MAECO-505

Development Economics –II

MA ECONOMICS

4th Semester

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SYLLABI-BOOK MAPPING TABLE
PAPER NO: MAECO505
DEVELOPMENT ECONOMICS-II

SYLLABI	Mapping in Book

UNIT-I : APPROACHES TO ECONOMIC DEVELOPMENT

Traditional approaches to Development - Rodan's Theory of big push - Nurkse's Model of Balanced Growth - Unbalanced Growth –Hirschman's Strategy - Ranis –Fei Model.

UNIT –II : HUMAN CAPITAL AND SOCIAL CAPITAL

Human Capital - Process of Human Capital Formation - Human Capital and Unemployment - Role of Market in an Economy - Role of Government in Developing Economies - Role of Community in Economic Development.

UNIT– III : AL**LOCATION OF RESOURCES AND ECONOMIC DEVELOPMENT**

Need for Investment Criteria in Developing Countries - Rate of Turnover Criterion - Social Marginal Productivity Criterion - Marginal Per Capita Re-investment Criterion - Time Series Criterion - Little- Mirrlees Cost Benefit analysis of Projects

UNIT – IV : DEVELOPMENT PLANNING

Economic Planning - Input-output Analysis - Sectoral Projection in Planning: Plan models in India - The Fifth Plan Model - Plan in a Market Oriented Economy.

UNIT - V : TRADE AND POLITICAL ECONOMY OF DEVELOPMENT

Import substitution and export led growth - Krueger's Model of Rent seeking society - Institution and Development: Contribution of Stephen Knock and Philip Keefer - Foreign Direct Investment, Institutional Investment Development.

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UNIT – IV: DEVELOPMENT PLANNING

UNIT - V: TRADE AND POLITICAL ECONOMY OF DEVELOPMENT

INTRODUCTION OF THE BOOK

The economic development refers to the problems and challenges faced by the economics at the labour strata of development hierarchy. Right from Adam Smith to Karl Mark and Keynes the study of economic development has engrossed the attention of economists. Although before the 20^{th} century the economists were mainly interested to understand the problems of Western European nations.It was only after the Second World War, the economists were shown their concern for the less developed countries and thereby formulate the theories and models of economic development and growth.

This book would examine the problems of economic development of underdeveloped countries. To understand the problems of economic development of LDCs countries the book is divided into ten units-

In the very first unit, the book has elaborately discussed the concept of economic development, problems and measures, obstacles and a model. In the second unit, we have discussed the factors responsible for the economic underdevelopment of underdeveloped countries and also suggested the policies to stimulate the pace of development.

In the third unit, the readers are expected to learn some theories put forward by the Classical Economists. In this chapter, we have discussed about growth theories of three famous classical economists i.e., Adam Smith, David Ricardo and Malthus. In this unit, we have also discussed Schumpeter's theory of innovation andthe Marxian theory of development.

In the forth unit the learners may acquaint themselves about Neo-Classical and Cambridge Models of Economic Growth. The Harrods Model of Growth, Domars Mode of Growth, Solow Growth Model and Cambridge Model of growth has elaborately conversed in the unit.

Indeed the technical progress is important for economic growth. In the fifth unit, we have discussed the importance of technical changes inthe economic development of underdeveloped countries.

The important theories and approached for the economic development of underdeveloped countries have been discussed in the sixth unit. We have broadly discussed Rodan's Theory of big push, Nurkse's Model of Balanced Growth, Unbalanced Growth, Hirschman's Strategy and Ranis –Fei Model.

In unit seventh, we have discussed the importance of human capital formation, the role of the market, the role of government and community in economic development.

The vicious circle of economic underdevelopment requires that scarce resources are allocated properly and efficiently. Pertinent to the vicious circle of economic underdevelopment in underdeveloped countries, unit eight discusses the need for Investment Criteria in Developing Countries, Rate of Turnover Criterion, Social Marginal Productivity Criterion, Marginal Per Capita Re-investment Criterion, Time Series Criterion and Little-Mirrlees Cost-Benefit analysis of Projects.

Proper planning is utmost necessary in underdeveloped countries to take the path of economic development. As such, the unit ninth minutely discussed the importance of proper planning in LDCs countries.

The last unit deals with the trade strategies of development. It also discusses the model of rent-seeking society and the impact of the institution on economic development. In the last few decades, there were rapid growths of foreign investment in various countries. So, the role of foreign investment and foreign aid in economic development is also discussed in this unit.

It is hoped that the students will find the book useful for learning.

UNIT-I
APPROACHES TO ECONOMIC DEVELOPMENT

Structure

1.1 Introduction

This unit deals with the various approaches to economic development. Broadly, there are two approaches to economic development, namely balanced growth and unbalanced growth. Most of theories of balanced and unbalanced growth were developed during 1940s and 1950s. During those periods many newly independent countries were struggling to promote their economic development. The development missions were aimed to guide those countries to adopt the best strategy to achieve faster rate of development.

1.2 Objectives

The objectives of these units are to discuss the important the theories and approaches to development of underdeveloped countries.

1.3 Traditional approaches to Development: Balanced versus unbalanced growth

The doctrine of balanced growth states that there should be balanced growth of all sectors of the economy simultaneously. It calls for a big push or a large scale planned investment in a wide range of activities in order to overcome the low level equilibrium trap. It implies that simultaneous investment in all sectors such as agricultures industry, manufacturing and services etc. It needed to promote development: Balanced growth requires a balance between different consumers’ goods industries and between consumer goods and capital goods industries. It also requires a balance between agriculture and industry, balance between export and import sector. Further, it requires balance between social and economic overheads and directly productive activities.

The theory of balanced growth implies that there should be simultaneous and harmonious development of different sectors of the economy. The theory of balanced growth was supported by economists like Ragnar Nurkse, Arthur Lewis, Rosenstein Rodan and Allyn Young.

On the other hand the doctrine of unbalanced growth states that investment should be made in certain selected sectors or industries rather than simultaneously in all sectors of the economy. The theory argues that underdeveloped countries do not possess sufficient capital and other resources to invest simultaneously in all the sectors of the economy. The theory of unbalanced growth was supported by economists Albert O. Hirschman, Hans Singer, paul Streeten.

According to the proponents of unbalanced growth, deliberate unbalancing of the economy is the best way to achieve development in underdeveloped countries. The theory states that investment is strategically selected industries or sectors of the economy will generate external economies and create new investment opportunities. This will pave the way for further economic development.

1.4 Rodan’s Theory of Big Push

Paul N. Rosenstein Rodan is one of the proponents of balanced growth. He developed the theory of big push in 1943. The theory of big push states that a big push in the form of a high minimum quantum of investment is needed in as underdeveloped country to overcome the obstacles to development and to lunch it on the path of progress. The theory states that proceeding bit by bit will not make sufficient effects to launch the economy successfully on the development path. A minimum quantum of investment is necessary conditions of success.

In his theory, Rodan Stressed on the limitations imposed by the size of the market in an underdeveloped economy. He has restated his theory in terms of “three indivisibilities”. He stressed upon the necessity of obtaining external economies for development. There indivisibilities and external economies require a high minimum quantum of investment.

