand and supply factors of an economy. Concerning institutional factors he insisted both economic and non-economic factors should be included in the analysis of causes of development as both have substantial importance. Again, Myrdal’s cumulative causation theory allows the possibility and necessity of the social reform by introducing policies. Myrdal’s methodology on policies is so unique that it might as well be called “the political implications in the evolutionary economics”. Myrdal’s cumulative causation theory can be a kind of indicator of the direction for the further development of cumulative causation theory.

### **3.3. UNLIMITED SUPPLY OF LABOUR**

#### **3.3.1. Introduction:**

An eminent development economist Arthur Lewis put forward his model of “Economic Development with Unlimited Supplies of Labour” which envisages the capital accumulation in the modern industrial sector so as to draw labour from the subsistence agricultural sector. Lewis model has been somewhat modified and extended by Fei and Ranis but the essence of the two models is the same. Both the models (that is, one by Lewis and the other modified one by Fei-Ranis) assume the existence of surplus labour in the economy, the main component of which is the enormous disguised unemployment in agriculture.

Further, they visualise ‘dual economic structure’ with manufacturing, mines and plantations representing the modern sector, the salient features of which are the use of reproducible capital, production for market and for the profit, employing labour on wage-payment basis and modern methods of industrial organisation. On the other hand, agriculture represents the subsistence or traditional sector using non-reproducible land on self-employment basis and producing mainly for self-consumption with inferior techniques of production and containing surplus labour in the form of disguised unemployment.

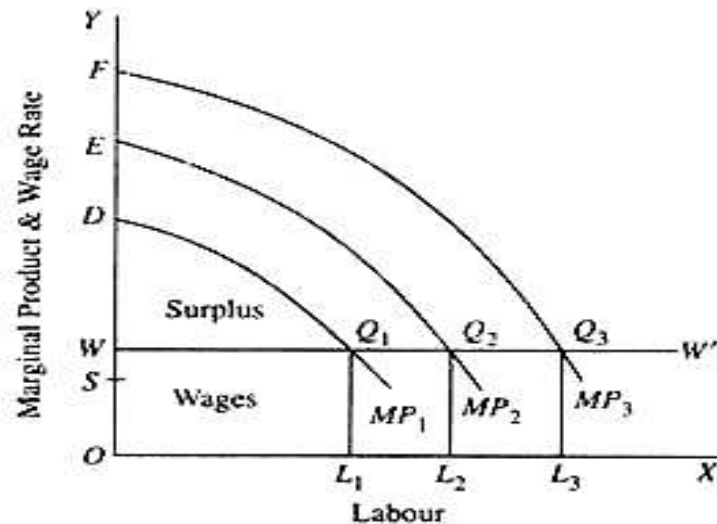
As a result, the productivity or output per head in the modern sector is much higher than that in agriculture. Though the marginal productivity in agriculture over a wide range is taken to be zero, the average productivity is assumed to be positive and equal to the bare subsistence level.

#### **3.3.2. LEWIS MODEL OF DEVELOPMENT WITH SURPLUS LABOUR:**

In the labour-surplus models of Lewis and Fei-Ranis, the wage rate in the modern industrial sector is determined by the average productivity in the agriculture. To this average productivity is added a margin (Lewis fixes this margin at 30%) which is required for furnishing an incentive for labourers to transfer themselves from the countryside to the urban industries as well as for meeting the higher cost of urban living. In this setting, the model shows how the expansion in the industrial investment and production or, in other



Woods, capital accumulation outside agriculture will generate sufficient employment opportunities so as to absorb all the surplus labour from Agriculture and elsewhere. The process of expansion and capital accumulation in the modern sector and the absorption of labour by it is explained by the accompanying Fig. 3.4.



**Fig. 3.4. Capital expansion and growth in labour employment**

OS represents the real wages which a worker would be getting in the subsistence sector, that is, OS is the average product per worker in the subsistence sector. OW is the wage rate fixed in the modern sector which is greater than OS (i.e., average product in agriculture by) 30%. So long as surplus labour exists in the economy any amount of labour will be available to the modern sector at the given wage rate OW, which will remain constant. With a given initial amount of industrial capital, the demand for labour is given by the marginal productivity curve MP<sub>1</sub>. On the basis of the principle of profit maximisation, at the wage rate OW, the modern sector will employ OL<sub>1</sub> labour at which marginal product of labour equals the given wage rate OW. With this the total share of labour i.e. wage in the modern sector will be OWQ<sub>1</sub>L<sub>1</sub> and WQ<sub>1</sub>D will be the capitalists' surplus.

Now, Lewis assumes that all wages are consumed and all profits saved and invested. When the capitalists will reinvest their profits for setting up new factories or expanding the old ones, the stock of capital assets in the modern sector will increase. As a result of the increase in the stock of industrial capital, the demand for labour or marginal productivity curve of labour will shift outward, for instance from MP<sub>1</sub> to MP<sub>2</sub> in our diagram. With MP<sub>2</sub> as the

new demand curve for labour and the wage rate remaining constant at  $OW$ ,  $OL_1$  amount of labour will be employed in the modern sector. In this new equilibrium situation profit or surplus accruing to the capitalist class will be equal to  $WQ_2E$  which is larger than the previous  $WQ_1D$ . The new surplus or profits of  $WQ_2E$  will be further invested with the result that capital stock will increase and the demand or marginal productivity curve for labour will further shift upward, say to  $MP_3$  position. When the demand curve for labour is  $MP_3$  employment of labour will rise to  $OL_3$ . In this way, the profits earned will go on being reinvested and the expansion of the modern sector will go on absorbing surplus labour from the subsistence sector until all the labour surplus is fully absorbed in productive employment. It is worth mentioning that in Lewis Model, the rate of accumulation of industrial capital and, therefore, the absorption of surplus labour depends upon the distribution of income. With the aid of classical assumption that all wages are consumed and all profits saved, Lewis shows that the share of profits and therefore rate of saving and investment will rise continuously in the modern sector and capital will continue to be expanded until all the surplus labour has been absorbed. Rising share of profits serves as an incentive to reinvest them in building industrial capacity as well as a source of savings to finance it.

### **3.3.3. Profit as the Main Source of Capital Formation:**

It is clear from the above analysis of Lewis model with unlimited supply of labour that profits constitute the main source of capital formation. The greater the share of profits in national income, the greater the rate of savings and capital accumulation. Thus with the expansion of the modern or capitalist's sector, the rate of saving and investment as percentage of national income will continuously rise. As a result, rate of capital accumulation will also increase relatively to national income. It is of course assumed that all profits or a greater part of the profits is saved and automatically invested.

It is also evident from above that share of capitalist's profits depends on the share of the capitalist sector in the national product. As the capitalist or modern sector expands, the share of profits in national product will rise. This rise in the share of profits in national product is due to the assumptions of the model that wage rate remains constant and prices of the products

produced by the capitalist sector do not fall with the expansion in output. To quote Lewis himself, "If unlimited supplies of labour are available at constant real wage rate, and if any part of the profits is reinvested in productive capacity, profits will grow continuously relatively to the national income".

#### **3.3.4. A Critical Appraisal of Lewis Model:**

The validity and usefulness of the labour-surplus model of Lewis for developing countries like India depend of course on the extent to which their underlying assumptions are valid for the economies in question. We are here not interested in validity of all the assumptions, explicitly or implicitly, made in this model. In our view the basic premise of these models is wrong and that makes it unrealistic and irrelevant for framing a suitable development strategy to solve the problem of surplus labour and unemployment. The basic premise of the model is that industrial growth can generate adequate employment opportunities so as to draw away all the surplus labour from agriculture in an over-populated developing country like India where population is currently increasing at the annual rate of around 2 per cent. This premise has been proved to be a myth in the light of generation of little employment opportunities in the organised industrial sector during over fifty years of economic development in India, Latin American and African countries.

For instance, in the 30 years (1951-81) of industrial development in India during which fairly good rates of industrial production had been achieved, the organised industrial employment increased by only 3 million which is too meagre to make any significant impact on the urban unemployment situation, far from providing a solution to the labour-surplus problem in agriculture. Thus, the generation of adequate employment opportunities and as a result the absorption of surplus labour from agriculture in the expanding industrial sector has not proceeded as predicted by Lewis model. It may be pointed out here that migration of some workers from the rural to the urban areas in India has occurred as shown by the slight increase in the degree of urbanisation noticed in the various censuses but these immigrants to the urban areas have not been absorbed into the modern high-productivity employment, as envisaged by Lewis and Fei-Ranis. This is

evident from the statistical data about meagre increase in employment in the organised sector. These immigrants to the urban areas have been mainly employed in petty trade, domestic service and casual work in which the disguised unemployment and poverty exist as acutely as in agriculture. Thus, as things are stand, the traditional sector of the economy is simply moving from the countryside into the cities in apparent contrast to the Lewis model.

**Lewis model neglects the importance of labour absorption in agriculture:**

A grave weakness of the models of Lewis and Fei-Ranis is that they have ignored the generation of productive employment in agriculture. No doubt, Lewis in his later writings and Fei-Ranis in their modified and extended version of Lewis model have envisaged an important role for agricultural development so as to sustain industrial growth and capital accumulation. But they visualise such an agricultural development strategy that will release labour force from agriculture rather than absorbing them in agriculture.

**Assumption of adequate labour-absorptive capacity of the modern Industrial sector:**

Another related shortcoming of development models of Lewis, Fei and Ranis is their assumption that the growth of industrial employment (in absolute amount) will be greater than the growth in labour force (which in India at present is of the order of about 8 million people per year). Because only then the organised industrial sector can absorb surplus labour from agriculture. The employment potential of industrial sector is so little that far from withdrawing labour currently employed in agriculture, it does not seem to be possible for the organised industries and services, on the basis of existing capital-intensive technologies, even to absorb the new entrants to the labour force. An important drawback of Lewis model is that it has neglected the importance of agricultural growth in sustaining capital formation in the modern industrial sector. When as a result of the expansion of capitalist modern sector, transfer of labour from agriculture to industry takes place, the demand for food-grains will rise. If the output of food-grains does not increase through agricultural development to meet the additional demand for food-grains, prices of food-grains will rise. With the rise in prices of food-grains wages of industrial labour will increase. Rise in wages will lower the share of

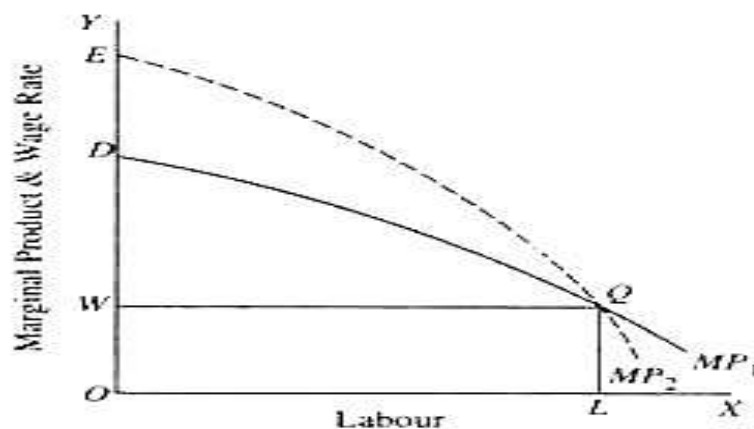
profits in the industrial product which in turn will slow down or even choke off the process of capital accumulation and economic development. Thus, if no allowance is made for agricultural growth, the expansion of modern sector and capital accumulation is bound to be halted. Thus, neglect of agriculture in the development strategy pursued in India since the Second Plan virtually resulted in stagnation in the industrial sector, during the period 1966-1979.

**The Assumption of Constant Real Wage Rate in the Modern Sector:**

The assumption of constant real wages to be paid by the urban industrial sector until the entire labour surplus in agriculture has been drawn away by the expanding industrial sector is quite unrealistic. The actual experience has revealed a striking feature that in the urban labour markets where trade unions play a crucial role in wage determination there has been a tendency for the urban wages to rise substantially over time, both in absolute terms and relative to average real wages even in the presence of rising levels of urban open unemployment. The rise in wages, as explained above, seriously impairs the development process of the modern sector.

**It neglects the labour-saving nature of technological progress:**

A serious lacuna of the Lewis model from the viewpoint of employment creation is its neglect of the labour-saving nature of technological progress. It is assumed in the model, though implicitly, that rate of employment creation and therefore of labour transfer from agriculture to the modern urban sector will not be proportional to the rate of capital accumulation in the industrial sector.



**Fig. 3.5. Capital Expansion with Labour saving technological change**

Accordingly, the greater the rate of growth of capital formation in the modern sector, the greater the creation of employment opportunities in it. But if capital accumulation is accomplished by labour-saving technological change, that is, if the profits made by the capitalists are reinvested in more mechanised labour-saving capital equipment rather than in existing types of capital, then employment in the industrial sector may not increase at all.

Lewis model has been reproduced in Fig. 3.5. With a modification that profits made are reinvested in labour-saving capital equipment due to the technological change that has taken place. As a result of this, marginal productivity curve does not shift uniformly outward but crosses the original marginal productivity curve from above. It is evident from Fig. 3.5, that with the constant wage rate  $OW$ , the employment of labour does not increase even though marginal productivity curve has shifted. It will be observed from Fig. 3.5. That though employment of labour and total wage ( $OWQL$ ) have remained the same, the total output has increased substantially, and the area  $OEQL$  is much greater than the area  $ODQL$ . This illustration points to the fact that while the industrial output and profits of the capitalist class can increase, the employment and incomes of labour class remain unchanged. Although GNP has increased, labouring class has not received any benefit from it. It is not just theoretical illustration but has been actually borne out by the experience of industrial development of several developing countries. This experience shows that while industrial output has significantly increased, employment has lagged far behind.

#### **Lewis Model Ignores the Problem of Aggregate Demand:**

A serious factor which can slow down or even halt the expansionary process in Lewis model is the problem of deficiency of aggregate demand. Lewis assumes, though implicitly, that no matter how much is produced by the capitalist or modern sector, it will find a market. Either the whole increment in output will be demanded by the people in the modern sector itself or it will be exported. But to think that entire expansion in output will be disposed of in this manner is not valid. This is because a good part of the demand for industrial products comes from the agricultural sector.

If agricultural productivity and therefore incomes of the farming population do not increase, the problem of shortage of aggregate demand will emerge which will choke off the growth process in the capitalist industrial sector. However, once an allowance is made for the increase in agricultural productivity through a priority to agricultural development, the basic foundations of Lewis model crumble down. This is because a rise in agricultural productivity in Lewis model will mean a rise in wage rate in the modern capitalist sector. The rise in the wage rate will reduce the capitalist's profits which in turn will bring about a premature halting of the expansionary process.

**Conclusion:**

Despite several limitations and drawbacks Lewis model retains a high degree of analytical value. It clearly points out the role of capital accumulation in raising the level of output and employment in labour-surplus developing countries. The model makes a systematic and penetrating analysis of the growth problem of dual economies and brings out some of crucial importance of such factors as profits and wages rates in the modern sector for determining the rate of capital accumulation and economic growth. It underlines the importance of intersect oral relationship (i.e., the relationship between agriculture and the modern industrial sector) in the growth process of a dual economy.

**3.4. BIG PUSH THEORY:**

The theory of 'big push' first put forward by P.N. Rosenstein-Rodan is actually a stringent variant of the theory of 'balanced growth'. The crux of this theory is that the obstacles of development are formidable and pervasive. The development process by its very nature is not a smooth and uninterrupted process. It involves a series of discontinuous 'jumps'. The factors affecting economic growth, though functionally related with each other, are marked by a number of "discontinuities" and "hump." Therefore, any strategy of economic development that relies basically upon the philosophy of economic "gradualism" is bound to be frustrated. What is needed is a "big push" to undo the initial inertia of the stagnant economy. It is only then that a smooth

journey of the economy towards higher levels of productivity and income can be ensured. Unless big initial momentum is imparted to the economy, it would fail to achieve a self-generating and cumulative growth. A certain minimum of initial speed is essential if at all the race is to be run. A big thrust of a certain minimum size is needed in order to overcome the various discontinuities and indivisibilities in the economy and offset the diseconomies of scale that may arise once development begins. According to Rosenstein-Rodan, marginal increments in investment in unrelated individual spots of the economy would be like sprinkling here and there a few drops of water in a desert. Sizable lump of investment injected all at once can alone make a difference.

### **Rationale for the Big Push:**

The basic rationale of the 'Big Push' like the 'Balanced Growth' theory is based upon the idea of 'external economies'. In the theory of welfare economics, external economies are defined as those unpaid benefits which go to third parties. The private costs and prices of products fail to reflect these. And the market prices have to be corrected if an account of these external economies is to be taken. However, the concept of external economies has a different connotation in growth theory. Here, they are pecuniary in nature and get transmitted through the price system. To explain the emergence of such external economies and their transmission, let us consider two industries A and B. If the industry A expands in order to overcome the technical indivisibilities, it shall derive certain internal economies. This may result in the lowering of the price for the product of the industry A. Now if the industry B uses A's output as an input, the benefits of A's internal economies shall then be passed on to the industry B in the form of pecuniary external economies. Thus, "the profits of industry B created by the lower prices of product. A call for investment and expansion in industry B, one result of which will be an increase in industry B's demand for industry A's product. This in turn will give rise to profits and call for further investment and expansion of industry A."

Following such a line of argument, Prof. Rosenstein-Rodan contends that the importance of external economies is one of the chief points of



difference between the static theory and a theory of growth. “In the static allocative theory there is no such importance of the external economies. In the theory of growth however,” remarks Prof. Rodan, “external economies abound because given the inherent imperfection of the investment market, imperfect knowledge and risks, pecuniary and technological external economies have a similarly disturbing effect on the path towards equilibrium.” Now, the basic contention of the “big push” theory is that such a mutually beneficial way of output expansions is not likely to occur unless the initial obstacles are overcome. There are “non-appropriability” or “indivisibilities” of different kinds which if not removed through a “big push” will not permit the emergence and transmission of ‘external economies’ – which lie at the back of a self-generating development process. Associated with the removal of each set of indivisibilities is a stream of external economies. A ‘bit by bit’ approach to development would not enable the economy to cross over certain indivisible economic obstacles to development. What is required is a vigorous effort to jump over these obstacles. As such, for the economy to be successfully launched on the path of self-generating growth a “big push” in the form of a minimum size of investment programme is necessary. In essence, therefore, an all-or-nothing approach to development is stressed in big-push approach to development.

**Requirements for Big Push:**

The hallmark of the ‘big-push’ approach lies in the reaping of external economies through the simultaneous installation of a host of technically interdependent industries. But before that could become possible, we have to overcome the economic indivisibilities by moving forward by a certain “minimum indivisible step”. This can be realised through the injection of an initial big dose of a certain size of investment.

Prof. Rodan distinguishes three kinds of indivisibilities and externalities with a view to specify the areas where big push needs to be applied.

They are:

- (i) Indivisibilities in the production function, i.e., lumpiness of capital, especially in the creation of social overhead capital.
- (ii) Indivisibility of demand, i.e., complementarity of demand.

(iii) Indivisibility of savings, i.e., kink in the supply of savings.

Let us study each of these individually so as to bring out their importance in providing a self-generating stimulus to the development process.

**(i) Indivisibilities in the Production Function:**

Prof. Rodan argues that it is possible to generate enormous pecuniary external economies by overcoming the 'indivisibilities of inputs, processes and outputs.' The emergence of such externalities would bring about a wide range of increasing returns. To corroborate his contention he cites the case of United States. He feels that the fall in the capital-output ratio in U.S.A. from 4:1 to 3:1 over the last eighty years was chiefly due to the increasing returns made possible by the levelling down of production indivisibilities. The most important case of indivisibilities and external economies on the supply side resides in the social overhead capital which is now called infrastructure. The most important effect of jumping over this indivisibility is the "investment opportunities created in other industries". Social overhead capital consists of all the basic industries such as transport, power, communications, and such other public utilities.

The construction of these infrastructures involves 'lumpy' capital investments. And the capital-output ratio in the social overheads is considerably higher than in other industries. Moreover, these services are only indirectly productive and involve long gestation periods. Besides, their "minimum feasible size" is large enough. As such it is well-nigh difficult to avoid excess capacity in these, at least in the initial periods. Above all, there is a "minimum industry mix of public utilities" that must be required to divert at least 30 to 40 per cent of their total investment in the creation of social overhead capital.

In this view, therefore, it is possible to distinguish four types of indivisibilities of creating social overhead capital. They are:

**(a) Indivisibility of Time:**

The creation of social overhead capital must precede other directly productive industries so that it is irreversible or indivisible in time.

**(b) Indivisibility of Durability:**

The infrastructures generally last long. The overhead capital with lesser durability is either technically not feasible or is very poor in efficiency.

**(c) Indivisibility of Long Gestation Periods:**

The investments in social overhead capital, by all counts, involve a highly protracted period of time for their fruition as compared with investments in other directly productive channels.

**(d) Indivisibility of an Irreducible Industry Mix of Public Utilities:**

Social overhead capital must grow collectively. There is an irreducibly minimum industry mix of different public utilities that have to be created all at one stroke. As it is impossible to import the infrastructures, they have got to be produced domestically. And because of the existence of above explained indivisibilities, it is necessary to make 'lumpy' investments in them. And their creation is a precondition to the investments in directly productive and other quick-yielding productive activities.