The three different kinds of indivisibilities are as follows;

1. Indivisibilities in the production function (supply of social overhead capital)
2. Indivisibility of demand. (Complimentarily of demand)
3. Indivisibility in the supply of savings.

Rodan argued that because of these indivisibilities proceeding ‘bit by bit’ will not be sufficient to overcome the problems of underdeveloped countries. Therefore, he calls for a bit push in the form of a high minimum quantum of investment. According to him a big push is a necessary condition of success.

Rondan’s three indivisibilities which necessitate big push are discussed as follows;

Indivisibilities in the production function

The most important indivisibility and external economies on the supply side is the supply of social overhead capital such as power, transport, communications, housing etc. their production requires wage investment and has long gestation period. Social overhead capital is irreversible in time. It must be supplied prior to directly productive investment. It is important for development because it creates investment opportunities in other industries.

Indivisibility of Demand

Rodan also stressed on the indivisibility of demand. It refers to the complementarities of demand. Different industries catering to consumer goods are interdependent in the sense that they provide market for each other and thus help each other and flourish. Therefore, he calls for large scale investment in setting up a number of interdependent and complementary industries. To him, individual investment projects have a high risk as there is always an uncertainty of demand.

Rodan uses an example of shoe making industry to explain the complementarily of demand. Suppose, in a closed economy if 100 workers who were undisguised employment were put into a shoe making factory, their wage would constitute additional income. If the newly employed workers spend all of their income on shoe they produce, the shoe factory would find a market and would probably succeed. However, the fact is that they would not spend their entire income on shoes. Hence, the risk of not finding market reduces incentives to invest. The three factory investment will probably be abandoned.

Now, let us change the example and instead put ten thousand workers in one hundred factories which produce different consumer goods. The workers will spend their income in purchasing goods produce in each other's industries and complement each other. The complementarity of demand would reduce risk and encourage investment and promote development.

Indivisibility in the Supply of Savings

A high income elasticity of savings is the Rodan's third indivisibility. To him a high minimum size of investment requires a high volume of savings which is not easy to achieve in underdeveloped countries. To overcome this problem, he suggests that when income increases due to an increase in investment, the marginal rate of saving should be higher than the average rate of savings.

Given these indivisibilities and external economies to which they give rise, Rodan Stressed that a big push or a large quantum of investment is needed to launch an underdeveloped country on the path of development.

Criticism

The big push theory has criticized on the following grounds:

1. **Big push beyond the capacity of underdeveloped countries:** Underdeveloped countries are poor and suffer from scarcity of resources. So, it is very difficult for them to give a big push or large scale investment in all sectors or industries. Big push is desirable but not feasible in underdeveloped countries.

2. **Neglects investment in agriculture:** The theory emphasizes the importance of a high level of investment in all types of industries except agriculture and other primary industries. But an underdeveloped country needs a big push in agriculture sector for irrigation facilities, transport facilities, supply of improved seeds, inputs and tools and implements.
3. **Ignores export and import substitutes**: The theory calls for a big push or large scale investment in social overhead capital for realization of extensive external economies. But Viner pointed out that underdeveloped economies realize greater external economies through international trade.
4. **Big Push generates inflationary pressure**: Big push on social overhead capital may lead to inflationary pressure in the economy as social overhead capital has a high capital-output ratio and a very long gestation period. The inflationary pressure may adverse affect the development process underdeveloped countries.
5. **Administrative and Institutional problems**: The theory emphasizes on the role of state or government in undertaking large scale investment. But the administrative and institutional machineries in underdeveloped economies are weak and insufficient.
6. **Big push not a historical fact**: Big push or balanced growth is not a historical fact. According to Prof. Hagen, historically, the presence or absence of a big push has not been a distinguishing feature of growth anywhere. Many things have grown but everything has not grown simultaneously.

Despite these criticisms, it can be concluded that Rodan's big theory has show the path of development to underdeveloped countries.

1.5 Nurkse's Model of Balanced Growth

Ragnar Nurkse was one of pioneers of balanced growth theory. The theory states that an underdeveloped country needs to make large investments in a number of industries simultaneously to overcome the obstacles to development. This will enlarge the market size, increase productivity, and provide an incentive for the private sector to invest. His argument resembles Rodan's idea and indeed he cites Rodan's famous example of shoe making industries to support his statement.

According to Nurkse balanced growth in both the industrial and agricultural sectors of the economy is required to promote growth. He recognized that the expansion and inter-sectoral balance between agriculture and manufacturing is necessary so that each of these sectors provides a market for the products of the other and in turn, supplies the necessary raw materials for the development and growth of the other.

Nurkse's argues that the main problems of an underdeveloped country are; small size of market and vicious circles of poverty. The small size of market leads to low inducement to invest and capital deficiency. He also discusses the various determinants of the market size and puts primary focus on productivity. There are vicious circles of poverty in underdeveloped countries which work on both demand and supply sides. On the demand side, an underdeveloped country has low productivity, low income which leads to low demand, low investment. Capital deficiency and again to low productivity. On the supply side, low productivity leads to low income, low savings, low investment, capital deficiency and again to low productivity.

According to Nurkse, development can place in such country only when the vicious circles are broken and the size of market is enlarged. Therefore, he calls for balanced growth in the form of large scale investment in a wide range of industries. To him most of the industries catering for mass consumption are complementary in the sense that they provide market for each other and thus support each other. The establishment of a number of interdependent industries will expand the size of market and increases incentive to invest. This will lead to capital formation and increases productivity. According to him, if the productivity levels rise in a less developed country, its market size will expand and thus it can eventually become a developed economy.

According to him substantial use of capital by an individual entrepreneur in an industry may not be profitable due to small size of market. On the other hand, a synchronized application of' capital in a wide range of projects in different industries may raise the general level of economic efficiency and enlarge the market size, promote investment and accelerate economic growth. In underdeveloped countries people lack adequate purchasing power. Low purchasing power means that the real income of the people is low. It is to be noted that a low purchasing power means that domestic demand for commodities is low.

1.5.1 Size of market and incentive to invest

The size of the market determines the incentive to invest. This is because entrepreneurs invariably take their production decisions by taking into consideration the demand for the concerned product. For example, if an automobile manufacturer is trying to decide which countries to set up plants in, he will naturally only invest in those countries where the demand is high. Therefore, he favours large scale investment in many industries and sector simultaneously as there is complementarities of demand between different sectors. This will expand the size of market and promote economic growth.

1.5.2 Determinants of the size of market

According to Nurkse, expanding the size of the market is crucial to increase the inducement to invest. The vicious circle of poverty can be broken only by expanding the size of market. The size of the market is determined by the following factors:

Money supply: According to Nurkse the problem of underdeveloped countries is the lack of real purchasing power which is due to low productivity levels. Thus, merely increasing the supply of money will not expand the market but will in fact cause inflationary pressure.

Population: Nurkse argued against the notion that a large population implies a large market. Though underdeveloped countries have a large population, their levels of productivity are low. This results in low levels of per capita real income. Thus, consumption expenditure is low and savings are either very low or completely absent. On the other hand, developed countries have smaller populations than underdeveloped countries but by virtue of high levels of productivity. Their per capita real incomes are higher and thus they create a large market for goods and services.

Geographical area: Nurkse rejected the view that country's geographical area is large. The size of its market also ought to be large. A country may be extremely small in area but still have a large effective demand. For example, Japan. In contrast, a country may cover a huge geographical area but its market may still be small. This may occur if a large part of the country is uninhabitable or if the country suffers from low productivity levels and thus has a low National Income.

Export promotion: The size of market can also be expanded through promotion of export. Nurkse emphasized that tariff duties, exchange controls, import quotas and other non-tariff barriers to trade are major obstacles to promoting international cooperation in exporting and importing. As a result, the amount of capital accumulation remains small. To overcome this problem customs unions have been formed to promote trade by removing customs duties. However, Nurkse did not agree with this view. He view that underdeveloped countries produced mainly primary products which of low elasticity of demand. So he is regarded as export pessimist.

Sales promotion: It argued that demand for products can be increased through extensive use of advertisement and other sales promotion technique. However, Nurkse argues that such activities cannot succeed at the macro level to increase a country's aggregate demand level. He calls this the "macroeconomic paradox".

According to Nurkse increase in productivity is the best way to expand the size of market. To him productivity is the primary determinant of the size of the market. An increase in productivity increases the flow of goods and services in the economy. As a response, consumption also rises. Hence, underdeveloped economies should aim to raise their productivity levels in all sectors of the economy, in particular agriculture and industry. This requires large investment in all the sectors. So he calls for balanced growth.

1.5.3 Productivity and economic development

Nurkse also discusses the relationship between productivity and economic development. In most underdeveloped economies, the technology used to carry out agricultural activities is backward. There is a low degree of mechanization coupled with rain dependence. So while a large proportion of the population around 80 per cent is actively employed in the agriculture sector, the contribution to the Gross Domestic Product is usually low. Hence, there is a need to increase productivity. For this the government should invest in providing facilities such irrigation facilities. High-yielding variety seeds, pesticides, fertilisers, tractors etc. This will lead to increase in farmers' income and purchasing power. Their demand for other products in the economy will rise and this will provide industrialists an incentive to invest in that country. Thus, the size of the market expands and improves the condition of the underdeveloped country.

Nurkse is of the opinion that in underdeveloped countries, if the money incomes or the people rise while the price level in the economy stays the same, the size of the market will still not expand till the real income and productivity levels rise. Nurkse approves Say's law and stales that "In underdeveloped areas there is generally no 'deflationary gap' through excessive savings. Production creates its own demand, and the size of the market depends on the volume of production. In the lust analysis, the market can be enlarged only through all-round increase in productivity Capacity to buy means capacity to produce.

Finally, Nurkse calls for a large amount of investment in the economy which expands the market size expands and leads to higher productivity levels, increasing returns to scale and eventually the development of the country in question. However, most economists who favoured the balanced growth hypothesis believed that only the state has the capacity to take on the kind of heavy investments the theory propagates. Further, the gestation period of such lumpy investments is usually long and private sector entrepreneurs do not normally undertake such high risks. Nurkse contends that the choice between public and private enterprises for achieving the required.

1.5.4 Criticisms

Nurkse's balanced growth theory has been criticised by Hirschman and Hans Singer on the following grounds.

(a) **Balanced growth beyond the capacity of underdeveloped countries**: Hirschman argued that underdeveloped economies lack of resources both .financial and human. They do not have resources such as skilled labour and technology. Thus, to assume that an underdeveloped nation can undertake large scale investment in many industries of its economy simultaneously is unrealistic due to the paucity of resources.

(b) **Balanced growth applicable to developed economy**: Hans Singer asserted that the balanced growth theory is more applicable to cure an economy facing a cyclical downswing which is a feature of advanced countries rather than of underdeveloped countries.

(c) **Say's Law of market does not operate**: Nurkse states that Say's Law of' market operates in underdeveloped countries and Supply creates a matching demand for the output. However, Keynes stated that Say's Law is not operational in any country because people do not spend their entire income; a part of it is saved for future consumption.

(d) **Focuses only on complementary industries**: Nurkse states that if demand for the output of one sector rises, due to the complementary nature of demand, the demand for the output of other industries will also experience a rise. Thus, if large investments are made in a large number of industries simultaneously, an underdeveloped economy can become developed due to the phenomenon of complementary demand. However, the theory ignores substitute goods which are in competition with each other.

(e) **Wrong assumption about underdeveloped countries**: Nurkse assumes that an underdeveloped economy starts with nothing at hand. Hans Singer did not agree with it. To him, an economy usually starts at a position which reflects the previous investment decisions undertaken in the country.

(f) **Balanced growth not a theory of growth:** Hirschman believed that Nurkse's balanced growth theory was not in fact a theory of growth. Growth implies the gradual transformation of an economy from one stage to the next stage. However, the balanced growth theory involves the creation of a brand new, self-sufficient modern industrial economy being laid over a stagnant self-sufficient traditional economy. Thus, there is no transformation.

1.6 Unbalanced Growth –Hirschman’s Strategy

The theory of unbalanced growth was advanced by Albert Hirschman-1958 as against the doctrine of balanced growth. Hirschman carries Singer’s idea further and contends that deliberate unbalancing of the economy, in accordance with a predesigned strategy, is the best way to achieve economic growth.

He agrees with both Nurkse and Singer. He does not deny the need for a big push. On the contrary, he argues that ability to invest is one of the serious bottle-necks in underdeveloped countries. The ability to invest depends mainly on how much investment has already been made.

An underdeveloped country need a big push to get off dead center at the same time such a country cannot manage simultaneously a balanced investment package in industry and in agricultural improvement. What to do?

Hirschman suggests undertaking big push in strategically selected industries or sectors of the economy. [A Hirschman, the Strategy of Economic Development 1958].

He points outs the industrialized countries did not get where they are through "balanced growth". Everything has not grown at the same rate throughout the century. Development has proceeded with growth being communicated from the leading sectors of the economy to the followers, from one industry to another, from one firm to another.

According to him development can take only by unbalancing the economy.

The economy can be unbalanced by two methods –a) Investing in SOC; b) Investing in direct production activities (DPA). The farmer creates external economies while the latter appropriates external economies.
Costs of new investment in SOC are measured
on the horizontal axis, and costs of related output of PDA on the vertical axis. At the far right SOC is plentiful and costs of DPA are low. As we move left, costs for my given output of DPA rise, firstly slowly then more rapidly. The 45^{o} line expresses the idea of balanced growth of DPA & SOC.
The real scarcity, in Hirschman's view is not the resources themselves, but the ability to bring them into play. To illustrate this principle, he makes the simplifying assumption that SOC and DPA cannot be expanded simultaneously, because of limited ability to utilize resources.