**(ii) Indivisibility of Demand:**

This refers to the complementarity of demand arising from the diversity of human wants. The very fact that there is an indivisibility of complementarity of demand requires simultaneous setting up of interrelated industries in countries to initiate and accelerate the process of development. Indivisibility of demand generates interdependencies in investment decisions. As such, if each investment project was undertaken independently, it is in most cases likely to flop down. This is because individual investment projects generally have "high risks because of uncertainty as to whether their products will find a market," This point can be clarified with the help of the following well known example given by Rosenstein-Rodan for a closed economy.

To start with, let us suppose that 100 disguisedly unemployed workers in an underdeveloped country were withdrawn and employed in a shoe factory. The wages of the newly employed workers would provide an additional income to them. Now, if they spend all their newly received purchasing power on the shoes, an adequate market for the shoe industry would be ensured. As a result, the industry would succeed and survive. But the fact is that human beings having diversity of wants cannot simply afford to survive simply by the

consumption of shoes and nothing else. As such, they will not spend all their earnings on the purchase of shoes. The market for the shoe industry will, therefore, remain limited as before. Therefore, the incentives to invest will be adversely affected. As a result, the shoe factory investment project might end in a fiasco. Now let us make a somewhat different assumption to see how an atmosphere congenial to the undertaking of investments can occur. Suppose that instead of only 100 workers being engaged in the shoe factory, 10,000 workers are put to work in 100 different factories producing a variety of consumer goods. These new factories provide larger employment and thus purchasing power to their workers. There is an increase in the total volume of purchasing power and the total size of the market. This is because the “new producers would be each other’s customers”.

**(iii) Indivisibility in the Supply of Savings:**

A high minimum package of investment cannot be undertaken without an adequate supply of savings. But it is not possible to have such high volume of savings in underdeveloped countries due to an extremely low price and high income elasticity of the supply of savings. The savings are low primarily because incomes are low. This, thus, constitutes the third indivisibility. “The way out of the vicious circle,” remarks Rosenstein-Rodan, “is to have first an increase in income and to provide mechanisms which assure that in every second stage the marginal rate of savings will be very much higher than the average rate of savings.” The Smith advice that ‘frugality is a virtue and prodigality a vice’ has to be adapted to a situation of growing income.” But in the ultimate analysis the initial big increase in income has got to be provided through an initial big increase in investment.

The existence of the three indivisibilities outlined above make it abundantly clear that the solution to all these lies in a high minimum quantum of investment. Thus, a big push through a minimum indivisible step forward in the form of a high minimum quantity of investment could alone make it possible to jump over the economic obstacles to development in the underdeveloped countries. Lastly, Resenstein-Rodan considers the role of international trade vis-a-vis the strategy of big push in generating a self-sustaining process of development. In this regard he is of the view that

international trade cannot be a substitute for “big push.” The provision of some of the needed wage goods through imports can at best help in narrowing down the range of fields which call for a ‘big push’. The historical experience provided by the nineteenth century corroborates Rosenstein- Rodan’s conclusion that international trade cannot by itself obviate the need for ‘big push’ altogether. Once the process of development by an initial application of ‘big push’ is underway, its sequel course would tend to follow simultaneously three sets of balanced growth relations. They are:

- (i) A balance between the social overhead capital and the directly productive activities (in both the consumer and capital goods sectors).
- (ii) A vertical balance between capital goods and consumer goods (including the intermediate goods).
- (iii) Lastly, there should be the horizontal balance between various consumer goods industries due to complementary nature of expanding consumer demand.

#### **The Need for Balanced Growth of Centralised Planning:**

The mutual benefits arising from the external economies for industrialisation cannot be included in the cost calculations of entrepreneurs to the fullest possible extent without recourse to some sort of centralized ‘balanced growth’ planning. This is because of a number of reasons. First, due to the imperfections in the market, the free market price system does not adequately give proper signal to the private investors for the future possibilities of expansion in complementary industries.

Second, in developing countries due to the imperfections of knowledge and risks, the response of the private entrepreneurs to any given price signal is quite imperfect and unsatisfactory. Thus, due to the failure to take advantage of the external economies to the fullest extent, investments which may be profitable in terms of ‘social marginal net product’ remain unprofitable in terms of ‘private marginal net product’. In this view, therefore, there is a need for an integrated investment scheme to be carried out in complementary industries. The best way to do that would be to carry out the investment programme under the direction of some centralised planning authority. An

individual entrepreneur in a developing country cannot hope to have all the necessary data which the central planning authority can draw upon.

The crash programme of investment envisaged by the 'big-push' theory cannot by its very nature be made just at random. It has to take into consideration the various balances – horizontal as well as vertical. Only then could the achievement of self-generating, cumulative and harmonious growth of the economy be possible. For this what is necessary is a unified decision-making process. "Allocation of capital," remarks Prof. Higgins, "on the basis of individual estimates of short-run returns on various marginal investment projects is the very process by which the underdeveloped countries got where they are."

The basic reason for government action to promote development is that each of a set of individual private investment decisions may seem unattractive in itself, whereas a large scale investment program undertaken as a unit may yield substantial increase in national income." Prof. Rosenstein-Rodan's theory is essentially a theory of development and thus helps us to examine the path towards development rather than restricting itself simply to the study of conditions at the point of equilibrium. The theory highlights the inefficiency of price system of signalling the desirable directions for investment. It is big-push investment through a centralised planning that could put the developing countries on a self-generating development process.

### **Evaluation of Rosenstein's Big Push Strategy:**

However, Prof. Rosenstein-Rodan's all-or-nothing approach is not perfect in itself in all respects. It suffers from a number of lacunae.

First, the main implication of the 'big-push' theory is State intervention and centralised planning. It is argued that due to imperfections of market the free price system fails to register and thus communicate properly the economic events, much less their future course. But the pertinent question involved here is – will the prevailing circumstances of the developing countries warrant a conclusion to the contrary? The actual fact of the matter is that the current institutional and administrative set-up of the government machinery of the poor developing countries is too weak to cope with the dictates of the 'big push' theory. It is, therefore, quite doubtful whether the government

sponsored brand of communication system about the future events would at all be more effective than the free price mechanism.

The governments of developing countries may somehow manage to draw up their initial integrated economic plans. But they are bound to be faced with tremendous difficulties in the execution of these plans. In any comprehensive programme comprising a complex set of related projects, delays and continued revision of the original time-bound schedules are inevitable. "The greater the interdependence", remarks Prof. Myint, "between the different components of the plan, the greater the repercussions of an unexpected or an unavoidable change in one part of the plan on the rest and the greater the need to keep the different parts of the plans continually revised in the light of the latest information available." These are indeed formidable hurdles for the developing countries to cross.

Besides, on account of the poor and incompetent institutional set-ups of the developing countries, there is bound to be insufficient knowledge about the local conditions and an "inefficient feedback of this vital local knowledge from different parts of the country to the central planning machinery." Mere improvement in the standard type of statistical information would not remedy all this.

Above all, the process of unified decision-making and coordination becomes all the more difficult in mixed economies like India. This is so because not often, the public and private sectors rather than being complementary are in fact competitive with each other. Thus, it may so happen that the "private enterprise is inhibited by uncertainties not only about the general economic situation but also about the future intention of the government regulations."

Thus, it is quite clear that the application of a 'big push' programme in the developing countries with their weak and incompetent institutional and administrative machinery is likely to die its own death. In fact, as Prof. Myint remarks, it can be compared to "an attempt to impose a complete and brand new 'second floor' on the weak and imperfectly developed one floor economy of these countries."

Secondly, the chief plank on which the 'big push' theory is founded is the emergence of a wide range of external economies. Prof. Viner has shown that international trade can provide much more external economies than does the domestic investments. However, the developing countries being primarily primary producing countries, engage a large part of their total investment for their exports and marginal import substitutes, the field where the external economies are found to be very- negligible.

Thirdly, the 'big push' theory concentrates mainly on the industrial sector – viz., capital goods, consumer goods and social overhead capital. The manufacturing sector is considered inherently to be a better vehicle of economic growth. But in the developing countries, the most dominant sector is composed of agricultural and primary production. For a balanced growth of the economy, agriculture also requires a corresponding 'big push'. Any neglect of the agricultural sector in these countries is bound to jeopardise the 'big push' effort.

Fourthly, the major part of the 'lumpy' investments involved in the 'all-or-nothing' approach is called for by the 'technical indivisibilities' embodied in the creation of social overhead capital. Not only is the quantum of investment enormously 'lumpy' but also the capital-output ratio high in the provision of social overhead services than in other directions. Thus, due to the inherent capital scarcity in the developing countries, it is really a matter of dubious wisdom to require these countries to overstrain their meagre resources in the provision of a complete outfit of infrastructures.

The 'big push' theory recommends a 'starting from scratch' concerted action in the creation of social overheads. This is on the implicit assumption that these services are totally non-existent in these economies. However, for most of these countries, remarks Prof. Myint, "the practical question is not whether to have a completely new outfit of these services starting from scratch but how to extend and improve the existing facilities."

Further, the 'big push' theory by its very nature requires the 'lumpy' investments in different social overheads to be made simultaneously and once for all. With the very long gestation periods usually associated with such investments, there are bound to be inflationary pressures in the economy due



to the shortage of consumption goods. In an inflationary atmosphere, the process of construction of the social overheads is bound to be a protracted one. In this light it would be better to spread the infrastructure-building activity over a period of time through phasing and changing the time dimension of the projects. This requires selection of a suitable economic size of the social overhead investments.

### **3.5. BALANCED GROWTH THEORY:**

The balanced growth theory can be explained with the views of:

- (a) Rosenstein Rodan and
- (b) Ragnar Nurkse and
- (c) Lewis

#### **(A) Views of Rosenstein Rodan:**

In 1943 article, Rosenstein Rodan propounded this theory but without using the term balanced growth. He stated that the Social Marginal Product (SMP) of an investment is different from its Private Marginal Product (PMP). If different industries are planned accordingly to their SMP, the growth of the economy would be much more than it the industries had been planned according to their PMP. SMP is greater than PMP because of the complementarity of different industries which leads to the most profitable investment from the social point of view.

He illustrates it with a popular example to shoe factory. If a large shoe factory is started in the region where 20,000 unemployed workers are employed. Now in case, the workers spend their entire wages on shoes, it would create market for shoes. If series of industries are started, in that case the demand of different industries would increase via multiplier process. This would lead to planned industrialization. Ragnar Nurkse has also developed his thesis on these lines.

#### **(B) Views of Ragnar Nurkse:**

Prof. Nurkse has given a proper explanation of the theory of balanced growth. He holds that the major obstacle to the development of the underdeveloped countries is the vicious circle of poverty. This vicious circle of poverty shows that income in underdeveloped countries is low. Low income

leads to low savings. Low savings will naturally result in low investment, which will result in less production. Low production will generate low income. Low income will create low demand for goods. In other words, it will result in smaller markets (limited extent of markets). Thus, there will be no inducement to invest.

According to Nurkse “The inducement to invest may be low because of the small buying power of the people, which is due to their small real income, which again is due to low productivity. The low level of productivity however is a result of the small amount of capital used in production which in turn may be caused, at last partly, by inducement to invest.” So, in order to break the vicious circle of poverty in the under-developed countries, it is essential to have a balance between demand and supply. Ranger Nurkse is of the view that economic development is adversely affected by vicious circle of poverty. The economic development can take place only if vicious circle of poverty is broken. The vicious circle of poverty operates both on the demand and supply side.

**(a) Demand Side:**

Vicious circle of poverty affects the demand side of capital formation. The underdeveloped countries are poor because their level of income is low. Due to low level of income, their demand for low income goods is low.



**Fig.3.6. Demand side**

Vicious circle of poverty: On Demand Side: In UDCs the size of the market is limited. As a result, private investors do not get opportunities for more

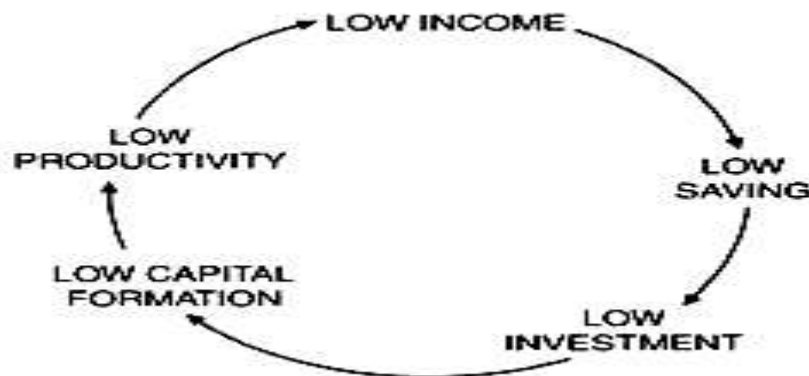
investment. This reduces investment and capita. Hence productivity of capital would fall. This reduced per capita income as explained as follows:

Low Income → Low Size of Market → Low Investment → Low Productivity  
→ Low Income.

**(b) Supply Side:**

Vicious circle of poverty affects the supply side of capital formation. In the underdeveloped countries, poverty exists because the per capita income of the people is low. Due to low per capita income, the level of saving is low. Since investment depends on savings, so investment would be low due to which capital formation would be low. Low capital formation would lead to low productivity which would result in poverty. This is how vicious circle from supply side completes.

Low-Income → Low Savings → Low Investment → Low Capital → Formation  
→ Low Productivity → Low Income



**Fig. 3.7. Supply Side**

**Vicious Circle of Poverty: Supply Side:**

The underdeveloped countries, can resort to capital formation and accelerate the pace of economic development only by breaking the vicious circle of poverty. Once the vicious circle of poverty is broken, the economy would be on the rails to development. Now the question is how to break the vicious circle of poverty.

**How to Break Vicious Circle of Poverty?**

**(i) Complementary demand:**

The vicious circle of poverty cannot be broken with industrial investment decisions. This means vicious circle of poverty cannot be broken

only by making investment in one industry or one sector. Rather, there should be overall investment in all the sectors. This is the only way to enlarge the size of the market. In order to clear his views, Nurkse has given example of shoe industry as given by Rosenstein Rodan. It testifies that investment in shoe industry will not lead to sufficient demand. What we need is to have overall investment, so that labourers of one industry can be the consumers or buyers of the products of others. In the words of Nurkse, “The solution seems to be balanced pattern of investment in a number of different industries so that people working with more productivity, with more capital and improved techniques become each other’s customers.”

When investment will be made in several industries simultaneously, it will increase the income of many people who are employed in various industries. They will purchase goods made by each other for consumption. They will become customers mutually. Thus, with the increase in supply demand will also go up. The extent of market will also increase. It will lead to capital formation and thus, the vicious circle of poverty will get broken. Same would be the case of wage-earners of different industries or sectors.

The complementarity of industries is in reality, the crux of the concept of balanced growth. This is termed as complementarities of demand. According to Nurkse, “Most industries entering for mass consumption are complementary in the sense that they provide a market for and thus supports each other, the basic complementarity stems, in the last analysis from the diversity of human wants. The case for balanced growth rests on the need for a balanced diet.” Thus, on the basis of the complementary of demand, balanced growth will be helpful in attaining economic progress.

**(ii) Government Intervention:**

Nurkse is of the view that the government must intervene in productive activities through economic planning. He is of the view that when government participates in productive activities, it will help in breaking the vicious circle of poverty. Nurkse opines that if entrepreneurs are available in underdeveloped countries, then they can be induced to make investment. But in underdeveloped countries, private entrepreneurs cannot come forward with so much heavy investment. This can easily be carried by the government only.

Thus, vicious circle of poverty can be broken only by the intervention of the government.

**(iii) External Economies:**

Balanced growth also leads to external economies. External economies are those which accrue because of the setting up of new industries and expansion of the existing industries. The accruing of external economies lead to the law of increasing returns to scale. It leads to a fall in the cost of production and hence the price level. A fall in the price leads to the increase in demand which is useful for economic development.

**(iv) Economic Growth:**

Balanced growth helps in accelerating the pace of economic growth. Nurkse is of the view that increase in investment in different branches of production can enlarge the total market. This can break the bonds of the stationery equilibrium of underdevelopment.

**How the Market can be enlarged:**

The market size can be enlarged by monetary expansion, salesmanship and advertisement, removing trade restrictions and expanding social other heads i.e., infrastructures. It can be widened either by a reduction in prices or by an increase in money while keeping constant prices. As the circumstances are found, market is not large enough to allow production on such a scale to reduce cost in underdeveloped countries. Here is an escape from the deadlock that is it results in an overall enlargement of the market. People working with more and better tools in a number of complementary projects become each other's consumer. More industries catering for mass consumption are complementary in the sense that they provide a market for and support each other. The case for balanced growth sets on the need for a balanced diet.”

Nurkse further submits his notion of balanced growth from Say's law which states that “Supply creates its own Demand” and Mill cites that “Every increase of production, if distributed without miscalculation among all kinds of produce in the proportion which private interest would dictate, creates or rather constitutes its own demand.” Thus, Nurkse's, balanced growth is a sort of frontal attack—”a wave of capital investment in a number of different

industries.” Therefore, the best way is to have simultaneous wave of new plants composed in such a way that full advantage is taken of complementary on the supply side and of the complementary of the markets on the demand side.” Investment in wide range of industries will give better division of labour, it leads to vertical and horizontal integration of industries, a common source of raw-materials and technical skill, an expansion of the size of the market and better use of social and economic overhead capital. Therefore, investment in productive equipment and in human capital should be simultaneous while investment will be fruitless unless people are educated. But Prof. Nurkse pleads that private enterprise can achieve the desired effect under the stimulus of certain incentives. Price incentives may bring about balanced growth to some extent. It is further promoted by monetary and other effects.

**(C) W.A. Lewis Views on the Theory of Balanced Growth:**

W.A. Lewis has advocated the theory of balanced growth on the basis of the following two reasons: Firstly, in the absence of balanced growth, prices in one sector may be higher than the prices in the other sector. On account of unfavourable terms of trade in the domestic market, they might suffer heavy losses. As a result no investment will be made there in and their growth will be halted. Because of balanced growth equality in comparative prices in all the sectors will be made and thereby all the sectors will continue to grow.

Secondly, when the economy grows, then several bottlenecks appear in different sectors. As a result of economic development, income of the people also increases. Due to increase in income, demand of those goods rises whose demand is income-elastic. If the production of these goods does not increase, there may appear several bottlenecks. However, in case of balanced growth, it is possible to increase production of those goods whose income elasticity of demand is more. Thereby, chances of bottlenecks in different sectors will be quite remote. In case it is not possible to increase production simultaneously in agricultural and industrial sectors, then Prof. Lewis suggested that the strategy of balance between domestic and foreign trade should be adopted. If industrial sector is not developing, then the agricultural produce should be exported and industrial products should be imported. On the other hand if agricultural sector is not developing, then the industrial goods should be

exported and agricultural products should be imported. However, Lewis does not favour a strategy for growth which totally dependent on increase exports. In his opinion, such a policy may turn the terms of trade against the country which pursues it. According to Lewis, “All sectors of the economy should be developed simultaneously so that balance is maintained between industries and agriculture, production for domestic consumption and production for exports”.

### **3.6. UNBALANCED GROWTH THEORY:**

#### **3.6.1. Concept:**

According to Hirschman, “Development is a chain of disequilibria that must be kept alive rather than eliminate the disequilibrium of which profits and losses are symptoms in a competitive economy. If economy is to keep moving ahead, the task of development policy is to maintain, tension, disproportions and disequilibria.”

“Unbalanced growth is a better development strategy to concentrate available resources on types of investment, which help to make the economic system more elastic, more capable of expansion under the stimulus of expanded market and expanding demand”-H.W.Singer.

According to Alak Ghosh, “Planning with unbalanced growth emphasizes the fact that during the planning period investment will grow at a higher rate than income and income at a higher rate than consumption.”

It explains the unbalanced growth in terms of the growth rates of investment, income and consumption. If  $\Delta I/I$ ,  $\Delta Y/Y$  and  $\Delta C/C$  denote the rate of investment, income and consumption, then unbalanced growth implies  $\Delta I/I > \Delta Y/Y > \Delta C/C$

i.e., the growth rates are not uniform.

Meier and Baldwin are also of the opinion that “Planners should concentrate on certain focal points, so as to achieve the goal of rapid economic development. The priorities should be given to those projects which ensure external economies to the existing firms, and those which could create demand for supplementary goods and services.”

### **3.6.2. Explanation of the Theory:**

Albert O. Hirschman in his strategy of economic development goes a step further from Singer when he says that for accelerating the pace of economic development in the underdeveloped countries, it is advisable to create imbalances deliberately. He also recognized the inter-relatedness of different economic activities as done by Ragnar Nurkse. But he asserts that investment in selected industries or sectors would accelerate the pace of economic development.

He regarded, "Development is a chain disequilibria that must keep alive rather than eliminate the disequilibria, of which profits and losses are symptoms in a competitive economy". There would be 'sea saw advancement' as we move from one disequilibrium to another new disequilibrium situation. Thus Hirschman argued that, "To create deliberate imbalances in the economy, according to a pre-designed strategy, is the best way to accelerate economic development." Hirschman is of the confirmed view that underdeveloped countries should not develop all the sectors simultaneously rather one or two strategic sectors or industries should be developed by making huge investment. In other words, capital goods industries should be preferred over consumer goods industries. It is because capital goods industries accelerate the development of the economy, where development of consumer goods industries is the natural outcome. Hirschman has stated that, "If the economy is to be kept moving ahead, the task of development policy is to maintain tensions, disproportions and disequilibria."

#### **Process of Unbalanced Growth:**

The strategy of unbalanced growth is most suitable in breaking the vicious circle of poverty in underdeveloped countries. The poor countries are in a state of equilibrium at a low level of income. Production, consumption, saving and investment are so adjusted to each other at an extremely low level that the state of equilibrium itself becomes an obstacle to growth. The only strategy of economic development in such a country is to break this low level equilibrium by deliberately planned unbalanced growth.

Prof. Hirschman is of the opinion that shortages created by unbalanced growth offer considerable incentives for inventions and innovations.



Imbalances give incentive for intense economic activity and push economic progress.

**According to Prof. Hirschman, the series of investment can be classified into two parts:**

**1. Convergent Series of Investment:**

It implies the sequence of creation and appropriation of external economies. Therefore, investment made on the projects which appropriate more economies than they create is called convergent series of investment.

**2. Divergent Series of Investment:**

It refers to the projects which appropriate less economies than they create. These two series of investment are greatly influenced by particular motives. For instance, convergent series of investments are influenced by profit motive which are undertaken by the private entrepreneurs. The later is influenced by the objective of social desirability and such investment are undertaken by the public agencies.

In the words of Prof. Hirschman, “When one disequilibrium calls forth a development move which in turn leads to a similar disequilibrium and so on and infinitum in the situation private profitability and social desirability are likely to coincide, not because of external economies, but because input and output of external economies are same for each successive venture.” Thus, growth must aim at the promotion of divergent series of investment in which more economies are created than appropriated. Development policy, therefore, should be so designed that may enhance the investment in social overhead capital (SOC) is created external economies and discourage investment in directly productive activities (DPA).

**Unbalancing the Economy:**

Development, according to Hirschman, can take place only by unbalancing the economy. This is possible by investing either in social overhead capital (SOC) or indirectly productive activities (DPA). Social overhead capital creates external economies whereas directly productive activities appropriate them.

**(i) Excess of investment in Social Overhead Capital:**

Social over-head capital are concerned with those series without which primary, secondary and tertiary services cannot function. In SOC we include

investment on education, public health, irrigation, water drainage, electricity etc. Investment in SOC favorably affect private investment in directly productive activities (DPA).

Investment in SOC is called autonomous investment which is made with the motive of private profit. Investment in SOC provide, for instance, cheap electricity, which would develop cottage and small scale industries. Similarly irrigation facilities lead to development of agriculture. As imbalance is created in SOC, it will lead to investment in DPA.

**(ii) Excess of Investment in Directly Productive Activities:**

Directly productive activities include those investments which lead to direct increase in the supply of goods and services. Investment in DPA means investment in private sector which is done with a view to maximize profit. In those projects, investment is made first where high profits are expected. In this way, DPA are always induced by profits.

**Priorities: Excess SOC or Excess DPA:**

**(a) Unbalancing the economy with SOC:**

Imbalance can be created both by SOC and DPA. But the question before us is that in which direction the investment should be made first so as to achieve continuous and sustained economic growth. The answer is quite simple. The government should invest more in order to reap these economies, the private investors would make investment in order to enjoy profits. This would raise the production of goods and services. Thus investment in SOC would bring automatically investment in DPA.

**(b) Unbalancing the economy with DPA:**

In case investment is made first in DPA, the private investors would be facing a lot of problems in the absence of SOC. If a particular industry is setup in a particular region, that industry will not expand if SOC facilities are not available. In order to have SOC facilities, the industry has to put political pressure. That is really a tough job. Thus, excess DPA path is full of strains or pressure- creating whereas excess SOC path is very smooth or pressure relieving.

### **3.7. CRITICAL MINIMUM EFFORT THESIS**

#### **3.7.1. Introduction:**

According to Prof. Harvey Leibenstein the overpopulated and underdeveloped countries are characterized by the vicious circle of poverty. They have low per capita income. His 'theory of critical minimum effort' is an attempt to provide a solution to this economic problem. According to him, critical minimum effort is necessary to achieve a steady economic growth raising per capita income.

#### **3.7.2. Definition:**

"In order to achieve the transition from the state of backwardness to the more developed state, where we can expect steady secular growth, it is necessary, though not always sufficient condition, that at the same point or during the same period, the economy should receive a stimulus to growth that is necessary than a certain critical minimum size"- Leibenstein.

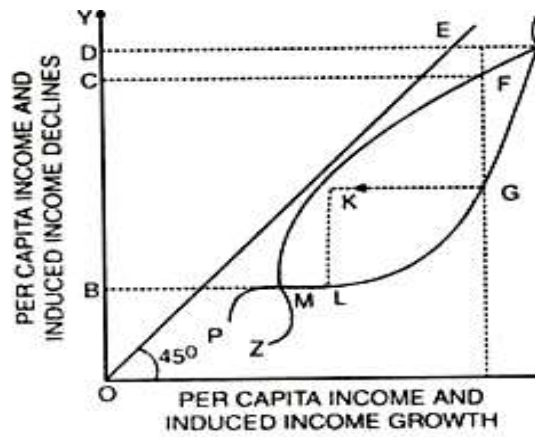
#### **3.7.3. Explanation of the theory:**

The main idea of the theory is that economic growth in the underdeveloped and overpopulated countries is not possible unless a certain minimum level of investment is injected into the system as a consolidated dose that pulls the system out of doldrums. This minimum level of investment is called 'critical minimum effort'.

According to Leibenstein, "A sufficiently large minimum effort is necessary at the outset if the necessary minimum is to be achieved." It is necessary for the sustained economic growth of underdeveloped countries that a certain minimum sum of money is invested. Prof. Leibenstein has further added, "In order to achieve the transition from the state of backwardness to the more developed state, where we can expect steady secular growth, it is necessary, though not always sufficient condition, that at the same point or during the same period, the economy should receive a stimulus to growth that is necessary than a certain critical minimum size."

#### **Shocks and Stimulants:**

According to Leibenstein, every economy is under the influence of two forces—'shocks' and 'stimulants'. Shocks refer to those forces which reduce the level of output, income, employment and investment etc. In other words,



**Fig. 3.8. Leibenstein theory**

Shocks dampen and depress the development forces. Shocks depress development forces which reverse the wheel of development. On the contrary, stimulants refer to those forces which raise the level of income, output, employment and investment etc. In other words, Stimulants impress and encourage development forces. They are called 'Income Generating forces' which lubricate the wheel of development. Stimulants have the capacity to raise per capita income above equilibrium level. The long run economic development does not take place in backward and undeveloped countries as the magnitude of stimulants in those countries is quite small. A country is said to be underdeveloped if the impact of shocks is stronger than the impact of stimulants. On the contrary, a country is said to be developed if the impact of shocks is weaker than the impact of stimulants.

Leibenstein is of the view that the underdeveloped countries are under the influence of shocks and stimulants. But in the long run, the magnitude of shocks and stimulants is too small and there is no process of development. Thus, the efforts to escape from economic backwardness, the spontaneous or forced, are below the critical minimum effort required for persistent growth. In order to break the circle of poverty, backwardness and other imperfection in underdeveloped country, they must get critical effort sufficient in magnitude to move the economy on the path of development.

**Diagrammatic Representation:**

The theory of critical minimum effort has been illustrated in Figure 3.8. The diagram shows the outcome of the struggle between the stimulants and shocks and also enables to find out stimulants of sufficient magnitude as

below: OX-axis of the diagram represents per capita income and induced income growth. OY-axis indicates per capita income and induced income declines. The 45 ° line measures induced increases and decreases in income. P' curve represents stimulants and Z' curve shows stocks. OM is the subsistence living standard. At M' curve P' Z' intersect each other indicating the equality between growth rate of population and the growth rate of income so that the income is caught in the vicious circle of poverty. If the income level is raised from OB to OC which is not in accordance with the critical minimum effort, the rising population will neutralize the increased income. The system will once again hand on the subsistence level of living. Shocks being more powerful than the stimulants. At OJ level of income raising forces are just FE while the depressants up to GM. This will bring the income level down to M again which is just the subsistence level. Solution of this problem for such a rise in the level of national income where stimulants are stronger than the shocks so that the growth in income becomes self-sustaining. If the per capita income is raised beyond OD' the economy, can be pulled out of the vicious circle of poverty. Thereby, growth in income becomes self-sustaining beyond point D. The per capita income has been shown by the arrows.

### **Attitudes, Motivation and Incentives:**

According to Leibenstein, the generation of stimulants depends on attitudes and motivation of the people and the incentives given to them. However, the motivation and incentives are useless without the main factors of economic development. The main factors of economic development are the entrepreneurs, the inventors, the discoverers, the innovators, and those who can accumulate and utilize wealth, and those who can accumulate skills and spread knowledge.

No doubt the activities of such persons are endless, but we are to study only those activities which are in a position to generate stimulants and promote economic growth. It requires continuous efforts of various agencies necessary for economic development. It requires special type of human response to attitudes, motivations and incentives which are created by economic and social environment.

**Incentives:**

According to Leibenstein, there are two types of incentives that are found in the underdeveloped countries:

- (i) Zero-sum Incentives.
- (ii) Positive sum Incentives.

**(i) Zero-sum Incentives:**

Zero-sum incentives are those which exercise zero effect on economic growth. They do not increase national income. It includes trading risk, non-trading or speculative activities and transference of income and profit from one section of people to another. The zero-sum incentives have distributive effect only. They are carried on in order to secure greater monopolistic position, political power and local prestige. They do not add to aggregate resources of the community. In fact, it is a wastage of scarce resources. In short, we may say that zero-sum incentives are not conducive for economic growth.

**(ii) Positive-sum Incentives:**

The positive-sum incentives lead to economic growth and enhance the national income. The positive-sum activities are essential for economic development. These activities consist of the productive investment, use of technical know-how, exploration and exploitation of the new markets and the use of scientific discoveries and innovations etc. These are conducive for economic growth as they change the attitudes, motivations and aspirations of the people.

They try to raise the level of income, output, investment, saving and employment. Leibenstein is of the opinion that mere creation of positive-sum activities is not sufficient to solve the problems of economic development. Because such activities are unfortunately directed towards zero-sum activities for want of a growth oriented environment. It is, thus, essential that the minimum effort should be enough to create such a favourable environment congenial to the persistence of positive sum incentives.

**In underdeveloped countries certain influences which work against the positive change or depress their per capita income, are as follows:**

- (a) The zero-sum entrepreneurial activities directed towards the maintenance of present economic privileges;
- (b) The conservative attitude of both organised and unorganized workers;
- (c) The attraction of traditional ideas and resistance to the new ideas and knowledge;
- (d) Increase in non-productive consumption expenditures that could otherwise be used for capital accumulation;
- (e) Greater population growth, other things being equal, that reduce the amount of capital available per worker, and
- (f) High capital-output ratio.

Leibenstein stresses that these influences can be overcome by a sufficiently large critical minimum effort which would stimulate the positive-sum incentives, counteracting the zero-sum activities. It would, thus, restore a rapid rate of economic growth in underdeveloped economies. As a result, the per capita income would rise and tend to increase the level of saving and investment in the economy.

**A critical minimum effort, in turn, would lead to:**

- (i) An expansion of the growth agents;
- (ii) An increase in their contribution to per unit of capital, as the capital-output ratio declines;
- (iii) A fall in the effectiveness of factors restricting growth;
- (iv) The creation of an environment that stimulates socio-economic mobility; and
- (v) The expansion of secondary and tertiary sectors.

**Role of Growth Agents:**

The critical minimum effort theory is based on the sum of positive-sum activities and such activities are carried on by some growth agents. According to Leibenstein, "By growth agents we mean those individuals who have the capacities to carry out the growth contributing activities." Leibenstein's growth agents are not land, labour and capital, but his growth agents are the entrepreneurs, investors, discoverers, savers and innovators. Leibenstein found that entrepreneur is the most crucial agent of growth.

He is a person of rare qualities and he is out to explore new investment opportunities so as to mobilize essential resources for production and promotion of new ventures etc. He promotes, encourages and sustains positive-sum activities which are essential for the economic growth of a country. The critical minimum theory is based on the presence of certain favourable conditions which are created by the expansion of the growth agents in the process of economic development. These conditions lead the income increasing forces at a higher rate than the income depressing forces. The growth of contributing activities includes the creation of entrepreneurship, expansion of workers' skill and the increase in the rate of savings, investment, capital formation and technical know-how etc.

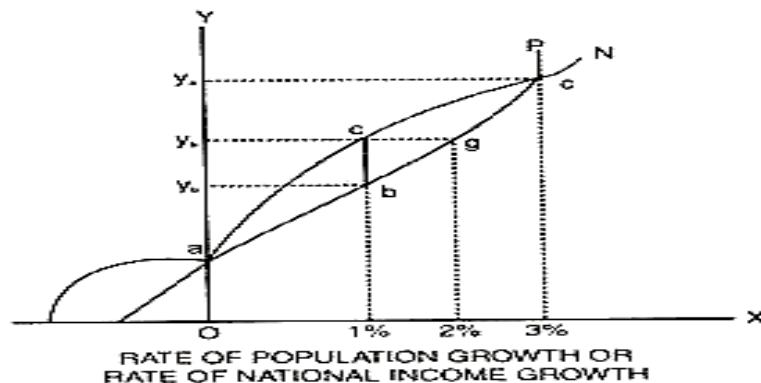
### **Population Growth and Per Capita Income:**

Leibenstein's theory recognizes population growth as a function of per capita income. It is related to the various stages of economic development. At the subsistence equilibrium level of income, fertility and mortality rates are the maximum consistent with the survival rate of population. Now if the per capita income is raised above the subsistence equilibrium position the mortality rate falls without any drop in the fertility. The result is an increase in the growth rate of population. Thus, an increase in the per capita income tends to raise the growth rate of population. It is only up to a point. Beyond that the increase in the per capita income lowers the fertility rate and as development gains momentum, the rate of population growth declines.

The Leibenstein argued that with the increase in per capita income, the desire to have more children declines. Specialization leads to increasing income levels and the consequent-social and economic mobility make it a difficult and costly affair to support a large family. Hence, growth rate of population becomes constant and then starts declining gradually as the economy gradually advances towards the path of sustained development. According to Leibenstein, a biologically maximum growth rate may be about 3 or 4 per cent. Leibenstein, thus suggests to make sufficiently the necessary critical minimum effort so as the control such a very high population growth.



The relationship between population growth and per capita income is illustrated in the diagram 3.9.



**Fig. 3.9. Population growth and Per capita income**

**Diagrammatic Representation:**

In figure 3.9, rate of population growth or rate of national income growth is shown on the horizontal scale and per capita income on the vertical scale. Curve P indicates the population growth and curve N indicates the level of per capita income. Let us start from the point at which represents the subsistence equilibrium point. Here the population growth or national income growth is zero. When the per capita income rises to  $y_b$ , the population growth rate and national income growth rate both are equal to 1%. When per capita income rises to  $y_c$ , we have the point's c and g on curves N and P respectively. These points signify that at the  $y_c$  level of per capita income, the population growth rate is 2% whereas national income growth rate is 1%. Thus, this is a disequilibrium state and cannot represent a level of income that can sustain itself. Therefore, the level of per capita income should be raised to that level at which population growth rate starts declining and national income growth rate starts rising. The only such point is y. At this level of per capita income the population growth rate is 3%. The growth rate of population, according to Leibenstein is maximum biologically determined. After  $y_e$  level of per capita income, the population starts declining and national income starts rising. Thus  $y_e$  level of per capita income is critical minimum per capita income which can sustain itself or which can generate the process of self-sustained growth.

### **3.8. LOW INCOME EQUILIBRIUM TRAP**

#### **3.8.1. Concept:**

The theory of Low Level Equilibrium Trap has been developed by R.R. Nelson for underdeveloped countries. It states that when per capita income increases above the minimum specific level, population tends to increase. But when the growth rate reaches an upper physical limit as the per capita income increases, the growth starts declining.

#### **3.8.2. Definition:**

To put in the words of Nelson, “The malady of underdeveloped economies can be diagnosed as a stable equilibrium level of per capita income at or close to subsistence requirements.” At this stable equilibrium level of per capita income, both rate of investment and saving are low.

If the per capita income is increased above the specific level through saving and investment, it increases a growth in population. The increase in population growth as a result pushes down per capita income to its stable level of equilibrium. Thus, the economy is caught in a low level equilibrium trap. To come from this trap, the rate of increase of growth of income must be higher than the rate of increase in population.

#### **3.8.3. Explanation of the theory: Conditions for Trapping:**

**There are certain conditions conducive to trapping as detailed below:**

- ❖ A high correlation between the level of per capita income and rate of population growth;
- ❖ A low propensity to direct additional per capita income to increase per capita investment;
- ❖ Scarcity of uncultivated arable land;
- ❖ Inefficient production methods;
- ❖ Cultural inertia and economic inertia.

**Nelson uses a model with following three equations:**

#### **1. Income Determination Equation:**

The income depends upon capital stock, size of population and the level of technique. Capital consists of produced goods and arable land used in production process. Economies caught in low level equilibrium trap are often

marked by considerable stock i.e. the existing inputs are not producing the maximum amount of output.

## **2. Population Growth:**

Low per capita income can bring temporary changes in the rate of population growth and this change is brought by change in death rate. The change in death rate is caused by the change in the level of per capita income. But when the per capita income reaches to a specific level, it has no effect on the death rate.

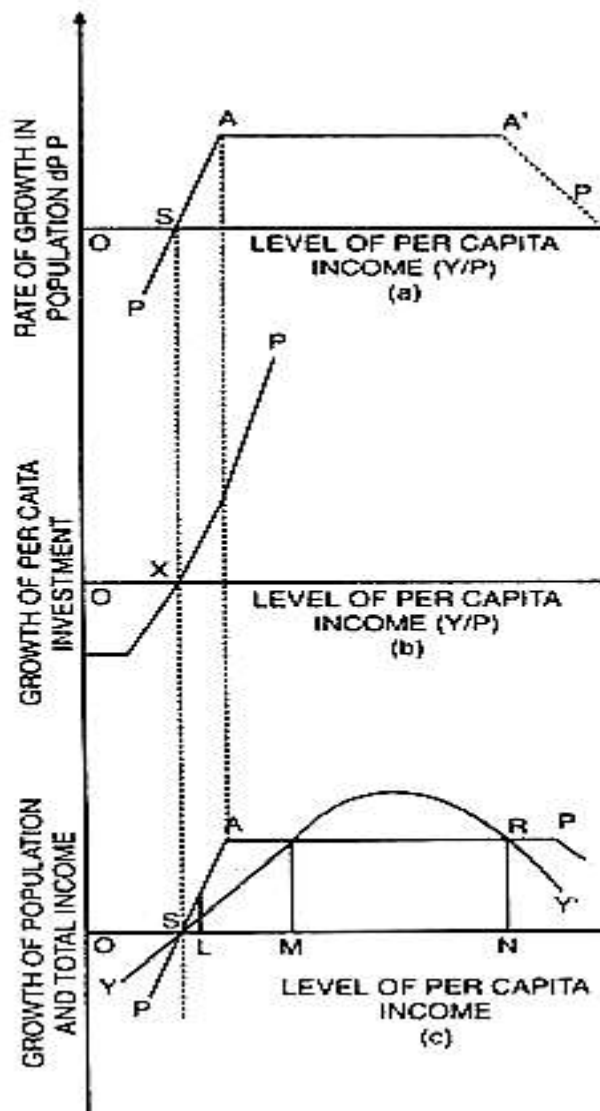
## **3. Net Capital Formation:**

Net investment consists of capital created out of savings. Capital can be created out of current income at an alternative cost of consumption and if that is unused land then capital may be increased by putting this land to cultivation. The rate at which the additional units of land are cultivated is positively related to increase in population.

### **Diagram Representation:**

With these three relationships, it is easy to verify that an underdeveloped economy is caught in a low level trap. Its explanation is as under: In fig.3.10. (a), per capita income  $y/p$  is expressed on X- axis and rate of growth in population on Y-axis. In this figure, the point S is the minimum specific level of per capita income, where the level of per capita income is equal to the growth curve of population. The population towards left of this point starts decreases above the certain minimum specific level, the population increasing till it reaches its 'upper physical limit'. For some time, population will grow with the increase in real income i.e. from A to A'. The growth of population will continue up to the point of A' and after this, it starts declining. This decrease is due to rise in per capita income level and at this stage, people become conscious about their living standard and try to adopt small family. Therefore, the curve pp represents the population growth path at different levels of per capita income.

In fig. 3.10. (b), level of per capita income is taken on X-axis and growth of per capita investment is taken on Y-axis. In the diagram, X denotes the level of income with zero saving i.e. all income is spent on consumption. There is negative investment towards the left of X because savings are negative.