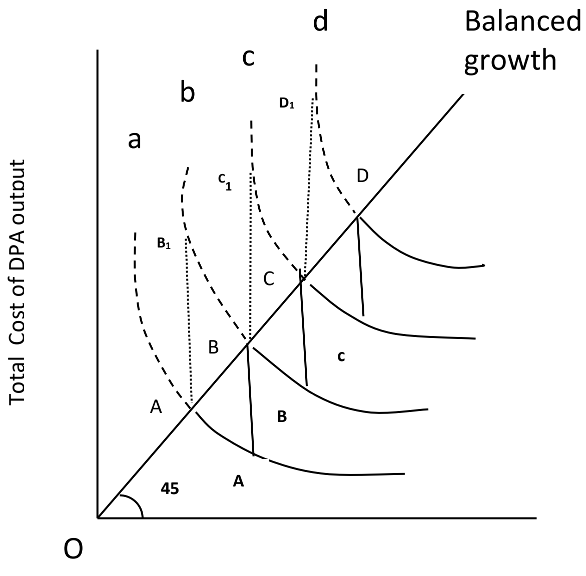


Figure 6.1

Thus, the planning problems are to determine the sequence of expansion that will maximize in induced decision making.

If we adopt the first course i.e. by expanding Soc, the economy will follow the heavy line AA_1 BB_2C. The increase in Soc from A to A_1, induces DPA to increase until balance is respond at B, and so on. Hirschman calls this process "development via excess capacity of (SOC).

If we take the other route we follow the dotted line AB, BC_1C. When we increase DPA to B_1, balance requires increasing SOC to B, and so on. He calls this route "development via shortages of SOC.

According to him that sequence of expansion should be adopted which maximizes 'induced decision making'? He prefers that sequence which is vigorously self-propelling, to him, development via excess SOC is more continuous and smooth than the second path with is compulsive. The first path is permissive [divergent series – create more external economies].

The balanced growth of SOC & DPA is not only unattainable in most underdeveloped countries; it may not even be desirable. The rate of growth is likely to be faster with chronic imbalance, preciously because of the 'pressures' it sets up.

Linkages: Some projects have both backward and forward linkages. The task is to find the project with greatest total linkage. A backward linkage effect is produced when the cost is reduced in the first industries. By the increased in demand, the primary production activities mostly of enclave type leading to exports have little development effects on the economy, Hirschman, therefore advocates the setting up of last stage industries first as they have high backward linkage effects. According to Hirschman, Iron & steel industries and import replacing industries have the highest linkage effects. In making products, a developing country need not undertake all the stages of production simultaneously. It can begin with manufacture of durable consumer goods at the final stage of production. It can import many converting, assembling and mining plants for final touches to almost finished products. For this way the country can turn out finished product that it was previously importing and then move to the higher stages of production – to intermediate goods and machines through backward linkage effects.

When the demand for import-replacing commodities increases and reaches a certain threshold, it is advantageous to manufacture the product at home when threshold is reached, Hirschman suggests subsidies and protection to import replacing industries.

LDCs do not give due important to part played by exports in economic development. He therefore, suggests exports promotion which is the only practical way of achieving industrialization via import substitution.

1.6.1 Criticism of unbalanced growth theory

The unbalanced growth theory propounded by Hirschman has realistically taken into account most of the aspects of development planning The theory shows how a resource search underdeveloped country can accelerate its economic development by prioritizing the allocation of resources to the most strategic sectors or industries. However, the theory suggest from certain limitation which are as follows.

1. **No attention to optimum degree of imbalance** – The theory states that there is a need to unbalance the economy by investing the limited resources in the strategically important sector. But it does not say anything about the optimum degree of imbalance.

2. **Neglects Resistance –**The theory focuses only on the stimuli to expansion from unbalanced investment. But it neglects the resistance caused by the unbalanced growth.

3. **Inflationary pressure**– The theory calls for large investment in certain strategic sectors. Such investments are likely to result in rise in money income which tend to increase demand for consumer goods relative to their supply. They may lead to inflationary pressure in the economy.

4. **Factor immobility** – The inducement mechanism described by the theory is possible in countries where there is internal mobility of resources. But in underdeveloped countries mobility of factors is limited. It is very difficult to move resources and factors from one sector to another.

5. **Ignores institutional factors** – The theory lays emphasis only on investment decisions. It ignores institutional factors like administration, management and policy decision which also play important role in the development process.

Despite, the above limitation, the unbalanced growth strategy has been accepted as a novel strategy for development.

6.7 Ranis –Fei Model

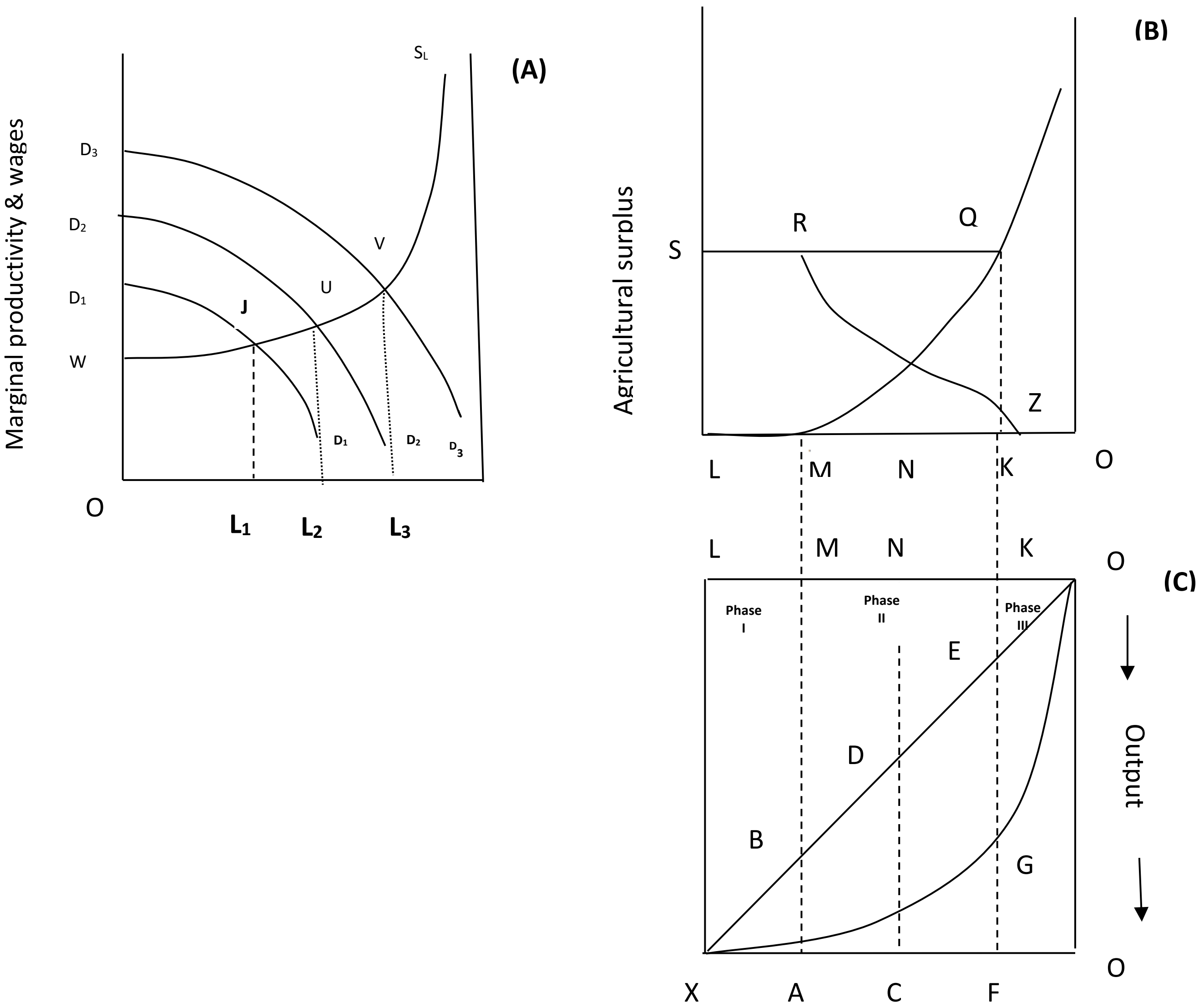
John Fei and Gustar Ranis developed of model for development of underdeveloped countries in their article entitled, "A Theory of Economic Development", which was published in 1961. In their model, they try to analyse the process of development of an underdeveloped country. The model shows how an underdeveloped economy can move from a situation of stagnation to self-sustained growth through transfer of surplus labour from agriculture to industrial sector. The model is similar to Lewis model. However, it takes into both agriculture and industrial sectors. So it is an improvement over the Lewis model.

The model is based on the following assumptions;

1. The economy is a closed one.
2. The supply of land is fixed.
3. The economy consists of two sectors – agricultural and industrial sectors.
4. There exists surplus labour in the agriculture sector.
5. The output of agriculture sector is a function of land and labour.
6. The output of industrial sectors is a function labour and capital

Given their assumptions, Ranis and Fei discusses the process of development in three phases. These phases are discussed and depicted in the figure as follows;

Phase I: In the first phase the labour with zero marginal productivity are transferred to the industrial sector at constant industrial wage rate. In this phase, the transfer of labour from agriculture to industrial does not lead to decline in agricultural output as the marginal productivity of those labour are zero. This phase ends with the transfer of all zero value labour. In the figure, the marginal productivity of LM Labour is zero. This amount of labour gets transferred in the first. In this phase agriculture surplus remains constant as total agricultural output remains the same. This is shown by S R Portion of the SZ curve in figure B. The amount of labour i.e. LM transferred is indicates by OL_1 in industrial sector in figure A



In the figure OX is the total product curve and LMQP is the marginal product curve of labour. The figure B and C relates to the agricultural sector. The figure B shows how much agricultural surplus per labour can be released by agricultural sector to industrial sector at different points of time when labour is moving out from agricultural sector. The figure A shows the expansion process of industrial sector.

Phase II: In the second phase, those agricultural labourers who marginal productivity is positive but less than institutional wage are transferred to the industrial sector. In these stage MN units of labour is transferred. This leads to fall in total agricultural output as their marginal productivity was positive. As a result agricultural surplus will fall as shown by RZ position of the SZ curve, this will change the terms of trade in favour of agriculture sector.

Hence, more industrial good are paid for the given amount of agricultural products. This will cause an upward down on labour supply curve WS_L for industrial sector from the point J onwards n figure A.

Phase III – In the Phase III, the marginal productivity of labour in the agriculture sector becomes more than the institutional wage. SO, in this phase, labour can be transferred to industrial sector only at higher wage rate. It makes the beginning of commercialization of agriculture as the wages in the agriculture sector are guided by the market forces.

Further, transfer of labour from agriculture sector to industrial sector cause a greater loss in production. As a result average agricultural surplus declines at greater rate. So, in this phase labour curve to industrial sector becomes still steeper as shown in figure A.

The transfer of labour and reinvestment of profit by the capitalist in industrial expansion results in increase in income of workers in both the sector. However for balanced growth there must be harmonious growth of both the sectors.

1.7.1 Criticisms

The model has very elaborately explained the process of development underdeveloped countries. It has considered the process of development of both the sectors. However, the model has certain limitations which are as follows.

1. The model assumes that labour from agricultural sector can be easily transferred to industrial sector at the institutional wage. However, it is not easy to shift the labourers as they may hesitate to move to industrial sector due to their long association with family, farming and customs.
2. The model also assumes that the per capita consumption of the workers remains unchanged even after the transfer of labour to industrial sector. This may not be correct especially in phase-I when agricultural output does not fall. Even in other phases, the workers who are still left in agricultural sector have more output. Hence, per capita consumption of food may go up.

3. The model considers increase in agricultural labour productivity to be independent of labour transfer. But labour transfer itself can result in better organization of agriculture leading to a higher productivity of labour.
4. the model is based on a closed economy. However, in the present day even underdeveloped countries are open and are involved in exporting and importing of commodities.
5. The model assumes that there exists zero value labour in underdeveloped countries. But Schultz and few other economists did not agree. They argued that zero value labour does not exist in agriculture.
6. The model assumes that the level of institutional wages in the agriculture sector will remain unchanged even after the rise in agricultural productivity. This is wrong because with in productivity wage rate may also increase.

Despite the above limitations, the model chase very clearly illustrated the process of development of both agriculture and industrial sectors of underdeveloped countries. The model shows how an underdeveloped country can transform it economy into a self-sustained growth through the transfer of labour from the traditional agriculture sector to industrial sectors. It has incorporated the process of commercialization of agriculture as well as expansion process of industrial sector.

1.8 Let us sum up

In this unit, we discussed the various theories of development of underdeveloped countries. Most of the theories of development were developed during 1940s and 1950s as during those times many newly independent underdeveloped countries were struggling to promote economic development. The approaches to development have been grouped into two broad groups-Balanced growth and unbalanced growth, while the balanced growth calls for simultaneous investment in all the sectors or industries of the economy, the unbalanced growth advocated for investment in certain strategically important sector of the economy to promote economic development of underdeveloped countries.

1.9 Key Terms:

External Economies: It refers to the investment opportunities created in new projects through reduction in costs.

Social and Economic Overheads: It denotes infrastructure facilities such as power, transport, communications etc.

Deflationary gap: It refers to shortfall in aggregate demand from the level required to maintain full employment in an economy.

Agricultural surplus: It is the quantity of output which can be released by the agricultural sector for other sectors.

1.10 Long Questions

1. Distinguish between balance growth and unbalance growth.
2. Examine the Rodan's theory of big push.
3. Explain the Nurkse's model of balanced growth.
4. Illustrate the Hirschman's strategy of unbalanced growth.
5. Discuss the Ranis-Fei model of development.

1.11 Further/Suggested Readings.

Higgins, B., Economic Development Norton and Co. publisher.

Thirlwall, A. P., Growth and Development, Palgrave Macmillan.

Soni, R.N., Agricultural Economics, Vishal Publishing Co.

UNIT –II

HUMAN CAPITAL AND SOCIAL CAPITAL

Structure

2.0 Objectives

The learners are expected to acquaint themselves with the various concepts and approaches relating to human and social capital.