**Fig. 3.10. Low income Equilibrium trap**

The per capita income rises above the zero saving level as it moves towards right of X. As a result, investment curve 'I' rises and it has no upper physical limit. In fig. 3.10. (c), level of per capita income is represented along X-axis and rate of growth of population and total income along Y-axis. For simplicity, it is assumed that minimum specific level of per capita income S is the same as the zero saving level of per capita income. The point S in this diagram represents the point of the low level equilibrium trap. It shows that the intersection of population growth curve PP' and the income growth curve YY' occurs at the zero rate of growth. This exhibits that the growth rate of income equals the growth rate of population. In low level equilibrium trap, any small increase in per capita income is not able to sustain itself or lead to further increase in per capita income. In fig. 3.10. (c), at point L, the rate of growth of population is higher than the rate of growth

in the total income. Consequently, per capita income will fall to previous low equilibrium level OS, which is the point of stable equilibrium. All this happens towards left of M because here the growth in population is greater than rate of growth in total income. Thus, the economy will be caught in the low level equilibrium. According to Prof. Nelson, this low level equilibrium trap will be stronger more quickly, the rate of population growth responds to a given rise in per capita income and more slowly the rate of growth in total income responds to an increase in investment. It is only possible when the level of per capita income is increased by a discontinuous jump beyond the level of per capita income i.e. more than SM.

In short, a country can hope to come out of low level equilibrium trap because the rate of growth of total incomes exceeds the rate of growth of population. Again, beyond point 'R', further action is required by the active role of Government to raise the level of income above the growth of population. For instance, if BM is taken as 3%, then Nelson says that if a country has to break the shackles of low equilibrium trap, its rate of growth must be higher than 3% per annum.

#### **Factors Escaping Low Level Equilibrium Trap:**

The following factors are suggested to escape from the low level equilibrium trap:

1. There should be favourable socio political environment in the country.
2. Capital and income should be enhanced by obtaining funds from abroad/international institutions.
3. Improved techniques should be used to utilize existing resources.
4. The requisite methods should be adopted to change distribution of income.
5. Social structure can be changed by laying stress on thrift and entrepreneurship so that there must be ample opportunities, incentives to limit the size of family.
6. Solid investment programme should be introduced by the Government.
7. Efforts should be made to increase production with modern and latest techniques of production.

To conclude the discussion, if the growth rate of income is increased more than growth rate of population, then only low level of equilibrium trap can be

escaped. Once this is achieved above a certain per capita income level, the continuous growth process will take place without any further government action until a high level of per capita income is attained.

### **3.9. DUALISM**

#### **3.9.1. Introduction:**

At present, the Indian economy is characterised by a dualistic economic structure where a modern economy is existing along-with a primitive traditional economy. Dualism is one of the important characteristics of an underdeveloped economy. Thus under dualism, two sectors, i.e., modern or advanced sector and traditional or backward sector exist and operate side by side.

Dualism may be broadly of two types, i.e., technological dualism and social dualism. Technological Dualism, as Benjamin Higgins mentions it in his book 'Economic Development', indicates the applications of different production functions in the advanced sector as well as in the traditional sector. Under this dualism, advanced sector is capital-intensive and backward sector is labour-intensive. Again Social Dualism, as mentioned by J.H. Boeke in his book 'Economies and Economic Policy of Dual Society', indicates two different strata, i.e., upper strata and lower strata in the society. Boeke's social dualism indicates presence and conflict of an alien social system with an indigenous social system of the country itself. In India, social dualism and such consequent conflict is absent. But in Indian economic structure, technological dualism prevails. In this type of dualism, "productive employment opportunities are limited; not because of lack of effective demand, but because of resources and technological restraints in the two sectors." In a less developed country like India, the economy is represented by traditional rural sector characterised by peasant agriculture, small and cottage industries and handicrafts which are largely adopting labour-intensive techniques of production.

On the other hand, the economy is also supporting an advanced modern sector consisting of large-scale industries, like mining industries, iron and steel, plantations, power plants etc. which are characterised by fixed

technical coefficients, lower degree of substitutability of factors and largely adopting capital-intensive techniques of production. Again India is facing a peculiar situation where the country is facing population explosion resulting from increasing natural growth rate of population and slow growth of employment opportunities in the industrial sector due to its fixed technical coefficients. Due to this low rate of absorption of labourers in the industrial sector, more and more labourers are being engaged in the agricultural sector due to its variable technical coefficients. This increasing absorption of labour force in the agricultural sector has resulted in an increase in the ratio of labour to both land and capital. Moreover, the increasing absorption of labour has been resulting disguised unemployment in the agricultural sector. Due to this excess labour supply, labour productivity, levels of technology, pace of mechanisation remain low in agricultural sector. Another peculiarity of technological dualism exists in the Indian labour market where an artificially high wage rates prevail among the organised industrial labourers due to increasing trade union activity and direct intervention by the government in the labour market. Simultaneously, the level of wages in the unorganised rural sector remained low. Thus considering all these peculiarities, Indian economy can be considered as a dualistic economy.

### **3.9.2. THEORIES OF DUALISM:**

There are different theories which are of the view that the poverty and underdevelopment of poor countries is attributed to their dualistic character.

1) Social Dualism, (2) Technological Dualism and (3) Financial Dualism.

#### **SOCIAL DUALISM:**

##### **Meaning of Social Dualism:**

According to Prof. Boeke, "Social Dualism is the clashing of an imported social system with an indigenous social system of another style. Most frequently the imported social system is high capitalism. But it may be socialism or communism just as well, or blending of them." Prof. Boeke uses 'East' and 'West' as different expressions for the underdeveloped or dual economies and developed capitalist economies, respectively.

Underdeveloped economies that is economies of the East are generally underdeveloped economies. Co- existence of two diverse social orders is the

principal property of such economies. Social dualism thus is kind of social disintegration caused by the rise of capitalism in less developed economies. This integration highlights the conflict between the imported social order and the indigenous social order of the underdeveloped economies. In the opinion of Prof. Boeke, “Without doubt the most frequent form of a social dualism is to be found there where an imported Western Capitalism has penetrated into a pre-capitalistic agrarian community and where the original social system, be it not undamaged, has been able to hold its own or, expressed in opposite terms, has not been able to adopt the capitalistic principles and put them into full practice.”

### **Characteristics of Social Dualism:**

According to Boeke, following are the main features of social dualism:

#### **1. Limited Needs:**

The foremost characteristic of eastern or the pre-capitalist indigenous sector of dualistic economies is marked by limited needs in sharp contrast with the western society. In western society, wants are unlimited. The reason of limited needs of the dualistic economy is simple habits and simple way of thinking. People are therefore contented with their limited means or money incomes. As soon as people earn sufficient money income to fulfil their limited needs, people start preferring leisure to work. The supply curve of labour is thus generally backward- sloping in these economies. This implies that in response to rise in wages beyond a particular point the supply of labour starts diminishing, rather than increasing.

#### **2. More Importance of Social Needs:**

Boeke’s theory lays more emphasis to social needs. Social perspective is of greater importance than the national perspective. In other words, social value of the goods is of more important than their economic value. In the words of Prof. Boeke “It is not their economic usefulness or the individual services they render their possessor which determine the value of goods. It is what the community thinks of the commodities that give them value.” In fact the lower the development of individual, the greater his dependence on social tradition and the fewer his economic needs, the more place is given to social needs. In



this way, he gives more importance to social needs of eastern sector as compared to western sector.

### **3. Importance to Self Sufficiency:**

The eastern society considers 'family' as unit and every individual is self-sufficient in his needs. People cannot easily induce to organise production or to collect investment. According to Boeke "Not only do they feel strangers to basic forms of exchange like business and profession but in so far as these are business they are always one man affairs that can hardly compete with western capitalism and are not lasting." Thus, the purpose of production is not merely profit-making but also satisfying personal needs.

### **4. Unorganized Labour:**

According to Boeke, the labour is totally unorganised, passive, silent and casual in dualistic economy. Moreover, the labour is unskilled and immobile too. People hesitate to leave their homes as they have attachment for petty things. Due to immobility, the labour remains unorganised and as such his bargaining power remains weak. The people are orthodox in outlook. In contrast, the people in western, economy are progressive, dynamic and forward looking. They display their interest in every type of adventure. Wages in the eastern sector are low due to lower marginal productivity.

### **5. Idea of Income is not suitable:**

The idea of income does not fit in eastern society. Income is a thing that a man gets more or less regularly as a result of acts of exchange. If income is not received in the shape of money, it can never be evaluated in terms of money. In fact, eastern society has barter terms of trade. Thus, maintenance of household cannot be termed 'income' in strict sense because there is no absolute price basis nor any basis to determine the costs.

### **6. Lack of Profit Motive:**

Production is not done for the profit motive in the economies of East. Thus the modern theories of business enterprise do not hold good in these economies. Windfall profits and losses are attached greater significance in these economies than the continuous and consistent flow of income. Further there is general lack of entrepreneurship in these economies.

## **Policy Implications of Social Dualism:**

Boeke's theory of social dualism has the following implications:

### **1. Agriculture:**

Boeke feels that western economic theory can hardly bring about any improvement in agriculture in eastern areas. Instead, it may cause retrogression because the mental attitudes of farmers is not changeable. They stick to old and unscientific methods of cultivation. Boeke is of the opinion that the culture of villagers is totally based on traditionalism and the farmers cannot afford to accept new change.

### **2. Industry:**

In the field of industry, the eastern countries have different approaches to its counterpart i.e. western countries in producing the same commodity. However, technological progress along western lives is impossible because, there is no question of the eastern producer adapting himself to the western example technologically, economically or socially. If the eastern producer initiates a western producer he will merely loose his competitive qualities. In support of his view, Boeke holds the example of Indonesian economy who adopted western technology to achieve the goal of industrialization and self-sustained growth but ruined its small industry.

### **3. Unemployment:**

Prof. Boeke's pessimistic approach also held the similar views to the problems of unemployment.

Thus, he distinguishes five type of unemployment:

- (i) Seasonal
- (ii) Casual
- (iii) Unemployment for regular labour
- (iv) Unemployment of white collared in urban areas
- (v) Disguised employment.

The problem of unemployment in underdeveloped areas is so acute that its solution is beyond the reach of government. The solution to these five kinds of unemployment would need large financial investment and government has limited resources and, thus, government remains in dilemma.

#### **4. Economic Development:**

Prof. Boeke says that economic development is hampered by the limited wants of the eastern society. The increase in the supply of food stuff and industrial goods results in glut in commodities in the market which does not help in improving economic development of the area. This leads to depression and fall in investment.

In short, Boeke's idea was that any industrialization or agricultural improvement should be gradual so as to suit in the framework of dualistic economy. Otherwise, any radical changes in the structure of the dualistic economy might prove harmful.

#### **5. International Relations:**

Prof. Boeke has stressed the need for 'village restoration'. The term village restoration implies that basic character of village should be kept intact and it should not be disturbed through the influence of international trade. The restoration of the village can take place through the revival and adoption of democratic means among the rural peasantry class. This will provide an opportunity for new leaders to come forward and take up the local and social responsibilities with a sense of determination and devotion. They should work for the goal of economic development with faith, confidence and patience.

#### **6. Organization:**

In organisation too, there is a lot of difference in eastern and western countries. The highly capitalistic forms of organization especially in mining, transportation in western society cannot be adopted in eastern society.

#### **7. Absence of Profit Motive:**

Another feature of dualistic economy in the eastern society is almost the absence of profit motive. The profit from speculative activities, however, holds attraction for them.

#### **8. No Technical Advancement:**

Technological progress of western sector has yet to touch the eastern society of dualistic economies. In the words Boeke, "in fact, there is no question of the eastern producer adapting himself to the western example technologically, economically or socially."

### **9. Lack of Industrialization:**

The Industrialization in the eastern sector lacks initiative, drive, discipline and organizational capabilities. In contrast, in western sector, industry passes all these business qualities.

### **10. Aversion of Capital:**

According to Boeke, industry in the eastern sector is not investment minded. He further claims, "Aversion to capital owing to some sort of conscious dislike of investing capital and risks attending this."

### **11. Lack of Professional Trading:**

The Professional Trading is conspicuous by its absence in the eastern sector. Indeed, there is exchange of goods at personal level. By and large, trading profession is almost unknown to the people as they are totally ignorant of the new market.

### **12. Urban Development at Behest of Rural Economy:**

Prof. Boeke holds the view that in a dual economy, urban development flourishes at the cost of rural economy. In the wake of urbanisation, there occurs a progressive fall in the rural population and income. In other words, hardships of rural life compel the villagers to pull to the cities.

### **13. Absence of Free Competition:**

Another dominant characteristic of eastern sector is that there is absence of full competition of land and rent and it depend on the land owner's need for money. Moreover, factors of production lack homogeneity and mobility. As a result distribution of income is not in accordance with marginal productivity theory.

### **14. Export is Main Objective:**

Boeke also makes distinction on the ground that export is the great objective of foreign trade in the eastern sector. It means that it only makes import possible in the western sector.

### **Critical Appraisal:**

Boeke's theory of social dualism points a gloomy picture for under-developed countries. This is due to peculiar circumstances in which it was formulated. In fact, under the name of 'Ethical Policy', in Indonesia a genuine effort was made to raise the standard of living during 1900 to 1930.

However, following are the main grounds of Higgins criticism:

**1. Wants Limited—Not True:**

It is wrong to universalise that people in underdeveloped countries have limited wants and supply curves of effort and risk taking are backward sloping. Truly speaking, the marginal propensity to consume and to import are high which result into larger demand for domestic and foreign semi luxuries. Therefore, it is a problem for those governments to control the fast expanding wants of the people. The wants of the villagers are numerous and varied. Thus, Boeke's contention that wants in under developed countries are limited, is not borne out by the actual facts and not consistent with human nature.

**2. Trade Unions not visualised:**

Boeke's dualistic theory ignores the role of trade union. The workers are unorganised, passive, silent and casual in underdeveloped countries. This is inconsistent with the growing strength of organised labour even in Indonesia. In fact, trade union activities are becoming more and more streamlined all over the world. Workers are more organised, vocal and active. These trade unions fight for their rights and actively participate in various activities.

**3. Labour not Immobile:**

It is not possible to accept that people in eastern economies are inherently immobile and do not move from villages to towns. Rapid urbanisation in these economies is a specific proof of the migration of village people to cities. In fact, the attraction of the urban life such like cinemas, cafes, shops, libraries and sport events, has proved to be attractive to the villagers who get a taste of it which has resulted in congestion, inadequate community facilities and unemployment in big cities.

**4. Not Peculiar to Underdeveloped Economies:**

Prof. Boeke takes one eyed view by saying that the phenomenon of dualism is only confined to the eastern economies. He himself admits that social dualism also exists in underdeveloped economies of Africa and Latin America. But this fact is not peculiar in underdeveloped economies. To some degree, it exists in almost all economies. In this sense, even the most developed countries can be categorised as dual.

### **5. Applicable to Western Societies:**

This theory has also been criticized on Boeke's view that western economic theory is not applicable to the problems of eastern economies. But Prof. Higgins holds the view that the tools of western economic theory pertaining to monetary and fiscal policies can be applied with certain modifications to solve the crucial problem of balance of payments, disequilibrium and unemployment etc. of UDCs.

### **6. Not a Theory but Description:**

Prof. Boeke fails to provide a distinctive economic and social theory for underdeveloped economies. The dualistic theory undoubtedly explains the various traits of eastern economies but fails to furnish an integral approach to the social and economic theory of such countries. On this ground, dualistic theory failed bitterly.

### **7. No Solution to the Problem of Unemployment:**

Prof. Boeke has talked about five types of unemployment in his dualistic theory. But he has not provided any satisfactory solution to meet with the problem of unemployment. In fact, he regards unemployment of various categories as 'beyond the reach of government help'. Modern government really plays a pioneer role in mitigating the unemployment problems through the device of development planning.

### **8. Technological Possibilities are not limited:**

Prof. Boeke's view regarding limited technological possibilities in both agriculture and industry is also not sustainable. A number of underdeveloped countries have introduced new techniques in the agricultural sector and have recorded substantial improvement in agricultural productivity. Similarly, in industrial sector one finds a growing number of enterprises efficiently organised and managed by eastern people.

### **Conclusion:**

On the basis of above criticism, it can be concluded that this theory does not provide answer to problems of underdevelopment. The main problem of underdeveloped country is unemployment and scarcity of capital. In the end, "there are no special economic theories or methods of analysis fashioned uniquely for the study of underdeveloped world.

## **2) TECHNOLOGICAL DUALISM:**

### **Meaning of Technological Dualism:**

Prof. B. Higgins explains the theory of technological dualism with the co-existence of traditional sector using traditional technology and modern sector using modern technology in less underdeveloped countries. In this context, dualism is “a situation in which productive employment opportunities are limited not because of lack of demand, but because of resource and technological restraints in two sectors.”

An underdeveloped country is characterized by such dualism as it provides a lot of unemployment and under employment. The resource endowments and differences in production functions in two sectors forms the basis of technological dualism which results in an inadequate number of openings for productive employment. Prof. Higgins is of the opinion that different Resource Endowment and Production Function across the traditional and modern sectors of the less developed economies is the fundamental basis of technological dualism in these economies.

### **Characteristics of Dual Sector:**

The traditional rural sector has following main features:

1. It is engaged in peasant agriculture, handicrafts or very small industries.
2. Products can be produced with wide range of technologies and wide range of combinations of labour and capital. Thus, the sector will have variable technical coefficient of production.
3. The factor endowment in this sector is such that labour is relatively abundant factor and techniques are labour intensive.

### **Features of Modern Sector:**

1. This sector includes industries, plantation, transport and related activities as its principal occupations.
2. There is a limited scope of Technical substitutability of factors of production. Accordingly, technical co-efficient of production remains generally fixed.
3. Compared to labour, more of capital is utilized. Thus the process of production is dominated by the capital intensive technique of production.

4. Besides labour and financial-capital, developed land also constitutes a major resource of production in this sector. This sector caters to the domestic needs of the consumers as well as producers goods for exports.

**Explanation of Technical Dualism:**

There are two fundamental basis of technical dualism, according to Prof. Higgins:

**1. Differences in Factor-Endowment:**

Difference in the availability of capital and labour is one of the two fundamental basis of technical dualism. The traditional sector of the dual economies is generally characterised by the abundance of labour but chronic shortage of capital. So, production techniques are often labour intensive in the sector. In contrast, in the modern sector, more of capital compared to labour is generally employed. Thus almost two distinct techniques of production are found to exist across two different sectors of the dual economies.

**2. Difference in Production Function:**

Difference in production function is second fundamental basis of technical dualism. While there are fixed coefficients of production function in the modern sector, these are often variable in the traditional sector. Higgins analyses this duality in the context of "Factor proportions". Eckaus offered a detailed explanation of this feature of less developed countries. Higgins used this concept in this descriptive analysis of problem of unemployment in less developed countries. Technological dualism suggests that the existence of vast unemployment in less developed economies is not due to the lack of effective demand but owing to the 'resource' constraint as well as technological backwardness. As regards resource- utilization, the less developed countries have severe structural imbalances:

- (1) One finds different co-efficient of the same factor in its alternative usage,
- (2) The price structure is not compatible with resource supply.

Thus, Prof. Eckaus is of the opinion that the problem of unemployment is generated owing to:

- (1) Incompleteness of price management and
- (2) Surplus of labour owing to the technical as well as demand constraints.



Prof. Higgins explained with the help of figure are based on the following assumptions:

(1) There are two sectors of the economy:

(a) Traditional sector

(b) Modern sector

(2) There are two factors of production:

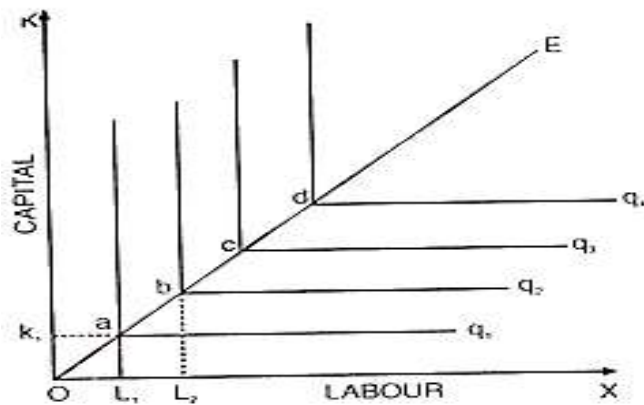
(a) Capital

(b) Labour

(3) Two Commodities are produced

In this diagram 3.11 units of capital (K) are measured on vertical axis and units of labour (L) on the horizontal axis. The points a, b, c denote the fixed combinations of factors i.e., capital and labour (K & L). The curve  $q_1$ , is an isoquant representing a certain level of output, as drawn, the output  $q_1$  can be produced only with the unique combination of factors at point a. The curves  $q_1$   $q_2$   $q_3$  and  $q_4$  etc. represent different levels of output increasing along the expansion line OE. The output can be increased only by increasing the use of K and L in constant proportions given by slope of OE. The dotted curves represent the case of 'fixed technical coefficient'. The line OE represents the expansion path of this sector and its slope is constant, relatively capital intensive factor ratio.