- Process of human capital formation,
- human capital and unemployment.
- Community approach to development: State, market and community
- Market and prisoner's dilemma- Community,
- social capital and development
- Critical evaluation of the social capital approach to development.

2.1 Human Capital

In economics, "capital" refers to all of the assets a business needs to produce the goods and services it sells. In this sense, capital includes equipment, land, buildings, money, and people i.e., human being. The productive resources of a society (country) may be classified into human and nonhuman capital. Human capital indicates the productive capacity of the individual or of the population. Human capital have some distinct features from other types of capital. Human capital is unique and differs from any other capital. Human capital is not only a means of production, but also the ultimate objective to be achieved by the society.

Human capital is the stock of habits, knowledge, social and personality attributes (including creativity) embodied in the ability to perform labour so as to produce economic values. According to Encyclopedia Britannica, "*Human capital is the intangible collective resources possessed by individuals and groups within a given population. These resources include all the knowledge, talents, skills, abilities, experience, intelligence, training, judgment, and wisdom possessed individually and collectively, the cumulative total of which represents a form of wealth available to nations and organizations to accomplish their goals*."

In a deeper sense, however, human capital is more than simply the physical labor of the people who work for an organization. It is the entire set of intangible qualities those people bring to the organization that might help it succeed. A few of these include education, skill, experience, creativity, personality, good health, and moral character.

In the long run, when employers and employees make a shared investment in the development of human capital, not only do organizations, their employees, and clientele benefit, but so does society at large. For employers, investment in human capital involves commitments like worker training, apprenticeship programmes, educational bonuses and benefits, family assistance, and funding college scholarships. For employees, obtaining an education is the most obvious investment in human capital. Neither employers nor employees have any assurances that their investments in human capital will pay off. For example, even people with college degrees struggle to get jobs during an economic depression; and employers might train employees, only to see them hired away by another company. However, the level of investment in human capital is directly related to both economic and societal health.

2.2 Process of Human Capital Formation

The term human capital formation implies the creation of abilities and skills among the population of a country. It is the process of transforming the liability of the huge size of population into assets. Accordingly, human capital formation **indicates** the process of acquiring and increasing the number of persons who have the education, skills and experience which are critical for the economic and overall development of the nation. Human capital formation is thus associated with investment in human beings and his development as a creative and productive resource.

In order to develop various sectors of the economy, a country should introduce manpower planning for the development of its human resources. Manpower planning indicates planning of human resources for meeting the development needs of the economy. Different ways of human capital formation may be explained with the following points;

(i) Health and Nutrition:

As the poor health and undernourishment adversely affect the quality of manpower, the best way to improve the quality of manpower in underdeveloped countries is to provide adequate food and proper nourishment to people along with adequate health and sanitation facilities.

(ii) Education and Training:

The second composition of human capital formation is to provide education and training facility to the people in general. Investments made in education can accelerate economic growth. Proper utility of manpower depends on system of education, training and industrial experience of the people. Investment in education is not only highly productive but also yields increasing returns, with positive externalities**.**

iii) In on-the-job training, including aid type apprenticeships organised by firms.

(iv) Adult education and training is also another integral part of manpower planning.

(v) Migration of individuals and families to adjust to changing job opportunities.

(iv) Housing Development:

The final component of human capital formation is the development of housing facilities for the people, which is an important determinant of human resource development. In underdeveloped countries special incentives for private house construction should be provided in order to provide healthy living conditions to the people. Moreover, steps must be taken to introduce subsidised housing schemes.

2.3 Human Capital and Unemployment:

Unemployment is one of the major problems in approximately all countries of the world. Unemployment is defined as the number of persons searching work, but unable to find the job. Those people are not regarded as unemployed, who are willingly out of workforce.

For developing countries striking increase in the level of unemployment is a major problem. It does not mean that there is no unemployment in the developed countries. However, the nature of unemployment in the developed countries is somewhat different from that in the underdeveloped countries. A number of social evils are link with high growth of unemployment, for example unemployment increases suicides, crimes, and poverty rates.

Human capital is the most important determinant of economic structure. It determines the productivity of the workers, and ultimately the economic growth and development of the different sectors. Human capital indicates the abilities and skills of the masses. It has very positive effect on economic growth and development. Increase in the human capital will leads to reduce in the mistakes and to improve plans and modalities of the peoples. Human capital is the best instrument to reduce unemployment. Human capital formation leads to increase in productivity of labour force. Increased labour productivity increases profitability. And increased profitability leads to increase in production and employment. Thus, there is an increase in demand for labour. Increased demand for labour have positive impact on wage rate. This increased wage rate ultimately encourages those to be part of work force, who used to be unemployed previously.

There are some determinants of human capital like education, health, Expected life, and population. Education is a key factor to promote the efficiency and capabilities of the masses. It is that factor which affects the whole sector of the economy. Empirical study reveals that education and health have positive significant impact on employment and wages of female workers. There is a strong link between the education level and unemployment rate. When people invest in their educations, it reduces their unemployment opportunity cost. Rate of return to education and youth unemployment have positive relation. Educated workers are more efficient than non-educated people in seeking new jobs and gaining more wages. There is a lower risk of unemployment at higher educational levels. Educated workers can find new jobs or adjust to the workforce market easily because of job training and market demands. Declining standard of education in the educational organizations and literacy rate putting a large amount in rising unemployment rate. Further, education gives an individual enough confidence to start his own business. In other words, educated people are ready to undertake their own business. Thus, a skilled individual not a job seeker, rather he is a job creator.

However, sometimes it so happens that the educated people are interested to undertake white collar job only and reluctant to do physical labour. Moreover, education may not add any skill in those individuals. In such cases, increase in the level of education may cause in the volume of unemployment.

Health is also having significant impact on employment level. Healthy worker is more efficient and more productive. Unemployment increases due to less efficient workers because they are likely to produce less so they remain unemployed which effect the whole economy negatively. Expected life of the people also have massive impact on unemployment. High life expectancy indicates the health, physical fitness and experience of the people which is the imperative factor of human capital. One with better health is able to work for a longer duration. Moreover, healthy individual can work in any environment.

Population is major factor to impact unemployment rate. If the population in country are educated and healthy, the level of unemployment would be lower. They would have higher level of income and higher standard of living. Society with higher standard of living always have lower birth rate and ultimately lower population growth. Lower population growth rate ultimately leads to decline in unemployment rate.

2.4 Role of Market in an Economy:

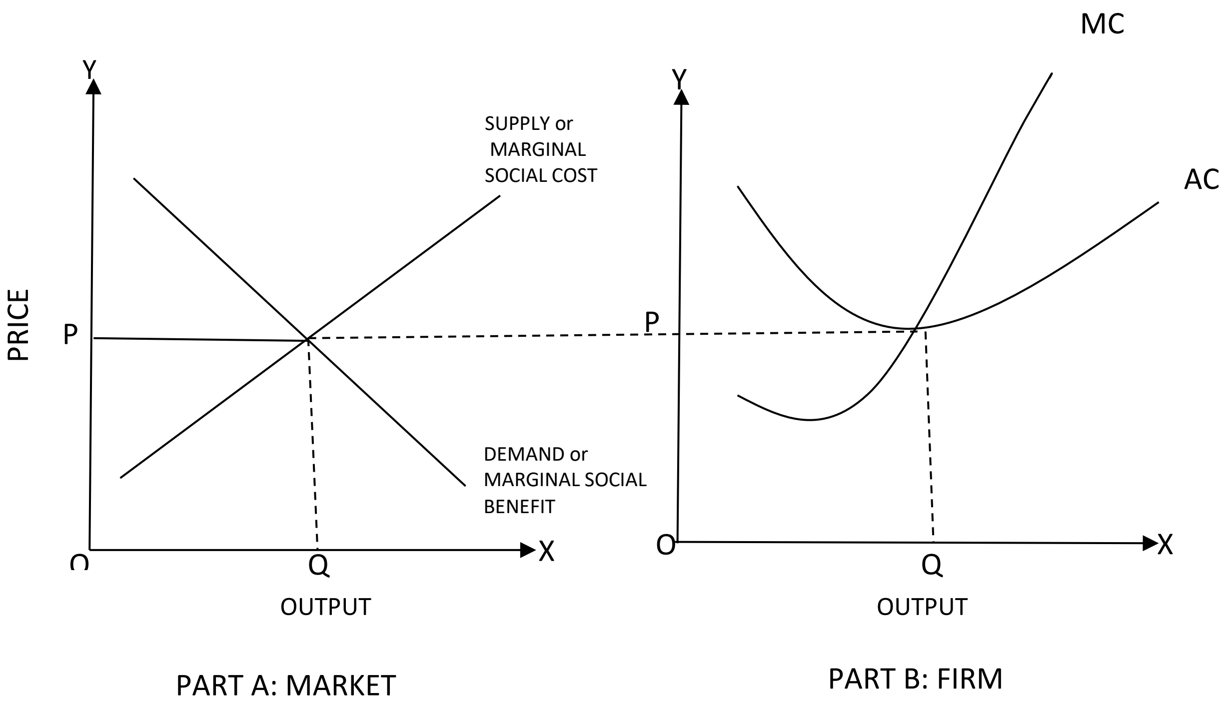
Before discussing the role of market in an economy, let's have an idea about the definition of market. A market is an institutional mechanism that brings the buyers and sellers of a product closer, where they bargain for the price of that product, the price of the product is determined and the product is sold in the market. Thus, to be a market a specific place is not necessary. The ultimate objective of the market is resource allocation.

2.4.1 Market Efficiency:

If the market is able to allocate the resources in the economy efficiently, it is known as market efficiency. The concept of economic efficiency most often used in economics is called Pareto efficiency (or optimality), which states that an economy is efficient if it is not possible to make at least one person better off without making someone else worse off. If the gain to the society from one small change is called the marginal social benefit and the cost of the change is the marginal social cost, then a general efficiency rule for evaluating changes can be stated as follows: If marginal social benefit equals marginal social cost, then the economy is efficient because there is no net gain from any change. If marginal social benefit is greater or less than marginal social cost, the economy is not efficient, and the proposed change would improve economic efficiency. Suppose, for example, that it is possible to produce more goods with the same resources by changing to a different production process. With more goods, the welfare of some consumers could be improved at no cost to society. That economy was not producing goods efficiently.

If the market is allowed to work without any interference, it is possible to achieve efficient allocation of resources. Here queries arise, how do competitive markets achieve efficiency?   It can be explained with the help of the figure 7.1.

Figure 7.1



The long-run equilibrium of a competitive market is depicted in part A of Figure 7.1. The market demand for the product approximates the marginal benefit to consumers consuming this good, and the market supply corresponds to the marginal cost of producing the good. At the market equilibrium, the marginal cost of producing one more unit equals the marginal benefit—all the possible aggregate social gains from producing this good or service have been achieved. The equilibrium price P is equal to both the marginal cost and the marginal benefit. From the point of view of a typical firm in this competitive market, the equilibrium price also equals the lowest possible production cost per unit—that is, the minimum of the average cost function (please refer to part B of Figure 7.1). At that price, firms are earning normal profits—that is, rates of return equal to those available elsewhere in the economy. Because investors are doing exactly as well in this business as they could in any other, there is no incentive for changes in output or prices. The results in a competitive market when producers act to get the highest possible profits and consumers act to get the greatest possible satisfaction are as follows:

(a) Marginal cost equals marginal benefit, with both equal to price.

(b) Price equals the lowest possible production cost and producers earn normal profits.

To achieve efficiency in the market many conditions are to be satisfied (the assumptions of a perfectly competitive market). However, many times it is difficult to fulfill such conditions, which leads to inefficient allocation of resources in the economy. This is known as market failure.

2.4.2 Sources of Market Failure:

We have already discussed about market efficiency. If the market is efficient there is no need of any other intervention in the market. But in certain cases either market does not exist or market does not work efficiently. The causes for market failure are discussed below:

(a) **Public Goods**: Public goods have two properties i.e. non-rival and non-excludable. Non-rival means that one additional person can consume the good without reducing any other consumer's benefit; after the good or service is produced. In other words, consumption of a public good by someone does not reduce its availability for the others. Non-excludable means that it is not possible (at least at reasonable cost) to exclude consumers who do not pay the price from consuming the good or service. For example, one particular resident of a city cannot be excluded from enjoying clean environment, once it is provided by the municipal authority. In other words, someone can enjoy the benefits of public goods even without stating his preference for it. So, no one state his/ her preference (demand) for it. As a result, it is impossible to derive the aggregate demand function for such goods. In other words, there is no market for public goods.

(b) **Externality**: Externality exists when one economic agent's (consumer or producer) action (consumption or production) affects another agent's welfare directly rather than through market price or quantity. In other words, one person's consumption (or one firm's production) imposes cost or benefits on another consumer or producer. Externality may be positive (benefit) or negative (cost). In case of positive externality, marginal social benefit of production (or consumption) is greater than that of marginal private benefit. Now, if the supply of such products is to be done by the market, its supply would be less than socially desirable level. As private supplier would supply that much where marginal cost is equal to marginal private benefit (which is less than marginal social benefits). So, government interference become necessary.

(c) **Natural Monopoly**: A natural monopoly is a firm that can produce the entire output of the market at a cost that is lower than what it would be if there were several firms. In case of natural monopoly, the particular enterprise has a downward sloping marginal cost curve. And average cost curve lies above the marginal cost curve. Natural monopoly arises when there are strong economies of scale. Generally, a natural monopolist has huge amount of fixed investment at the initial stage. If a firm is a natural monopoly, it is more efficient to let it serve the entire market rather than have several firms compete. Thus, price mechanism cannot work in case of natural monopoly and government intervention become necessary in such case. Price regulation is most often used for natural monopolies. Electricity distribution companies, railway etc. are example of natural monopolies, where government intervention become necessary.