When capital and labour are actually available in proportions equal to fixed capital-labour ratio, it is possible that both factors are simultaneously fully utilized. If the actual factor endowment is to the right of the OE say at point F i.e. there must be some unemployment of labour in this sector. To produce an output of  $q_1$  the sector will, use  $OK_1$  units of capital and  $OL_1$  units of labour. If  $OL_2$  units are available, the excess labour supply has no effect on production techniques and  $L_1L_2$  units of labour will remain unemployed or will find to seek employment in the traditional sector. Therefore, it is only when capital increases over time and more labour will be employed with the result of expansion of output.



**Fig. 3.11. Technological Dualism**

According to Higgins unemployed labour in the industrial sector is left with no option other than seeking employment in the rural sector of the economy. Technical coefficient of production can be changed in the rural areas facilitating the absorption of labour with still greater application of the labour intensive technique of production. But this reduces the marginal productivity of labour even to the zero level causing the problem of disguised unemployment in the rural areas of less developed countries.

From the above discussion, we can conclude that the existence of technological dualism tends to increase unemployment and disguised unemployment in underdeveloped countries. The expansion of industrial sector mostly takes place with the help of foreign capital; industrialization leads to much faster growth of population as compared with the rate of accumulation of capital which is the major cause of growing unemployment in these countries.

**Critical Appraisal:**

The theory of technological dualism definitely is an improvement over Boeke's social dualism. It is realistic as it focuses now disguised unemployment gradually arises in the dualistic economies. Despite the fact, its relevancy in the contemporary world can be challenged. In this regard, Prof. G. Meier has expressed his doubts saying, "Has the production in the advanced sector actually being carried on with fixed coefficients? Even if an advanced, capital intensive processes were initially imported, was there subsequently no adoption to the abundant labour supply? Was technical progress actually labour saving in advanced sector?" These are the crucial questions which call for empirical investigation.

As such the theory is criticised on the following grounds:

**1. Coefficients not Fixed in Industrial Sector:**

This theory assumes that the production in industrial sector is carried on with fixed proportions between labour and capital, but this assumption is not valid and possibility of substitution of one factor by another cannot be ruled out. Modern age is a dynamic age and the notion of fixed coefficients appears to be unconvincing. Everything is likely to undergo a change and nothing remains constant. Hence, the assumption of fixed coefficients is untenable.

**2. Factor Prices do not depend on Factor Endowment:**

This theory successfully explains how the factor endowment and differences in production function have resulted in creating disguised employment in traditional sector. This is related to the pattern of factor prices. But factor prices do not depend on factor endowments completely.

**3. Neglects Institutional Factors:**

Another drawback of the theory is that Higgins neglects the institutional and psychological factors which greatly influence factor proportions. It is not the technological factors alone that affect labour capital ratio but the sociological factors also exercise their influence on it.

**4. Neglects the Use of Labour Absorbing Techniques:**

This theory indicates that capital intensive techniques are used in industrial sector while such techniques are generally labour saving. (All imported techniques are not labour saving.) For example, Japanese agricultural development cannot be attributed to use of capital intensive technique.

But it was the result of the application of better seeds, manure, improved methods of cultivation, increasing use of fertilisers etc. Thus, Higgins neglects the possibility of such developments in a dualistic society.

**5. Concept of Disguised Employment is Ambiguous:**

Prof. G.E. Meier maintains the opinion that the concept of disguised employment has not been properly discussed in Higgins theory. Further, he suggests that, "greater clarity is needed on the nature of unemployment and underemployment in traditional sector." Similarly, he fails to assess the extent of excess labour supply in industrial sector. In this way, technological dualism seems to be ambiguous.

**Conclusion:**

Since Higgin's theory of technological dualism suffers from various drawbacks, yet it clearly explains the reason for the appearance of disguised unemployment in underdeveloped countries. It appears to be more realistic in saying that technological dualism is the real cause of structural and technological unemployment in Dualistic Economies. In this regard, this theory is superior to the theory of Prof. Boeke's social dualism.

**3) FINANCIAL DUALISM:****Meaning of Financial Dualism:**

Professor Myint has developed the theory of financial dualism. Financial dualism means the coexistence of organised and unorganised money market in the LDCs. The organised money market consists of the central bank, the commercial banks, the cooperative societies and banks, the foreign banks, and other financial institutions like agricultural finance corporation (as NABARD in India), industrial finance corporation (like the IFCI in India), the insurance companies (such as LIC, GIC, etc. in India), and the development banks (like IDBI, SIDBI, etc. in India).

The unorganised money market includes indigenous bankers, moneylenders, both professional and non-professional, traders, merchants, landlords, friends and relatives, pawnbrokers, *nidhis* and *chit funds*.

The unorganised money market is characterised by:

- (i) Personal touch between the moneylenders and borrowers;
- (ii) Informality in dealing with borrowers by the moneylenders;
- (iii) Flexibility in loan transactions;
- (iv) Lending activities, i.e. combining moneylending with other economic activities such as trading;
- (v) Interest rate varying with the need of the borrower, the amount of loan, the time for which it is needed, and the nature of security;
- (vi) Utmost secrecy in maintaining accounts and lending procedures.

**Effects of Financial Dualism:**

The existence of such financial dualism in the money market of an LDC affects its economy in the following ways:

Interest Rate Differences. Financial dualism leads to the existence of different interest rates in the organised and unorganised money markets in such economies. The rate of interest in the organised money market in the traditional sector is much higher than that in the organised money market in the modern sector. The unorganised money market consisting of the non-institutional lenders, such as the village moneylenders, landlords, shopkeepers, traders or the combination of some of them, charge very high interest rates on loans.

The main reason is that there is a real shortage of savings in the traditional sector as substantial amount of savings is hoarded in gold and jewellery. Even though risks and costs of lending money to a large number of small borrowers are very high, yet there are other contributory factors arising from imperfections in this unorganised money market. The village shopkeepers, landlords, moneylenders and traders occupy strategic positions in the village economy and create monopoly powers over the peasants.

These arise because of personal and informal dealings with borrowers, flexibility in loan transactions, and blending of money-lending with other types of activities such as selling of goods. “The high rates of interest which the peasants have to pay are not only formal interest charges but also in considerable part concealed charges obtained through manipulating the prices of the commodities which the peasants buy or sell. Concealed charges may take the form of very high prices for goods on credit terms at the local shop or the obligation to repay the landlord the loans advanced with a specified amount of the crop at harvest.”

On the other hand, in the organised money market of the LDCs, the interest rates are low and credit facilities are abundant. The organised money market consists of the commercial banks and other financial institutions which lend short-term credit at low interest rates to the modern business sector consisting of the big foreign-owned enterprises in the export industries, the government and the large-scale modern manufacturing enterprises.

**(i) Inflation and Balance of Payments Pressures:**

The LDCs are faced with chronic domestic inflation and balance of payments difficulties. As a result, small business units such as peasants,

small traders, handicraft producers, etc. in the traditional sector have to face not only high interest rates but also inaccessibility to foreign exchange and imports. The LDCs have attained monetary independence with the establishment of their own central banks. They have introduced foreign exchange controls and have restricted profit remittances and transfer of funds by foreign commercial banks. As a result, the organised money market of the LDCs has been separated from the world capital market. Coupled with this, they have been following cheap money policy.

This has led to the paradoxical situation in which the central banks in the capital-scarce LDCs are maintaining low interest rates than those prevailing in the capital-rich developed countries thereby overvaluing their exchange rates. They fear that devaluation will lead to repeated devaluation of their currencies and to inflationary pressures. Thus the LDCs are faced with inflationary pressures, declining foreign exchange reserves and balance of payments pressures. Thus there is a chronic excess demand for foreign exchange at the overvalued exchange rates. To overcome this, they have concentrated on foreign exchange and import control and on monetary and fiscal measures and direct controls.

**(ii) Adverse Effects of Fiscal and Monetary Policies:**

Financial dualism has led to aggravation of the economic dualism between the traditional sector and the modern industrial sector. These fiscal and monetary policies have tended to favour the modern industrial sector as against the traditional sector. The cheap money policy by maintaining an artificially low interest rates has made credit available to large industrial concerns at favourable terms. The low interest rates have discouraged the flow of capital funds from abroad and savings from within the country, but have created an excess demand for loans. Thus the bulk of domestic savings at low interest rates have flowed to the modern industrial sector. This has reduced the supply of capital to the traditional small industries and the agricultural sector which have to get it at higher interest rates.

**(iii) Adverse Effects of Controls:**

Further, the imposition of controls on foreign exchange and imports to correct the adverse balance of payments have benefited the modern industrial

sector as against the traditional sector. The modern sector is usually allocated the major portion of the available foreign exchange and the manufacturing industries are encouraged to adopt highly capital-intensive methods of production because the imported capital goods are obtained cheaply at the overvalued exchange rates. Thus there is a strong incentive to substitute cheaper imported capital goods for domestic labour. The agricultural and small-scale sectors suffer from the foreign exchange and import controls on two counts: first, they get imported consumer goods at high prices, and second, they fail to obtain the foreign exchange and import permits easily because of red-tapism and corruption prevailing in the LDCs.

Government control over the scarce supply of capital have also retarded the growth of financial intermediaries in the LDCs. These controls favour the large manufacturing units and banks. They discriminate against the small borrowers and the moneylenders who provide credit to the small borrowers. The government believes that capital funds invested only in durable capital goods and modern machinery are productive, while those invested in financing agriculture and trading activities are unproductive.

According to Myint, the efforts made to control the activities of the moneylenders and to provide cheap and easy credit in the traditional sector through commercial banks and cooperative credit societies have failed due to:

- (a) The high overhead cost and salaries of the officials of the commercial banks in rural areas;
- (b) The red- tapism in dealing with small borrowers according to the rigid rules of creditworthiness;
- (c) The lack of coordination between the head office and branches; and
- (d) The supply of limited amounts of subsidized loans through cooperative credit societies to some favoured parts of the rural sector.

**(iv) Retards the Growth of Capital Market:**

All this has led to mal allocation of resources between the modern and the traditional sectors and to the obstruction of the development of an integrated domestic capital market in the LDCs. With the multiplicity of government controls, the free market for credit has developed into the black

market. Domestic inflation along with overvalued exchange rates have led to speculative flight of capital abroad.

In countries which have tried to stop this, the capital funds have been channelized into the purchase of gold, jewellery, real estate and into speculative activities. This is because of the cheap money policy which offers low interest rates to the holders of funds for investment purposes. This stands in the way of the growth of an effective capital market. Further, credit discrimination against trading activities also stands in the way of the development of an integrated capital market in the LDCs.

### **Suggestions to Reduce Financial Dualism:**

In order to reduce financial dualism in LDCs, a number of measures can be suggested:

#### **1. Integration of Organised and Unorganised Money Markets:**

The organised and unorganised money markets should be properly integrated. For this, the commercial banks should be encouraged to open branches in rural areas, as has been done in India by establishing Regional Rural Banks and Lead Banks.

#### **2. Strengthening of Co-operatives:**

Co-operative societies and cooperative banks should be strengthened so as to enable them to compete more effectively with moneylenders and indigenous bankers.

#### **3. Multi-agency Approach:**

A multi-agency approach should be adopted in the unorganised rural sector where farmers should be advanced loans, seeds, fertilisers, instruments, cattle, etc. and should be helped in providing marketing and trading facilities.

#### **4. Raising Official Interest Rates:**

Prof. Myint suggests that such countries should raise official interest rates in their organised credit markets high enough to reflect their existing shortage of capital funds. This would encourage the growth of an integrated domestic capital market which can effectively attract savings from within the country and from abroad.



### **3.10. FEI AND RANIS MODEL**

**3.10.1. Introduction:** An eminent development economist Arthur Lewis put forward his model of “Economic Development with Unlimited Supplies of Labour” which envisages the capital accumulation in the modern industrial sector so as to draw labour from the subsistence agricultural sector.

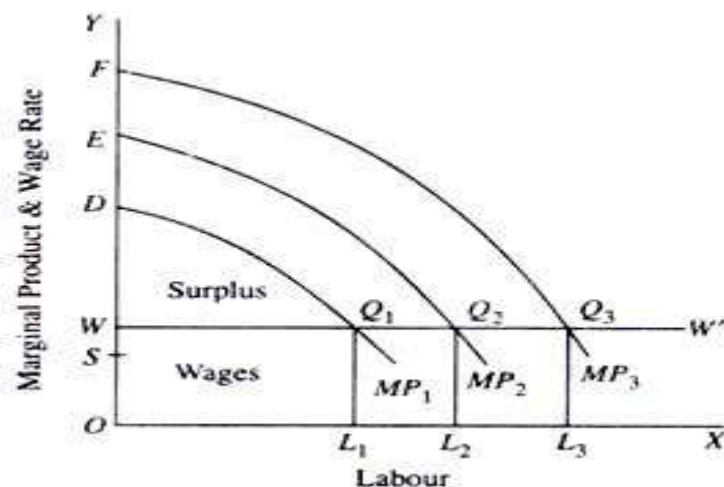
Lewis model has been somewhat modified and extended by Fei and Ranis but the essence of the two models is the same. Both the models (that is, one by Lewis and the other modified one by Fei-Ranis) assume the existence of surplus labour in the economy, the main component of which is the enormous disguised unemployment in agriculture. Further, they visualise ‘dual economic structure’ with manufacturing, mines and plantations representing the modern sector, the salient features of which are the use of reproducible capital, production for market and for the profit, employing labour on wage-payment basis and modern methods of industrial organisation.

On the other hand, agriculture represents the subsistence or traditional sector using non-reproducible land on self-employment basis and producing mainly for self-consumption with inferior techniques of production and containing surplus labour in the form of disguised unemployment. As a result, the productivity or output per head in the modern sector is much higher than that in agriculture. Though the marginal productivity in agriculture over a wide range is taken to be zero, the average productivity is assumed to be positive and equal to the bare subsistence level.

#### **Lewis’ Model of Development with Surplus Labour:**

In the labour-surplus models of Lewis and Fei-Ranis, the wage rate in the modern industrial sector is determined by the average productivity in the agriculture. To this average productivity is added a margin (Lewis fixes this margin at 30%) which is required for furnishing an incentive for labourers to transfer themselves from the countryside to the urban industries as well as for meeting the higher cost of urban living. transfer themselves from the

countryside to the urban industries as well as for meeting the higher cost of urban living.



**Fig. 3.12. Capital Expansion and Growth in Labour Employment**

The process of expansion and capital accumulation in the modern sector and the absorption of labour by it is explained by the accompanying Fig. 3.12. OS represents the real wages which a worker would be getting in the subsistence sector, that is, OS is the average product per worker in the subsistence sector. OW is the wage rate fixed in the modern sector which is greater than OS (i.e., average product in agriculture by) 30%. So long as surplus labour exists in the economy any amount of labour will be available to the modern sector at the given wage rate OW, which will remain constant. With a given initial amount of industrial capital, the demand for labour is given by the marginal productivity curve  $MP_1$ . On the basis of the principle of profit maximisation, at the wage rate OW, the modern sector will employ  $OL_1$  labour at which marginal product of labour equals the given wage rate OW. With this the total share of labour i.e. wage in the modern sector will be  $OWQ_1L_1$  and  $WQ_1D$  will be the capitalists' surplus.

Now, Lewis assumes that all wages are consumed and all profits saved and invested. When the capitalists will reinvest their profits for setting up new factories or expanding the old ones, the stock of capital assets in the modern sector will increase. As a result of the increase in the stock of industrial capital, the demand for labour or marginal productivity curve of labour will shift outward, for instance from  $MP_1$  to  $MP_2$  in our diagram. With  $MP_2$  as the new demand curve for labour and the wage rate remaining constant at OW,  $OL_1$  amount of labour will be employed in the modern sector.

In this new equilibrium situation profit or surplus accruing to the capitalist class will be equal to  $WQ_2E$  which is larger than the previous  $WQ_1D$ . The new surplus or profits of  $WQ_2E$  will be further invested with the result that capital stock will increase and the demand or marginal productivity curve for labour will further shift upward, say to  $MP_3$  position. When the demand curve for labour is  $MP_3$  employment of labour will rise to  $OL_3$ . In this way, the profits earned will go on being reinvested and the expansion of the modern sector will go on absorbing surplus labour from the subsistence sector until all the labour surplus is fully absorbed in productive employment.

It is worth mentioning that in Lewis Model, the rate of accumulation of industrial capital and, therefore, the absorption of surplus labour depends upon the distribution of income. With the aid of classical assumption that all wages are consumed and all profits saved, Lewis shows that the share of profits and therefore rate of saving and investment will rise continuously in the modern sector and capital will continue to be expanded until all the surplus labour has been absorbed. Rising share of profits serves as an incentive to reinvest them in building industrial capacity as well as a source of savings to finance it.

### **Profit as the Main Source of Capital Formation:**

It is clear from the above analysis of Lewis model with unlimited supply of labour that profits constitute the main source of capital formation. The greater the share of profits in national income, the greater the rate of savings and capital accumulation. Thus with the expansion of the modern or capitalist's sector, the rate of saving and investment as percentage of national income will continuously rise. As a result, rate of capital accumulation will also increase relatively to national income.

It is of course assumed that all profits or a greater part of the profits is saved and automatically invested. It is also evident from above that share of capitalist's profits depends on the share of the capitalist sector in the national product. As the capitalist or modern sector expands, the share of profits in national product will rise. This rise in the share of profits in national product is due to the assumptions of the model that wage rate remains constant and prices of the products produced by the capitalist sector do not fall with the

expansion in output. To quote Lewis himself, "If unlimited supplies of labour are available at constant real wage rate, and if any part of the profits is reinvested in productive capacity, profits will grow continuously relatively to the national income".

### **A Critical Appraisal of Lewis Model:**

The validity and usefulness of the labour-surplus model of Lewis for developing countries like India depend of course on the extent to which their underlying assumptions are valid for the economies in question. We are here not interested in validity of all the assumptions, explicitly or implicitly, made in this model. In our view the basic premise of these models is wrong and that makes it unrealistic and irrelevant for framing a suitable development strategy to solve the problem of surplus labour and unemployment. The basic premise of the model is that industrial growth can generate adequate employment opportunities so as to draw away all the surplus labour from agriculture in an over-populated developing country like India where population is currently increasing at the annual rate of around 2 per cent.

This premise has been proved to be a myth in the light of generation of little employment opportunities in the organised industrial sector during over fifty years of economic development in India, Latin American and African countries. For instance, in the 30 years (1951-81) of industrial development in India during which fairly good rates of industrial production had been achieved, the organised industrial employment increased by only 3 million which is too meagre to make any significant impact on the urban unemployment situation, far from providing a solution to the labour-surplus problem in agriculture. Thus, the generation of adequate employment opportunities and as a result the absorption of surplus labour from agriculture in the expanding industrial sector has not proceeded as predicted by Lewis model. It may be pointed out here that migration of some workers from the rural to the urban areas in India has occurred as shown by the slight increase in the degree of urbanisation noticed in the various censuses but these immigrants to the urban areas have not been absorbed into the modern high-productivity employment, as envisaged by Lewis and Fei-Ranis.

This is evident from the statistical data about meagre increase in employment in the organised sector. These immigrants to the urban areas have been mainly employed in petty trade, domestic service and casual work in which the disguised unemployment and poverty exist as acutely as in agriculture. Thus, as things are stand, the traditional sector of the economy is simply moving from the countryside into the cities in apparent contrast to the Lewis model.

**Lewis model neglects the importance of labour absorption in agriculture:**

A grave weakness of the models of Lewis and Fei-Ranis is that they have ignored the generation of productive employment in agriculture. No doubt, Lewis in his later writings and Fei-Ranis in their modified and extended version of Lewis model have envisaged an important role for agricultural development so as to sustain industrial growth and capital accumulation. But they visualise such an agricultural development strategy that will release labour force from agriculture rather than absorbing them in agriculture.

Even about the African countries most of which do not suffer from the Malthusian problem of over-population but are currently faced with acute urban unemployment (especially of what is known as “Unemployment of School Leavers” majority of which have migrated from the villages to the urban- areas) the expert opinion has veered round to the view of seeking solution of labour-surplus problem within agriculture.

**Assumption of adequate labour-absorptive capacity of the modern Industrial sector:**

Another related shortcoming of development models of Lewis, Fei and Ranis is their assumption that the growth of industrial employment (in absolute amount) will be greater than the growth in labour force (which in India at present is of the order of about 8 million people per year). Because only then the organised industrial sector can absorb surplus labour from agriculture. The employment potential of industrial sector is so little that far from withdrawing labour currently employed in agriculture, it does not seem to be possible for the organised industries and services, on the basis of existing capital-intensive technologies, even to absorb the new entrants to the labour force. An important drawback of Lewis model is that it has neglected

the importance of agricultural growth in sustaining capital formation in the modern industrial sector. When as a result of the expansion of capitalist modern sector, transfer of labour from agriculture to industry takes place, the demand for food-grains will rise.

If the output of food-grains does not increase through agricultural development to meet the additional demand for food-grains, prices of food-grains will rise. With the rise in prices of food-grains wages of industrial labour will increase. Rise in wages will lower the share of profits in the industrial product which in turn will slow down or even choke off the process of capital accumulation and economic development. Thus, if no allowance is made for agricultural growth, the expansion of modern sector and capital accumulation is bound to be halted. Thus, neglect of agriculture in the development strategy pursued in India since the Second Plan virtually resulted in stagnation in the industrial sector, during the period 1966-1979.

**The Assumption of Constant Real Wage Rate in the Modern Sector:**

The assumption of constant real wages to be paid by the urban industrial sector until the entire labour surplus in agriculture has been drawn away by the expanding industrial sector is quite unrealistic. The actual experience has revealed a striking feature that in the urban labour markets where trade unions play a crucial role in wage determination there has been a tendency for the urban wages to rise substantially over time, both in absolute terms and relative to average real wages even in the presence of rising levels of urban open unemployment. The rise in wages, as explained above, seriously impairs the development process of the modern sector.

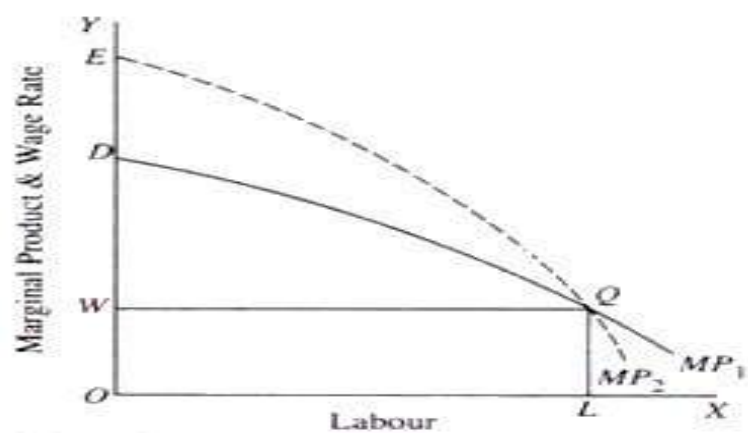
**It neglects the labour-saving nature of technological progress:**

A serious lacuna of the Lewis model from the viewpoint of employment creation is its neglect of the labour-saving nature of technological progress. It is assumed in the model, though implicitly, that rate of employment creation and therefore of labour transfer from agriculture to the modern urban sector will not be proportional to the rate of capital accumulation in the industrial sector.

Accordingly, the greater the rate of growth of capital formation in the modern sector, the greater the creation of employment opportunities in it. But

if capital accumulation is accomplished by labour-saving technological change, that is, if the profits made by the capitalists are reinvested in more mechanised labour-saving capital equipment rather than in existing types of capital, then employment in the industrial sector may not increase at all.

Lewis model has been reproduced in Fig. 3.13. With a modification that profits made are reinvested in labour-saving capital equipment due to the technological change that has taken place. As a result of this, marginal productivity curve does not shift uniformly outward but crosses the original marginal productivity curve from above. It is evident from Fig. 3.13, that with the constant wage rate  $OW$ , the employment of labour does not increase even though marginal productivity curve has shifted. It will be observed from Fig. 3.13 that though employment of labour and total wage ( $OWQL$ ) have remained the same, the total output has increased substantially, the area  $OEQL$  is much greater than the area  $ODQL$ . This illustration points to the fact that while the industrial output and profits of the capitalist class can increase, the employment and incomes of labour class remain unchanged. Although GNP has increased, labouring class has not received any benefit from it. It is not just theoretical illustration but has been actually borne out by the experience of industrial development of several developing countries. This experience shows that while industrial output has significantly increased, employment has lagged far behind.



**Fig. 3.13. Capital Expansion with Labour saving Technological change**

### **Lewis Model Ignores the Problem of Aggregate Demand:**

A serious factor which can slow down or even halt the expansionary process in Lewis model is the problem of deficiency of aggregate demand. Lewis assumes, though implicitly, that no matter how much is produced by the capitalist or modern sector, it will find a market. Either the whole increment in output will be demanded by the people in the modern sector itself or it will be exported. But to think that entire expansion in output will be disposed of in this manner is not valid. This is because a good part of the demand for industrial products comes from the agricultural sector.

If agricultural productivity and therefore incomes of the farming population do not increase, the problem of shortage of aggregate demand will emerge which will choke off the growth process in the capitalist industrial sector. However, once an allowance is made for the increase in agricultural productivity through a priority to agricultural development, the basic foundations of Lewis model crumble down. This is because a rise in agricultural productivity in Lewis model will mean a rise in wage rate in the modern capitalist sector. The rise in the wage rate will reduce the capitalist's profits which in turn will bring about a premature halting of the expansionary process.

### **Conclusion:**

Despite several limitations and drawbacks Lewis model retains a high degree of analytical value. It clearly points out the role of capital accumulation in raising the level of output and employment in labour-surplus developing countries. The model makes a systematic and penetrating analysis of the growth problem of dual economies and brings out some of crucial importance of such factors as profits and wages rates in the modern sector for determining the rate of capital accumulation and economic growth. It underlines the importance of inter sectoral relationship (i.e., the relationship between agriculture and the modern industrial sector) in the growth process of a dual economy.



### **3.11. DEPENDENCY THEORY OF DEVELOPMENT**

Dependency Theory seeks to analyze international politics by concerning itself with the existing unequal relationship among nation-states i.e. between Developed Countries (Centre) and Underdeveloped Countries (Periphery). The origin of Dependency Theory came as an alternative to the theories of modernisation and development as formulated and supported by the Western and Marxist scholars. Naturally, it involves a strong criticism of both Structural and Marxist approaches.

The Dependency theory begins with a study of the colonial impact on the indigenous socio-economic and political structures, then seeks to analyze the characteristics of the new socio-economic structure, and finally seeks to trace its evolution in relations to both the internal changes and developments in the World capitalist system.

#### **Underdevelopment as Dependency:**

The Dependency Theory analyses the internal dynamics of underdeveloped countries and relates their underdevelopment to their positions in the international economic system. It also examines the relation between the internal and external structures.

The underdevelopment of the Third World countries is explained by it in terms of the socio-economic-politico-cultural processes which link these countries to the developed countries. The underdeveloped countries are regarded as the peripheries and the developed countries as the centers, and it is held that the nature of social phenomena in the periphery can be understood and analyzed only with reference to the world capitalist system, which stands dominated by the developed centers.

The central point in the Dependency Theory is that the nature of social phenomena in the Third World countries is determined by the process of underdevelopment which characterizes these countries and which is the result of the expansion of World Capitalism. Further, this process of underdevelopment is intimately and inseparably related to their external dependence. In fact, almost all the dependency theorists generally agree that underdevelopment is caused by external dependence particularly on capitalist countries.

### **Dependency as the Product of Expansion of World Capitalism:**

The Dependency Theory presents a macro-historical and structural perspective. It involves a rejection of the Continuum and Marxist explanations of development and underdevelopment. Underdevelopment is explained by it as a product of capitalist expansion which is accompanied by unequal exchanges and in which the Centre/Core/Metropolis exploits the resources and labour of the periphery for its advantage. The periphery lives in a state of dependency and is characterised by underdevelopment.

Thus, dependence is the relationship between the dependents and the developed countries. It is a situation which conditions the ability of the underdeveloped to develop. It is limited by the expansion of capitalism. Its traditional form was imperialism or colonialism while its contemporary form happens to be Neo-colonialism, i.e., a state of dependency of the underdeveloped periphery (the new states) upon the developed (the former imperialist- colonialists). Most of the dependency theorists use centre-periphery paradigm for analyzing the nature and scope of international relations as well as the nature of underdevelopment which characterizes the political systems of the underdeveloped.

The main advocates of Dependency Theory are Andre Gunder Frank, Wallerstein, Dos Santos, Osvaldo Sunkel, Celso Furtado, Rodolfo Stavenhagen, Euzo Falleto and Frantz Fanon. All of them agree that underdevelopment of the Third World countries, (the wretched of the Earth, as Frantz Fanon describes them) is directly related to their neo-colonial existence, i.e., external dependence upon the developed countries.

In the development of the Dependency Theory a pioneering contribution was made by Andre Gunder Frank and Wallerstein. Both of them strongly advocated that the underdevelopment of the Third World (Periphery) was conditioned by the development and expansion of a developed economy upon which the former was dependent. They hold that the development of the periphery was not possible at all within the world capitalist system, which continued to be pro-centre (pro-developed states) to the complete disadvantage of the periphery. The underdeveloped countries have been living as satellites of the metropolis developed countries.

### **Critical Appraisal of Dependency Theory:**

The Dependency Theory offers a very interesting and penetrating analysis of politics in the underdeveloped countries and also of the nature and scope of relations between them and the developed countries. Most of the dependency theorists use the centre-periphery paradigm for this purpose. They describe the condition of the underdeveloped as a situation of dependency which has resulted from the expansion of world capitalism. Most of them believe that within the context of a capitalist world system, there could be no alternative to underdevelopment. Many of them, therefore, favour socialism, either through a socialist revolution, or through other liberal reformist measures/movements, as the remedy against dependency and underdevelopment.

### **Importance of Dependency Theory:**

All these points of criticism of the dependency theory must not make us overlook its importance. It must be praised not only for bringing to light the weaknesses of the theories of development and under-development but also for its emphasis on the analysis of both the historical process and socio-economic politico-cultural factors of development and underdevelopment. It has done well to point out the weaknesses and biases of the continuum model of development, particularly as put forward by the structural functionalists. Undoubtedly, the Dependency Theory has not been fully successful to objectively analyze the nature, scope and reasons of under-development as well as the possible remedies for overcoming or overthrowing the status of dependency. However, at the same time, it must be noted that it has been successful in identifying and describing the symptoms and evil effects of under-development. It provides a set of descriptive characteristics of dependence as well as its causal connections. No one can deny the existence of dependency within the prevailing and ever-increasing interdependence in contemporary international relations. As such no one can or should ignore the ideas put forward by the dependency theorists for mitigating the evil of dependency of the Third World upon the developed world. It rightly focuses attention upon the need to eliminate the evil results (Neo-Colonialism and Hegemony) of the expanding world capitalist system.

### **Limitations of Dependency Theory:**

Even the Marxists, the revolutionary socialists, and the communists reject most of the ideas of the dependency theorists, particularly their conceptualisation of capitalism not as mode of production but as a social system characterised by a particular sort of exchange relationship.

### **Some of the major limitations of dependency theory in international politics are as follows:**

#### **1. Lack of Unity among Dependency Theorists:**

In the first instance, it is held by the critics that there is a lack of consensus among the dependency theorists about the exact nature of dependence and underdevelopment, the mechanism involved in dependency relations and the possible remedies. Dependency Theory is not a theory but only a collection of several ideas.

#### **2. Advocacy of Radicalism and Socialism:**

The dependency theorists do not constitute a coherent group. Some of them are socialistic nationalists (Furtado and Sunkel) others are radicalists (Dos Santos), and still others are revolutionary socialists (A.G. Frank) or socialists (Wallerstein). While some of them advocate a complete transformation, either by a revolution or by other radical reformist means, others favour structural reforms and new forms of cooperation between the centres and peripheries, as the means for ending the state of dependency.

#### **3. No Clear Definition of Dependency:**

The dependency theorists fail to clearly and categorically define and explain dependence and underdevelopment. They offer no acceptable standard for distinguishing between dependent and non-dependent countries.

#### **4. Negative Approach:**

In the words of S.K. Sahu, "The authors of the dependency theory have concerned themselves with attacking the desirability of the capitalist-system in the periphery rather than the 'dependent' status." Dependency theory concentrate more on discussing the defects of World Capitalism and less upon the ways and means for ending dependency under the developed countries.

### **5. Fail to encompass different factors of Under-development:**

When we analyze the nature of underdevelopment of several Third World countries, we find that it differs from country to country and continent to continent. Had dependency been the product only of the expansion of the World Capitalist System, it would have been uniform in nature and scope. The nature of under-development in Latin America has been different from the underdevelopment of Asia and Africa.

### **6. Failure to define the concept of Unequal Exchange:**

The critics argue that the concept of 'unequal exchange' which is being used by the dependency theorists, fails to objectively analyze the reasons behind the underdevelopment of the Third World countries. Further, neither there is nor there can be a universally agreed principle for measuring the nature and scope of 'unequal exchange' that is supposed to be the cause of the dependency of the under-developed upon the developed.

### **7. Limitations of the concept of Surplus Value:**

The dependency theory wrongly depends upon Marxian concept of Surplus Value for defining under- development in terms of capitalistic exploitation. The concept of Surplus Value has its own in-built limitations and, hence, it cannot be accepted as a valid principle.

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**UNIT – IV**  
**ALLOCATION OF RESOURCES**

**4.1. INVESTMENT CRITERIA IN ECONOMIC DEVELOPMENT:**

**4.1.1. Introduction:**

The problem of investment criteria involves the principles underlying the allocation of scarce investment resources in a rational manner so as to maximise the national income in an underdeveloped economy. It is a commonly known fact that private enterprise in such economies is motivated by profit maximisation. In underdeveloped countries the investible resources are very much limited according to their increasing needs. Therefore, the planners have to decide regarding the distribution of resources between industry and agriculture, capital goods and consumer goods industries, public sector and private sector. The flow of investment resources in these different sector is influenced by political, social and economic factors. Allocation of investment resources becomes a difficult task due to the existence of a number of development objectives. These objectives may be conflicting in the short run and hence there are no simple criteria for fixing up the investment priorities. According to Meier and Baldwin, it is difficult to establish a satisfactory criterion for best allocation of investment because alternative investment criterion will affect total output differently, a certain investment criterion may be more relevant for maximizing output over a different time period. Moreover, the allocation of investment will affect not only total output but also the supply and distribution of the labour forces, social and cultural conditions, growth and quality of the population, tastes and technological progress.

**4.2. Meaning of Investment Criterion:**

According to Meier, “Investment criteria refers to the problem of determining the best utilisation of investment resources to minimize capital intensity, to maximize social marginal productivity of capital and employment absorption.”

### 4.3. Types of Investment Criterion:

Economists have propounded a number of investment criteria which are discussed below:

#### 1. Social Marginal Productivity Criteria:

This theory was put forward by Hollis B. Chenery. Social Marginal Productivity of Investment may be defined as the return to the private investor plus the net contribution of the investment to the national product. According to this criterion, the projects must be ranked according to their social value, determine the marginal project from the total funds and exclude all lower-ranking projects.

In order to measure social marginal product (SMP) Chenery used the following method:

Let the welfare function be  $U = f(Y, B, D...)$  ... (1)

Where Y = effect on income,

B, effect on balance of payments,

D = effect on distribution of income, and

U = index of social welfare.

Then increment in U corresponding to a given increment in investment can be written as:

This implies, the increase in SMP is the sum of the effects of a change in

$$\Delta U = \frac{\delta U}{\delta Y} \Delta Y + \frac{\delta U}{\delta B} \Delta B + \frac{\delta U}{\delta D} \Delta D + \dots (2)$$

income, balance of payments portion, distribution of income etc. For simple explanation, all other variables are ignored excepting Y and B to express SMP.

Accordingly:

$$SMP = \Delta U = \Delta Y + r\Delta B \dots (3)$$

Mathematically, "r" represents an amount of increase in national income which would be equivalent to an improvement of one unit in the balance of payments under specified conditions. Therefore, r measures the average over-

valuation of the domestic currency, at the existing rates of exchange. If  $r=0$ , balance of payments is in equilibrium, if  $r$  is positive ( $>0$ ), the domestic currency is overvalued and if  $r$  is negative ( $<0$ ) the domestic currency is undervalued. In underdeveloped countries  $r$  may be appreciably greater than zero because of the relative inelasticity of imports and exports.

This follows:

Where all variables (except  $B_1$  and  $K$ ) are annual flows:

$$SMP = \frac{X+E-M_1}{K} - \frac{L+M_d+O}{K} + \frac{1}{K} (\alpha B_1+B_2) \quad \dots(4)$$

(or)

$$SMP = \frac{V}{K} - \frac{C}{K} + \frac{B_r}{K}$$

SMP = Average annual increment in national income from marginal unit of investment in a given productive use;

$K$  = Increment to Capital (Investment),

$X$  = Increased market value of output,

$E$  = Added value of output due to external economies,

$M_1$  = Cost of imported materials.

$V$  = Social value added domestically, i.e.,  $V = X+E-M_i$

$L$  = Labour cost,

$M_i$  = Cost of domestic materials,

$O$  = Cost of overheads,

$C$  = Total cost of domestic factors =  $L + M_d + O$ .

$B_r$  = Total balance of payments effect =  $\alpha B_1 + B_2$

$\alpha$  = current amortization and interest rate on current borrowings,

$B_1$  = Effect of investment on balance of payments.

$B_2$  = Effect of operation on balance of payments.

Thus, the social marginal product is divided into three elements, viz.:

(a) Value added in the domestic economy for unit of investment;

(b) Total operating costs per unit of investment; and

(c) Balance of payments premium per unit of investment.

Equation (5) can be expressed as

$$SMP = (V/K) (V-C/V) + B_r/K \dots (5)$$



SMP is thus the product of the percentage margin of social value over cost ( $V-C/V$ ) and the rate of capital turnover plus the balance of payments premium. This form of equation shows that a decrease in the rate of capital turnover may be offset by a proportionate increase in the value margin and vice-versa.

**Limitations:**

- (1) It presupposes the attainment of an optimal income distribution by purely fiscal means.
- (2) The concept is vague. It is less definite than the private profit criterion although it is more generally applicable.
- (3) The market prices do not exactly reflect social values and as such, quantitative assessment of the costs and benefits arising out of investment is extremely difficult;
- (4) It is difficult to measure the costs of a larger number of items which contribute to the total cost of a project;
- (5) It is pointed out that the effect of an investment on balance of payments arises not only from the cost incurred in connection with installation and operation of the plant but also on the availability of foreign loans, their expected flow over time and conditions of repayment;
- (6) This criterion does not consider structural interdependence and the nature and value of external economies.

**2. Capital Turnover Criterion or Capital Intensity Criterion:**

J.J. Polak and N.S. Buchanan have propounded this criterion. This criterion is based on capital-output ratio, i.e.,  $K/Y$  of a project. In those countries where capital is scarce, funds should be invested in those projects which have the lowest capital intensity. This criterion is also used in its reverse form and then it is called capital—turnover criterion. According to this criterion, those projects should be selected which have a high rate of capital turnover or low capital output ratio. Since capital is scarce in underdeveloped countries, those projects should be chosen which yield maximum output per unit of capital invested, i.e., where the capital—turnover is the highest. Quick yielding projects with low capital intensity are also desirable because they make it possible for the scarce capital resources to be released soon for

investment in other projects. Such projects also generate more employment which may be very desirable in the context of underdeveloped countries.

**Criticism:**

This present criterion has been criticised on the following grounds:

(1) The difficulty arises in estimating capital -output ratio in poor countries and comparing it with that of advanced countries due to lack of data. Hence, any criterion based on capital output ratio is likely to create practical difficulties.

(2) This criterion does not take into account the element of time. A particular project may be less capital intensive in the short run but may turn out to be more capital intensive in the long run.

(3) The supplementary benefits conferred by a project have not been taken into account while laying down this criterion. It is possible that a project may be more capital intensive but it confers important supplementary benefits on the economy which may outweigh its high capital cost. Thus the projects with low capital-output ratio have also got their importance for a developing economy.

(4) The employment argument in favour of less capital intensive projects does not hold good. A more capital-intensive project can also contribute substantially in providing more employment in the long-run.

(5) Labour intensive projects may generate more employment but they tend to reduce productivity. Hence, capital intensive projects are also quite important for underdeveloped countries if the level of output is to be raised substantially.

(6) The maximization of employment argument implied in this concept may hold good in short run. A capital intensive project may absorb little labour to start with, but may maximize the amount of labour per unit of investment in the long run.

**3. Reinvestment Criteria or Criteria of Investment for Accelerated Growth:**

Walter Galenson and Harvey Leibenstein introduced the concept of marginal per capita reinvestment quotient criterion for investment in the underdeveloped countries. The rate of investment per unit of capital invested is given by  $r = p - ew/ c \dots (1)$

Where  $p$ =output per machine;  $e$ =number of workers for machine;  $w$  = real wage rate;  $c$  = cost per machine and  $r$  = rate of reinvestment per unit of capital. This model explains the employment provided by any combination of men and machines through the following equation:

$$E_{1+t} = E_1 \left( 1 + \frac{p - ew}{c} \right)^t \quad \dots(2)$$

Where  $E$  = Total employment

It is assumed that  $I = P - W$  ... (3),

i.e., the total amount invested in any period is the difference between the total gross value added ( $P = Np$ ) and the real compensation paid to labour ( $Ew$ ) Then:

$$I = P - Ew \quad \dots (4)$$

$$I = NP - Ew \quad \dots (5)$$

$$I = Np - eNw = N(p - ew) \quad \dots (6)$$

Net investment  $I$  = cost per machine ( $c$ ) multiplied  $\Delta N$ , the increase in number of machines, is given by  $(\Delta N/N)$  and is equal to the rate of reinvestment for unit of capital i.e.,  $r = \Delta N/N = P - ew/c$  ... (7)

This criterion is thus designed to take into account the influence of choice of projects on the rate of capital accumulation. If we assume that all profits are reinvested while all wages are consumed, this reinvestment quotient is nothing but the rate of profit. This reinvestment quotient is likely to be higher in capital intensive than in labour intensive projects.

### **Criticism:**

This criterion focuses its attention on the maximization of the current rate of investment so that the economy could grow at a rapid rate in the years to come but it fails to take into account the reality of the situation in the LDC's.

- This criterion would have adverse effect on income distribution and employment. In many countries reduction of income disparities and unemployment are the main objectives of planning so this criterion cannot be adopted in these countries.
- It is against the principle of marginal productivity of capital. As the amount of capital is increased in successive doses and offers a point

where its productivity starts declining and hence there is fall in output per capita.

- It does not consider the effect of balance of payments on investment. In an under developed economy there is an acute scarcity of capital goods which have to be imported and they worsen the already tight balance of payments position.
- It neglects the importance of consumption; rather it advocates its curtailment. But current consumption may be more important than future consumption and the re investible surplus may have to be cut down in the interest of the community. The ignorance of consumer goods sector in favour of capital goods sector brings serious consequences both for economy and the state.
- Adoption of highly capital intensive techniques may create certain practical difficulties in underdeveloped countries. These countries are generally short of capital and due to this it is not possible for them to concentrate on capital intensive project. Shortage of skilled manpower and entrepreneurial ability may create another difficulty.

#### **4.4. SHADOW PRICES:**

##### **4.4.1. Introduction:**

In underdeveloped countries, for project evaluation and programming the distribution of factors on the basis of market prices is imperfect because there exist fundamental disequilibria which are reflected in mass underemployment at existing wage levels in the deficiency of funds at existing interest rates and in the scarcity of foreign exchange at the prevalent exchange rate.

##### **4.4.2. Meaning of Shadow Prices:**

Shadow prices reflect true values for factors and products for the calculation or estimations of prices in social cost-benefit analysis. J. Tinbergen defines them, "Shadow prices are prices indicating the intrinsic or true value of a factor or product in the sense of equilibrium prices. These prices may be different for different time periods as well as geographically separate areas and various occupations (in the case of labour). They may

deviate from market prices.” According to E.J. Mishan, “A shadow or accounting price.... is the price the economist attributes to a good or factor on the argument that it is more appropriate for the purposes of economic calculation than its existing price if any.”

#### **4.4.3. Need and Determination of Shadow Prices:**

In developing countries for project evaluation the distribution of factors on the basis of market prices is imperfect because there exist fundamental disequilibria which are reflected in mass underemployment at existing wage levels, in the deficiency of funds at existing interest rates and in the scarcity of foreign exchange at the prevalent exchange rate. In such a situation, the equilibrium level of wages would be much below the market wage, the equilibrium interest rates would be higher than their market rates, and the equilibrium rate of exchange would be lower than its market rate. In order to overcome these difficulties, J. Tinbergen, H.B. Chenery and K.S. Kretchmer have emphasized the use of shadow or accounting prices for the following reasons:

##### **1. Imperfect Market Mechanism:**

The price mechanism operates imperfectly in developing countries. Market prices do not correctly reflect relative scarcities, benefits, and costs. This is because perfect competition is entirely absent. Structural changes do not respond to price changes. Institutional factors distort the existence of equilibrium in the product, labour, capital and foreign exchange markets. Thus prices fail to reflect and transmit the direct and indirect influences on the supply side and the demand side. All such difficulties are overcome with the help of shadow prices. Fiscal, monetary and other policies also help in bringing the market prices of products labour, capital and foreign exchange in conformity with their shadow prices and thus make investment projects a success.

##### **2. Wage Rates:**

In developing countries, there exist fundamental disequilibria in the labour market which are reflected in mass underemployment and unemployment at existing wage rates. In such economies, wages are much lower in the non-organised agricultural sector. There is also surplus labour

in rural areas whose marginal product is zero or negligible. But it cannot be assumed to be zero in calculating the cost of such labour on construction works. On the other hand, wages are much higher than the opportunity cost of labour in the industrial sector where labour is organised in strong trade unions. Therefore, unadjusted market wages of labour cannot be used for calculating the cost of such labour on investment projects. In such a situation, the equilibrium level of wages would be much below the market wage in the rural sector. Economists suggest that the shadow price of such labour can be fixed anywhere above the zero marginal product of labour, and with the increase in the marginal product of labour, its shadow price can also be raised to the market level of wages.

### **3. Capital Costs:**

In developing countries, funds for investment are deficient at prevailing interest rates. The main cause is the deficiency of savings. The majority of people are poor having low income levels, low rate of savings and hence low propensity to invest. Moreover, there is little relationship between the supply of capital and interest rates prevalent in the country.

There is also wide disparity between the prevailing interest rates in different regions and areas. In the capital market, the market rate of interest is much higher than the bank rate. Therefore, the equilibrium interest rate would be much higher than its market rate. If unadjusted market price of capital is used in calculating the cost of capital on investment projects, it would underestimate the real cost of such projects.

To overcome this problem, the shadow rate of interest can be estimated on the basis of interest rates paid by private investors. But while so doing, it is essential to allow for a social rate of discount for calculating the social benefits and costs of an investment project where its net present value (NPV) is calculated as

$$NPV = \sum_t B_t - C_t / (1+i)^t$$

Where  $B_t$  is the expected gross benefit of the project at time  $t$ ,  $C_t$  is expected gross cost of the project at time  $t$ , and  $i$  is the social discount rate at time  $t$ . The social discount rate is the government's borrowing rate on long-term securities. So it differs from the market rate of interest. If the social discount

rate is higher, short- period projects with higher net benefits are preferred, and if it is low, long-period projects with lower benefits are chosen.

#### **4. Exchange Rate:**

There is acute scarcity of foreign exchange leads to balance of payments difficulties in developing countries. As a result, the current rate of foreign exchange is much lower than in the black market and the equilibrium exchange rate is lower than its market exchange rate. To solve this problem, an artificial equilibrium is achieved in the balance of payments by fixing a higher shadow exchange rate than the official exchange rate. For this, weight is attached to the cost of foreign exchanges in the project.

Suppose the shadow price of foreign exchange is 50% higher than its market value, the net effect of a project on the balance of payments should be given a weight of 0.5. This is equivalent to valuing foreign exchange costs and earnings at a price of 1.5. Tinbergen suggests the calculation of the shadow foreign exchange rate based on the 'black' and 'free' rates of exchange.

If the free (official) exchange rate is Rs.50 a dollar and the black rate is Rs.75 a dollar and the conversion of the official rate is four times as great as that at the black rate, then the shadow exchange rate would be the weighted average,  $4 \times 50 + 1 \times 75/5 = \text{Rs.}55$ . Thus Rs.55 per dollar would be the shadow rate instead of the official rate of Rs.50.

#### **5. Inflationary Pressures:**

Developing countries suffer from inflationary pressures because the market mechanism operates imperfectly due to a number of socio-economic and administrative obstacles. Even otherwise, rise in prices are inevitable in the development process. So actual market prices do not reflect social benefits and costs. Some prices are fixed by the government. Others are free, but are influenced by restrictive trade practices or monopolies. Still others are influenced by quantitative controls. When prices rise, there is overvaluation of domestic currency. The prices of imported goods for projects underestimate their real cost. Thus there is need for shadow prices in the case of investment projects in different sectors of the economy.

### **Limitations of Shadow Prices:**

The following are the limitations in the determination of shadow prices:

1. The calculation of shadow prices pre-supposes the availability of data. But adequate data are not easily available in less developed countries.
2. In order to establish the intrinsic value of a factor or product requires the existence of full equilibrium in all markets. In an underdeveloped economy which is characterized by a number of fundamental disequilibria, the knowledge of full equilibrium conditions for the entire economy is not possible. Thus the notion of shadow prices corresponding to intrinsic values is arbitrary.
3. The assumption of full employment equilibrium in the whole economy makes the concept of shadow prices indeterminate. It requires a complete knowledge of demand and supply functions which are based on the existing socio-economic institutions in the economy. Thus shadow prices are difficult to ascertain under the existing institutional framework of underdeveloped countries.
4. Another problem arises with regard to the time dimension. The concept of shadow prices is static and timeless, because shadow prices are used to overcome the difficulties involved in project evaluation when factor prices change over time. All inputs and outputs are valued at fixed shadow prices in such cases. This is not realistic because investment projects relate to long periods. Hence the concept of shadow prices remains a static one.
5. Another practical difficulty relates to the use of shadow prices in the economy where the private enterprises buy inputs and sell outputs at market prices. The government, on the other hand, uses shadow prices for the evaluation of its projects but buys all inputs at market prices and sells outputs at competitive market prices where it does not possess a monopoly.
6. The determination of shadow prices is difficult in the case of projects with high capital-intensity and which are substitutes and complementary to each other. Suppose there are two projects in which the input of one is the output of the other and vice-versa.

### **Uses of Shadow Prices:**

Despite the above limitations, the shadow prices possess the following uses:



### **1. Project Evaluation:**

Shadow prices are a convenient tool for evaluating investment projects in different sectors of the economy. They are used for evaluating the effects of a project on the national income which are also known as external effects. This is done on the basis of costs-benefit analysis where both costs and benefits are calculated at shadow prices.

### **2. Public Policy:**

The success for development planning depends upon the correct operation of public policy. Shadow prices are intrinsic prices on whose correct determination depends the success of a plan to a considerable extent. In developing countries, investment projects in the public sector cannot be profitable unless the prices of labour, capital and other inputs and foreign exchange rates are determined in shadow prices. Though very often shadow prices are rough estimates, yet the state should try to bring market prices close to the shadow prices of products and factors through monetary, fiscal and other measures for the success of the plans.

### **3. Programming:**

Shadow prices have much importance in programming. In the context of developing countries, programming means the optimum use of investment whereby there is no difficulty in the production process. But, in reality, the difficulties of supplies of factors, rise in market prices and the scarcity of foreign exchange are found in such economies. All such problems are overcome with the help of shadow prices. The use of fiscal, monetary and other policies by the state help in bringing the market prices of products, factors and foreign exchange in conformity with their shadow prices and thus make investment programming a success. Thus shadow prices are a useful and important device for the success of project evaluation, public policy and investment programming.

### **4.5. PROJECT EVALUATION AND COST BENEFIT ANALYSIS:**

Project evaluation is the most specialized planning process which involves systematic, objectives and comprehensive appraisal of development programmes for individual commodities and projects. It implies an appraisal or assessment of a project as to its operational efficiency technically,

economically, financially and managerially. Project evaluation is an integral part of any development programme in order to assess its success or failure and to point out further lines of improvement.

#### **4.5.1. Methods of evaluation:**

In the methods of project evaluation, the usual stages are:

- The description of the technical and economic characteristics of each project.
- The estimation of the influence of the project on the economy both during the construction period as well as during the operational period when the investment is completed and the newly productive capacity is in operation.
- The evaluation of the consequences of the project which may be direct or indirect.
- The formulation of the criterion for the selection of the projects.

#### **4.5.2. Cost Benefit Analysis:**

In appraising projects from the national viewpoint the most appropriate and popular method is the cost benefit analysis. The analysis is the most scientific and useful criterion for project evaluation. It helps the planning authority in making correct investment decisions to achieve optimum resource allocation by maximising the difference between the present value of benefits and costs of a project.

#### **Criteria for Cost Benefit Analysis:**

There are four benefit cost criteria discussed by the benefits and costs. They are: (i)  $B-C$

(ii)  $B-C/I$

(iii)  $\Delta B/\Delta C$

(iv)  $B/C$

Where  $B$ —Benefits,  $C$ —Costs,  $I$ —Direct Investment,  $\Delta$ —Increment

The formula  $B-C/I$  is “for determining the total annual returns on a particular investment to the economy as a whole irrespective of to whom these accrue”. If the private investment happens to be very large, then even high value of  $B-C/I$  may be less beneficial to the economy. Thus, this criterion is not much useful to achieve satisfactory results. The criterion of  $\Delta B/\Delta C$  is

meant to determine the size of project. The adoption of the B—C criterion favours a large project and makes small and medium size projects less beneficial. Thus, this criterion helps in determining the scale of project on the basis of the maximisation of the difference between B and C. The best and most effective criterion for project evaluation is B/C. In this criterion, the evaluation of project is done on the basis of benefit-cost ratio. If  $B/C=1$ , then the project is marginal because the benefits occurring from the project just cover the costs. If  $B/C < 1$ , then benefits are less than costs—so the project is rejected. If  $B/C > 1$ , the benefits are more than costs and the project is profitable and hence, it is selected. The higher the benefit cost ratio, more profitable will be the project. The criterion discussed above does not account for the time factor. In fact, the future benefits and costs cannot be treated at par with present benefit and cost. Therefore, project evaluation requires discounting of future benefits and costs because society prefers present to the future. For this purpose, the economists have derived a number of decision rules or criteria. They are discussed below:

### **1. The Net Present Value (NPV) Criterion:**

This is an important criterion for project evaluation.  $NPV = \text{Present value of benefit} - \text{Present value of operating and maintaining costs} - \text{Initial outlay}$ . It is also expressed as the net present value of benefits criterion so that,  $NPV \text{ of benefit} = \text{Gross present value of benefits} - \text{Gross present value of costs}$ . If  $NPV > 0$  then the project is socially profitable. If there are number of mutually exclusive projects, then the project with the highest net present value of benefits will be chosen. The NPV criterion is not accurate method for project evaluation as it neglects the time horizon. Capital investments give benefits after a lapse of some time. Therefore, future benefits and costs cannot be equated with present benefits and costs. So it becomes essential to discount future benefits and costs because society prefers present to future. The discount factor is expressed as:

$$D = \frac{1}{(1+i)^t}$$

where  $i$ —social discount rate.

$t$ —time period.

Thus

$$NPV = \left[ \frac{B_1}{(1+i)^1} + \frac{B_2}{(1+i)^2} + \frac{B_n}{(1+i)^n} \right] - \left[ \frac{C_1}{(1+i)^1} + \frac{C_2}{(1+i)^2} + \frac{C_n}{(1+i)^n} \right]$$

$B_1, B_2 \rightarrow B_n$  series of gross present benefits in years 1, 2..... $n$

$C_1, C_2 \rightarrow C_n$  series of gross present cost in years 1, 2..... $n$

$i \rightarrow$  social rate of discount.

Only those projects should be selected in which present value of benefits exceeds the present value of costs i.e.

$$\frac{B_1}{(1+i)^1} + \frac{B_2}{(1+i)^2} + \dots + \frac{B_n}{(1+i)^n} > \frac{C_1}{(1+i)^1} + \frac{C_2}{(1+i)^2} + \dots + \frac{C_n}{(1+i)^n}$$

The ratio of present value of benefit to present value of cost should be greater than 1 for the selection of a project i.e.

$$\frac{\frac{B_1}{(1+i)^1} + \frac{B_2}{(1+i)^2} + \frac{B_n}{(1+i)^n}}{\frac{C_1}{(1+i)^1} + \frac{C_2}{(1+i)^2} + \frac{C_n}{(1+i)^n}} > 1$$

## 2. The Internal Rate of Return Criterion:

The criterion refers to the percentage rate of return implicit in the flows of benefits and costs of projects. Margin defines the internal rate of return (IRR) as the discount rate at which present value of return minus cost is zero. The mathematical formula for the computation IRR is (IRR)

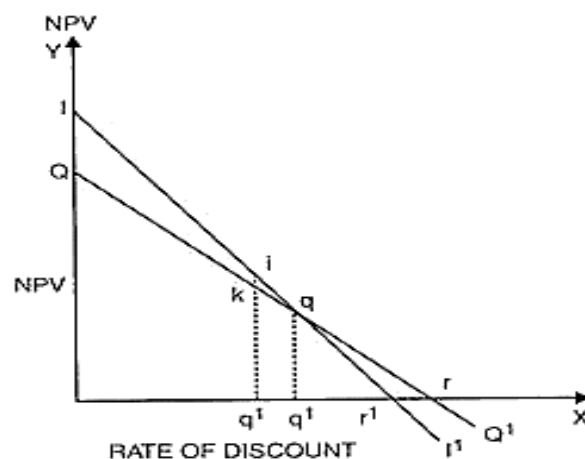
$$B_1 - \frac{C_1}{(1+r)^1} + B_2 - \frac{C_2}{(1+r)^2} + B_n - \frac{C_n}{(1+r)^n} = 0$$

In case of mutually exclusive projects, the project to be selected must have highest rate of return. But this criterion has certain limitations which are given below:

1. It is not possible to change the rate of return assumed for the calculation of profitability of project.
2. It is difficult to calculate rate of return on long gestation project which does not yield benefit for many years.
3. This criterion is not applicable to highly capital intensive projects.

4. It is difficult to calculate IRR in which the entire investment outlay cannot be made in first period.
5. The use of IRR for public investment does not lead to correct decisions because it is not possible to discount intermediate benefits and costs of public investment at internal rate of return.
6. It is difficult to make choice between two alternative investments on the basis of their alternative internal rates of return.
7. Layard points out the problem of capital rationing where projects cannot be selected on the basis of ranking in order of the rate of return. Such projects can only be selected on the basis of their net present value.

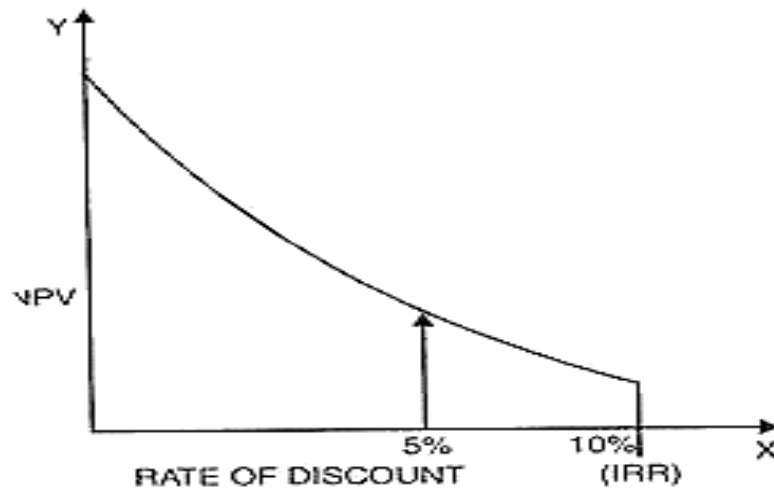
In fact, IRR depends upon social rate of discount. The choice of project depends upon discount rate if net present values of the projects are given. This can be explained with the help of a diagram 4.1.



**Fig. 4.1 Internal Rate of Return criterion**

The rate of discount is measured along X-axis and NPV on Y-axis. The curve  $II^1$  depicts investment of project I and  $QQ^1$  of project Q. The IRR of project Q is higher than of project I because discount rate or is greater than  $Or_1$ . At  $Oq^2$ , the IRR of both projects are equal. But if discount rate falls below  $Oq^2$ , project I will be chosen because it's NPV is higher by  $ik$ . The choice on the basis of changes in discount rate is called Switching and Re-switching.

### Relation between NPV and IRR:

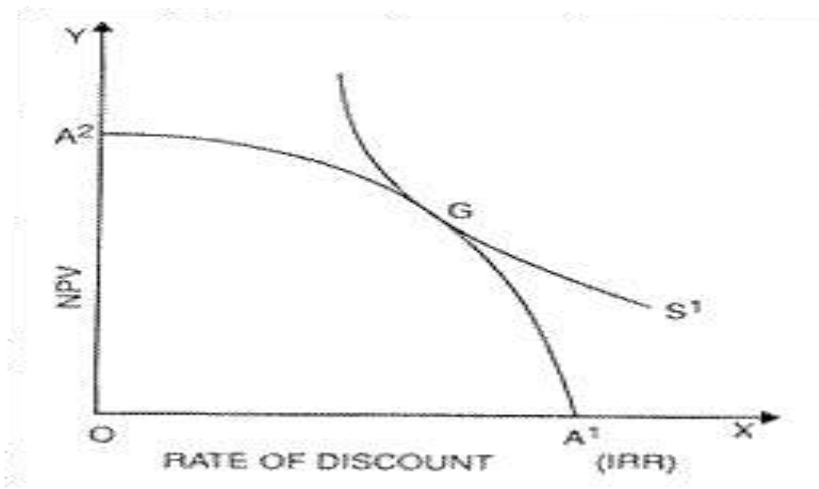


**Fig.4.2. NPV and IRR**

The NPV at the social discount rate and the internal rate of return are two criteria which are frequently used for choosing projects. The relation between NPV and IRR is illustrated with the help of a diagram 4.2. As NPV falls, the discount rate increases and a situation arises when NPV becomes negative. The rate at which NPV changes from positive to negative is IRR. For the selection of project, the IRR must be higher than its discount rate i.e.  $r > i$ . In the above figure, IRR is taken as 10 per cent be selected for development as long as  $NPV > 0$  and  $r$  (10 per cent)  $> i$  (5 per cent). For complex projects, these two criteria can give different results but mostly they are interchangeable. NPV criterion is commonly used for project evaluation in private and public sectors. But the NPV criterion is technically superior, since IRR can give an incorrect result in special circumstances.

**3. Social Rate of Discount (SRD):** Since society prefers present to future, so future generations are likely to have higher levels of income. If the principle of diminishing marginal utility operates, then the utility gains to future generations from a given amount of benefits will be less than the utility gains to the present generations so the future gains must be discounted. The rate at which future benefits must be discounted to make them comparable with present benefit is called 'Social Rate of Discount'. In other words, it is the rate of premium which the society puts for preferring the present consumption to future consumption. This is illustrated with the help of a diagram 4.3.given.

The present consumption  $A_1$  is taken along horizontal axis and future consumptions  $A_2$  taken along vertical axis.  $A_1A_2$  is the transformation frontier or investment possibility curve. It consists of a series of projects arranged from right to left in order of their rate of return, the cost of sacrifice of present consumption and the return is the gain of consumption in future. The society will choose from the various investment possibilities so as to reach its highest social indifference curve  $SI$ , The society reaches an optimal position when transformation curve  $A_1A_2$  equals its social indifference curve  $SI$  at point  $G$ . The slope of the transformation curves represents the rate of return on investment and the social indifference curve represents the rate of time preference. Thus, social discount rate is determined by the equality of the rate of return on investment and rate of time preference at point  $G$ . The social discount rate is constant over time. "A discount rate of 5 per cent might well lead to twice as much investment as one of the 10 per cent together with equivalent reduction in consumption." If the discount rate is high, short period projects with higher net benefits are preferred. On the contrary, when the discount rate is low, long period projects with lower net benefits are selected. Since the benefits and costs are to occur in future, they are discounted in order to find their present net worth so there is a problem of choosing suitable rate at which future benefits are discounted.



**Fig. 4. 3. Social Rate of Discount**

### **Uses of Cost Benefits Analysis:**

The uses of cost benefit analysis can be made on the following ground:

#### **(a) Evaluation on the Basis of Benefit:**

Benefits refer to the addition to the flow of national output resulting from investment in particular project. Those projects are said to be profitable whose contribution to national output is greater than those with a smaller contribution. Benefits may be real or nominal and direct or indirect.

##### **(i) Real Benefits:**

In cost benefit analysis, we are concerned with real benefits rather than nominal benefits flowing from a project. A river valley project may increase irrigational facilities to the cultivators but if at the same time, the state levies heavy betterment levy on them, the benefit is nominal. But if the same project besides increasing irrigational facilities raises productivity of land per acre and leads to a number of other external economies whereby real income of the farmer rises, then, it is said to lead to real benefits.

##### **(ii) Direct and Indirect Benefits:**

Direct benefits are those which can be obtained immediately and directly from the project and indirect benefits are those which are more or less identical to direct benefits. The direct benefits flowing from multipurpose project are flood control, irrigation, navigation, development of fisheries etc. But there may be also certain side effects of the project which may be categorised as indirect benefits. For example, the construction of the Bhakra Nangal Project in Punjab has provided employment opportunities to thousands of people. It led to the construction of new railway line connecting Nangal Township and the Bhakra Nangal Dam with the rest of the country.

##### **(iii) Tangible and Intangible Benefits:**

Benefits flowing from a project may be tangible or intangible. Tangible benefits are those which can be computed and measured in terms of money while intangible benefits cannot be measured in monetary terms. For example, benefits flowing from the Bhakra Nangal Project are tangible and can be computed. Intangible benefits enter into individual valuations, for which there is neither a market nor a price. They may be positive or negative.

#### **(b) Evaluation on the Basis of Costs:**



The calculation of cost of a project is very difficult because various types of costs are considered in its construction. Costs mean the value of resources used in the construction of a project.

**(i) Real and Nominal Costs:**

Costs may be real or nominal as they involve real sacrifice on the part of people or otherwise not. If money is borrowed from the people, it is a case of nominal cost. But if people are required to construct project themselves, they will be incurring real sacrifice and then it will be case of real cost.

**(ii) Primary and Secondary Costs:**

Primary or direct costs are those which are directly incurred on the construction of a project but the secondary costs include the cost providing benefits to the people working on project such as cost of constructing houses, schools, hospitals etc. at the sight of project.

**(iii) Associated Costs:**

They are the value of goods and services needed beyond these included in the cost of a project to make immediate products or services of the project available for use or sale. For example, the farmer's cost of producing irrigated crops other than any charge for water would be his associated costs of producing crops.

**(iv) Project Costs:**

These are the value of resources used in constructing maintaining and operating the project. This includes cost of labour, capital, equipment, intermediate goods, natural resources and foreign exchange etc.

**Limitations of Cost Benefit Analysis:**

Cost benefit analysis is a powerful technique regarding the selection and rejection of project even then it is not free from drawbacks.

Some of its limitations are as under:

**1. Difficulties in Benefit Assessment:**

The correct estimation of benefits from a project also becomes difficult due to uncertainty regarding the future demand and supply of the products from a new project and their prices. Another difficulty arises from the existence of external economies. The presence of external economies may lead to the selling of the product of project at price equal to marginal cost and not

equal to average cost which will create a deficit and efforts are made by a special levy on consumers or through budgetary resources.

## **2. Arbitrary Discount Rate:**

The social rate of discount assumed for any project is arbitrary. There is no perfect method to find social discount rate. It remains a subjective phenomenon. But if there is a small change in social discount rate it may change the full results of project evaluation. The arbitrarily large discount rate does not help in calculating the net present value of benefits of long term projects.

## **3. Ignores Opportunity Cost:**

It also ignores the problem of opportunity cost. Griffin and Enos state that if all prices reflect opportunity costs, all projects for which B/CI would be chosen.

## **4. Problem of Externalities:**

The side effects of a project are difficult to calculate in this analysis. There may be technological and pecuniary externalities of a river valley project, such as the effects of flood control measures or a storage dam on the productivity of land at other places in the vicinity.

## **5. Difficulties in the Cost Assessment:**

Cost estimates are made on the basis of the choice of techniques, locations and prices of factor services used. Market prices of factors of production are used for this purpose provided they reflect opportunity cost. But in underdeveloped countries, market prices usually do not reflect the opportunity costs, because there is fundamental disequilibria which is reflected in the existence of massive under-employment at the prevailing level of wages, the deficiency of funds at prevailing interest rates and the shortage of exchange at current rates of exchange.

## **6. Neglects Joint Benefits and Costs:**

It ignores the problems of joint benefits and costs arising from a project. There are number of direct and indirect benefits flowing from river valley project but is difficult to evaluate and calculate such benefits separately. Similarly, the joint costs that cannot be separated are calculated benefit-wise.

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**UNIT – V**  
**PLANNING AND DEVELOPMENT**

**5.1. MEANING OF PLANNING:**

Economic planning is a resource allocation mechanism based on a computational procedure for solving a constrained maximization problem with an iterative process for obtaining its solution. Planning is a mechanism for the allocation of resources between and within organizations contrasted with the market mechanism.

**5.2. OBJECTIVES OF PLANNING:**

**1. Economic Development:**

The main objective of Indian planning is to achieve the goal of economic development economic development is necessary for under developed countries because they can solve the problems of general poverty, unemployment and backwardness through it. Economic development is concerned with the increase in per capita income and causes behind this increase. In order to calculate the economic development of a country, we should take into consideration not only increase in its total production capacity and consumption but also increase in its population. Economic development refers to the raising of the people from inhuman elements like poverty unemployment and ill health etc.

**2. Increase Employment:**

Another objective of the plans is better utilization of man power resource and increasing employment opportunities. Measures have been taken to provide employment to millions of people during plans. It is estimated that by the end of Tenth Plan (2007) 39 crore people will be employed.

**3. Self-Sufficient:**

It has been the objective of the plans that the country becomes self-sufficient regarding food grains and industrial raw material like iron and steel etc. Also, growth is to be self-sustained for which rates of saving and investment are to be raised. With the completion of Third Plan, Indian economy has reached the take off stage of development.

#### **4. Economic Stability:**

Stability is as important as growth. It implies absence of frequent and excessive occurrence of inflation and deflation. If the price level rises very high or falls very low, many types of structural imbalances are created in the economy. Economic stability has been one of the objectives of every Five year plan in India. Some rise in prices is inevitable as a result of economic development, but it should not be out of proportions.

#### **5. Social Welfare and Services:**

The objective of the five year plans has been to promote labour welfare, economic development of backward classes and social welfare of the poor people. Development of social services like education, health, technical education, scientific advancement etc. has also been the objective of the Plans.

#### **6. Regional Development:**

Different regions of India are not economically equally developed. Punjab, Haryana, Gujarat, Maharashtra, Tamil Nadu, Andhra Pradesh etc. are relatively more developed. But U.P., Bihar, Orissa, Nagaland, Meghalaya and H.P. are economically backward. Rapid economic development of backward regions is one of the priorities of five year plans to achieve regional equality.

#### **7. Comprehensive Development:**

All round development of the economy is another objective of the five year plans. Development of all economic activities viz. agriculture, industry, transport, power etc. is sought to be simultaneously achieved. First Plan laid emphasis on the development of agriculture. Second plan gave priority to the development of heavy industries. In the Eighth Plan maximum stress was on the development of human resources.

#### **8. To Reduce Economic Inequalities:**

Every Plan has aimed at reducing economic inequalities. Economic inequalities are indicative of exploitation and injustice in the country. It results in making the rich richer and the poor poorer. Several measures have been taken in the plans to achieve the objectives of economic equality

especially by way of progressive taxation and reservation of jobs for the economically backward classes.

### **5.3. NEED FOR PLANNING:**

One of the principal objectives of planning in underdeveloped countries is to increase the rate of economic development. They are as follows:

#### **(1) Weak, Private Sector:**

In an underdeveloped country, private enterprise is weak and may fail to take the necessary risks of pioneering those industries which are necessary for rapid economic development of the country. Therefore, the State must come to the forefront action. The underdeveloped countries have remained almost stationary. This task of their development is a big task. These countries need a big push. It is only possible through a comprehensive planning. Thus the Government should follow comprehensive planning for the development of underdeveloped countries.

#### **(2) Inequalities of Income:**

Inequalities of income and wealth exist in underdeveloped economies. Private enterprise system does not secure an equal distribution of the benefits of economic development among different classes of the community. The developing social conscience of the people cannot tolerate the existence of such grave inequalities. This would secure a better distribution of national income among all classes of people in the country.

#### **(3) Problem of Unemployment:**

Another reason why the underdeveloped countries need a plan is that the working of pricing system has failed to solve the problem of mass unemployment. The mass unemployment which existed during 1930's was horrible. No country wanted to experience such as mass unemployment again. There is also the acute problem of disguised unemployment in underdeveloped countries. The mass unemployment, particularly disguised unemployment, which exists in underdeveloped countries cannot be dealt with unless a comprehensive economic plan for development is formulated.

#### **(4) Change in Attitude:**

All underdeveloped countries have become development-minded. Now they want to pack the development of centuries into a few years. They like to

raise the standard of living of their people. Therefore, these countries require quick economic development.

**(5) Need of More Capital:**

Higher rate of growth of development requires huge capital investment. It involves a considerable degree of central planning and control. Among the underdeveloped countries, higher rates of growth have been registered in those countries where there is a planned development. In the last 15-20 years, the rate of growth of income in poor countries has been on the whole, higher than it was before they adopted planned development.

**(6) Foreign Aid:**

In modern economic activities the progress of one nation is related directly or indirectly to the progress of other nations. Thus, the detailed plan, mentioning specific output projects and investment projects, is very useful in creating favourable atmosphere for bilateral and multi-lateral agreements of foreign aid. Thus, carefully designed plan outlay is essential for increasing foreign trade and thereby improving development prospects.

**(7) Structural Changes:**

In an un-developed or under- developed country, the main economic sector is predominantly agriculture. The secondary and tertiary sector are substantially less developed. This results into structural dis-equilibrium. Thus, for increasing the overall productivity, it is very essential that optimum labour force be diverted and employed on secondary and tertiary sectors of the economy. This is possible only by proper planning in different sectors of the economy.

**(8) Economies of Scale:**

The structured changes encourages and facilitate the setting up of new industrial units, which invariably created external economies. But these newly create economies are not usually taken into account by the private entrepreneurs under the market system. In case of external economies, role of public sector along with planning is essential. Thus, the overall gains are maximized by making proper plan adjustments. Thus a specified investment can be best utilized taking a macro-economic view to have appropriate social

as well as private gains. This strongly favours a planned development especially in case of less developed countries.

**(9) Future Requirements:**

In an attempt to maximize the current profit, the producers exploit the natural resources without considering the future requirement. Therefore, it is evident that if exhaustible natural resources are not properly utilized, less will be available for future generations. To conserve the natural resources carefully it is important to make and execute proper plans.

**5.4. PLAN FORMULATION AND REQUISITES FOR SUCCESSFUL PLANNING:**

There are certain necessary pre-requisites for its success as under-mentioned:

**1. Central-Planning Authority:**

The most significant conditions for the success of planning is the setting of central planning authority. For instance, in India, there is Planning Commission and in Russia, there is Gosplan. This body carries a group of experts, economists, statisticians, and engineers etc. who deal with the different aspects of the economy. They suggest measures for the proper implementation of the plan.

**2. Reliable Statistical Data:**

A pre-requisite for the sound and successful planning is the availability of reliable, adequate and accurate statistical data relating to various fields of the economy. For obtaining necessary statistical information, a survey of the existing and potential resources has to be undertaken like raw-material, capital, human and natural resources of the country.

**3. Specific Objective:**

Another imperative condition for the success of economic planning is the specific objective. The prescribed objectives should be definite and laid down in an order of priority keeping in view the urgency of economy's problems. Moreover, objectives should not be too many in number but should be realistic, mutually compatible, flexible and feasible within means.

#### **4. Fixation of Targets and Priorities:**

It is equally necessary to fix the targets and priorities and further capability of their achievement. In other words, those schemes or projects which are required to be executed first, should be given top priority and less significant projects should have low priority. The programmes of priorities should not be much rigid: rather it may be changed according to the requirements of the economy. These targets should be mutually consistent for attaining a particular growth rate for the economy.

#### **5. Suitable Economic Organisation:**

For the success of planning there must be suitable economic organisation which promotes but do not hinder the progress of the country. In other words, socialistic economic organisation in which means of production are socialized is a basic condition for the realistic planning in a country. But on the contrary, the experience of capitalistic countries show that private enterprise never promotes planning.

#### **6. Strong and Stable Government:**

The success of economic planning also depends on the strong and stable government with a high degree of authority. Planning process is in danger in many underdeveloped countries due to frequent change in their governments. In this matter, India is fortunate enough as it enjoyed considerate political stability during the period of its planning process.

#### **7. Fair and Efficient Administration:**

The administrative machinery with a high degree of honesty and efficiency plays very pioneer role in the formulation and implementation of plans. Our country has a bitter experience in this regard. Even the best plans fail due to corrupt, inefficient, inactive and lethargic administration. In most of the poor and backward countries there is a great paucity of trained and competent administration and technical personnel which is chief constraint in the development of the country. Prof. W.A. Lewis considers a strong competent and incorrupt administration as the first condition for the success of the plan.



## **8. Mobilization of Resources:**

The success of planning, in fact, is based on the proper mobilization of financial resources of the country. In an underdeveloped country, resources are inadequate and irregular, ineffectively developed and mobilized to the required extent.

### **5.5. PLANNING UNDER CAPITALISM AND SOCIALISM:**

Planning under capitalism is not based on any central plan. In the absence of a central plan, the means of production are owned privately. Production is also carried out by private enterprise. It is not planned by government. Market prices are determined by market forces and are not set by the government. In socialistic planning, the economy depends on economic planning. The central authority formulates a plan for the entire economy. Capitalistic planning is focused on the unplanned economic order which gains momentum from some invisible forces in the market. The main feature of this type of planning is the absence of a central economic plan.

### **5.6. Perspective Planning and annual planning:**

Perspective planning is a long run planning where targets are fixed for long period say 15 to 25 years. But a perspective plan cannot mean one plan for the complete period. In a true sense, broader objectives are to be achieved in a fixed period by dividing the perspective plan into short-run plans of 4 to 6 years. The long-run objectives are so divided into short-run that one by one all the objectives are achieved in the long-run. In other words, short run plans pave way for the achievement of long run motives. For instance in India, under five years plans, the objectives of employment and national income have been determined on the basis of short and long-run.

According to J.Tinbergen, "The main purpose of a perspective plan is to provide a background to the shorter terms plans, so that the problems that have to be solved over a very long period can be taken into account in planning over short-terms". The perspective plan has so many administrative difficulties due to which the fulfilment of the objectives becomes difficult.

### **Annual Planning or Prospective Planning:**

Annual Planning or short term planning refers to 4 to 6 years plans which are further divided into annual plans so that each annual plan may fit in short-run plan and each short-run plan may ultimately fit in the long-run<sup>^</sup> plan. Plans are further divided into regional and sectional plans. Regional plans are linked with regions, district and localities which are further divided into sectional plans for agriculture, industry, transport, foreign trade etc. The sectional plans are again divided for different branches like iron and steel, food-grains, exports etc.

### **5.7. MIXED ECONOMY**

As the name suggests a mixed economy is the golden combination of a command economy and a market economy. So it follows both price mechanism and central economic planning and oversight. The means of production are held by both private companies and public or State ownership. And while market forces decide the price, demand, supply, etc there is some government oversight to prevent monopolization and discrimination. The idea behind a Mixed Economy is to tackle the demerits of both a capitalist economy and a socialist economy and come up with a unique system. It appreciates the concept and the freedom of private ownership of properties and resources. But at the same time, it understands the disadvantage of unchecked capitalism. Hence it proposes government oversight and economic planning so there is no discrimination against the poorest citizens.

#### **5.7.1. Features of Mixed Economy:**

- **Coexistence of All Sectors:** In a mixed economy all three sectors coexist in harmony, i.e. private sector, public sector, and joint sector. The joint sector is jointly run by the government and private companies, with at least 51% ownership belonging to the state.
- **Cooperative Sector:** In a mixed economy another sector exists, the cooperative sector. The main aim of the formation of this sector is so that the government can provide financial assistance to cooperative societies involved in warehousing, agricultural, dairy industry, etc.

- **Freedom and Control:** Here all individuals have the freedom to produce goods and products, hold property, choose their occupation and choose or demand products/services they want. But to keep a check on monopolistic practices and discrimination of the lower sectors of society the state maintains some control.
- **Economic Planning:** In a mixed economy we have a central planning authority. All sectors of the economy follow the economic plan of the state to achieve various targets and goals. The plan is not rigid but more of a general guideline for economic growth and prosperity of the nation.
- **Social Welfare:** One of the main aims of a mixed economy is social welfare. It aims to reduce the wealth gap in the country and fight the inequalities of our society. The aim is to reduce poverty and unemployment. And at the same time also improve social security, public health care, public education system, etc.

#### **5.7.2. Merits of a Mixed Economy**

- Freedom the citizens enjoy. Especially the economic freedom to ownership of property and choice of goods and services.
- Ownership and existence of private producers also increase capital formation in the country. There is an incentive to do better and innovate as well.
- Price mechanism prevails. So the allocation of resources is more scientific and beneficial to the economy.
- Also enjoys the advantages of central economic planning. This will help the economy grow rapidly and in the correct direction.
- There is healthy competition in the market. There is no cut-throat competition and adverse tactics due to government oversight. Also, there is no absolute lack of competition which is disadvantageous.

### **5.7.3. Demerits of a Mixed Economy**

The main demerits of mixed economy are as follows:

#### **(i) Un-stability:**

Some economists claim that mixed economy is most unstable in nature. The public sector gets maximum benefits whereas private sector remains controlled.

#### **(ii) Ineffectiveness of Sectors:**

Under this system, both the sectors are ineffective in nature. The private sector does not get full freedom, hence it becomes ineffective. This leads to ineffectiveness among the public sector. In true sense, both sectors are not only competitive but also complementary in nature.

#### **(iii) Inefficient Planning:**

There are no such comprehensive planning in mixed economy. As a result, a large sector of the economy remains outside the control of the government.

#### **(iv) The Lack of Efficiency:**

In this system, both sectors suffer due to lack of efficiency. In public sector it is so because government employees do not perform their duty with responsibility, while in private sector, efficiency goes down because government imposes too many restrictions in the form of control, permits and licenses, etc.

#### **(v) Delay in Economic Decisions:**

In a mixed economy, there is always delay in making certain decisions, especially in case of public sector. This type of delay always leads to a great hindrance in the path of smooth functioning of the economy.

**(vi) More Wastages:**

Another problem of the mixed economic system is the wastages of resources. A part of funds allocated to different projects in public sector goes into the pocket of intermediaries. Thus, resources are misused.

**(vii) Corruption and Black Marketing:**

There is always corruption and black marketing in this system. Political parties and self- interested people take undue advantages from public sector. Hence, this leads to emergence of several evils like black money, bribe, tax evasion and other illegal activities. All these ultimately bring red-tapism within the system.

**(viii) Threat of Nationalism:**

Under mixed economy, there is a constant fear of nationalism of private sector. For this reason private sector does not put into use their resources for the common benefits.

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