2.5 Role of Government in Developing Economies

In modern times, State participation in economic activity can hardly be a matter of disagreement. The free play of economic forces, has often meant large unemployment and instability of the economic system, not only in the developing countries, but also in highly developed capitalist countries. In the advanced countries, State intervention has been invoked to ensure economic stability and full employment of resources. State action is all the more inevitable in under-developed economies which are struggling hard to get rid of poverty and to attain higher living standards. Accordingly, Governments has been playing a vital role in the development of under-developed economies. The role of the governments in the developing countries can be discussed in the following respects:

(a) Comprehensive Planning

In an under-developed economy, there is a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a stationary state of under-development equilibrium. The vicious circle of under-developed equilibrium can be broken only by a comprehensive government planning of the process of economic development. Planning Commissions have been set up and institutional framework built up.

(b) Economic Planning

The role of government in development is further highlighted by the fact that under-developed countries suffer from a serious deficiency of all types of resources and skills, while the need for them is so great. Under such circumstances, what is needed is a wise and efficient allocation of limited resources. This can only be done by the government. It can be done through central planning according to a scheme of priorities well suited to the country’s conditions and need.

(c) Institution of Controls

A high rate of investment and growth of output cannot be attained, in an under-developed country, simply as a result of the functioning of the market forces. The operation of these forces is hindered by the existence of economic rigidities and structural disequilibria. Economic development is not a spontaneous or automatic affair.

On the contrary, it is evident that there are automatic forces within the system tending to keep it at low level. Thus, if an underdeveloped country does not wish to remain caught up in a vicious circle, the Government must interfere with the market forces to break that circle. That is why, various controls have been instituted, e.g., price control, exchange control, control of capital issues, industrial licensing.

(d) Social and Economic Overheads

In the initial phase, the process of development, in an under-developed country, is held up primarily by the lack of basic social and economic overheads such as schools, technical institutions and research institutes, hospitals and railways, roads, ports, harbours and bridges, etc. It requires very large investments. Such investments will lead to the creation of external economies, which in their turn will provide incentives to the development of private enterprise in the field of industry as well as of agriculture. The Governments, therefore, must go all out in building up the infrastructure of the economy for initiating the process of economic growth.

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

Investments in economic overheads require huge outlays of capital which are usually beyond the capacity of private enterprise. Besides, the returns from such investments are quite uncertain and take very long to accrue. Private enterprise is generally interested in quick returns and will be seldom prepared to wait so long. The State is in a far better position to find the necessary resources through taxation borrowing and deficit-financing sources not open to private enterprise. Hence, private enterprise lacks the capacity to undertake large-scale and comprehensive development. Not only that, it also lacks the necessary approach to development. Hence, it becomes the duty of the government to build up the necessary infrastructure.

In order to cope with the growing requirements for finance, the government has to establish special financial institutions for providing agricultural, industrial and export finance.

(e) Institutional and Organisational Reforms

It is felt that outmoded social institutions and defective organisation stand in the way of economic progress. The Government, therefore, sets out to introduce institutional and organisational reforms. Institutional and organizational reforms cover land reforms (abolition of zamindaries and ceiling on holdings), tenancy reforms, introduction of co-operative farming, nationalisation of insurance and banks etc.

2.5.1 Government Failure and Washington Consensus

Government intervention to resolve market failures may also fail to achieve a socially efficient allocation of resources. Government failure is a situation where government intervention in the economy to correct a market failure creates inefficiency and leads to a misallocation of scarce resources.

(a) Sometimes government award subsidies to the producers (firms). But this may protect inefficient firms from competition and create barriers to entry for new firms because prices are kept ‘artificially’ low. Thus, subsidies, and other assistance, may lead to moral hazard problem.

(b) Taxes on goods and services can raise prices artificially and distort the efficient operation of the market. In addition, taxes on incomes can create a disincentive effect and discourage individuals from working hard.

(c) Governments can also fix prices, such as minimum and maximum prices, but this can create distortions which lead to shortage or surpluses.

- *Shortages*, which may arise when government fixes price below the market rate. Because public healthcare is providing free at the point of consumption there will be long waiting lists for treatment.
- *Surpluses,* which may arise when government fixes prices above the natural market rate, as supply will exceed demand. For example, guaranteeing farmers a high price encourages over-production and wasteful surpluses. Setting a ‘minimum wage’ is likely to create an excess of supply of labour in markets where the ‘market clearing equilibrium’ is less than the minimum.

(d) Information failure is also an issue for governments. Government does not necessarily ‘know’ enough to enable it to make effective decisions about the best way to allocate scarce resources. Many economists believe in the *efficient market hypothesis,* which assumes that the market will always contain more information than any individual or government. The implication is that market prices and market movements should be free from interference because markets cannot be improved upon by individuals or governments.

(e) Excessive bureaucracy is also a potential government failure. This is caused by the public sector when it tries to solve the principal-agent problem. Government must appoint bureaucrats to ensure that its objectives are pursued by the managers of public sector organizations.

(f) Finally, there is the problem of moral hazard associated with the payment of welfare benefits. If individuals know that the state will provide unemployment benefit, or free treatment for their poor health, they are less likely to take steps to improve their employability, or to avoid activities which prevent poor health, such smoking, a poor diet, or lack of exercise.

Towards the end of last century, many developing countries experienced government failure in terms of corruption and nepotism. The public sector undertakings experienced huge losses. The government failure encouraged the supporters of free market economy for advocating strategies with greater role for free market economy. The economists in headquarters of International Monetary Fund (IMF), the World Bank and the United States Treasury Department reached some consensus regarding the role of government in the developing and underdeveloped countries. As all these three agencies have their headquarters in the Washington D.C., this consensus is known as Washington Consensus. According to John Williamson, a former World Bank Manager Washington Consensus consists of ten basic principles; which are not mutually exclusive. The basic points of Washington Consensus are:

(a) **Fiscal Discipline**: Fiscal discipline means the minimization of the gap between government expenditure and government income. Accordingly, it advocated for maximum limit on fiscal deficit and revenue deficit.

(b) Concentration of public expenditure on public goods including education, health and infrastructure. Accordingly, it advocated for reducing government unproductive expenditure.

(c) **Tax reform**: Majority of the developing countries have narrower tax base and highly progressive tax rate. It encourages tax evasion which results in reduction in tax revenue. So, it advocated for broadening the tax base with moderate tax rate.

(d) In most of the developing countries capital is made artificially cheaper through government interference with the interest rate. The ultimate objective is to increase the level of investment. However, it leads to misuse of capital. So, it advocated that Interest rates to be market-determined and positive.

(e) **Competitive Exchange Rates**: During those days (at the time of Washington Consensus) most of the developing countries had fixed exchange rate. It overvalued the currencies of developing countries; which results in increase in the volume of import and export reduction. It ultimately deteriorated in their terms of trade. So, it advocated for flexible exchange rates as a measure to correct their terms of trade.

(f) **Trade liberalization**: It advocated for openness towards international trade. Trade liberalization advocates ending up of tariffs, quotas etc. Trade liberalistion increases competitiveness in the economy and also benefits the common people (though lower price of products).

(g) **Openness to Foreign Direct Investment**: During those days most of the developing countries followed policies towards restricted foreign direct investment (FDI). However, FDI is crucial for employment generation and technological development in those countries. So, Washington consensus advocated for openness towards FDI.

(h) **Privatisation** of State Enterprises: The state enterprises in the developing countries experienced huge losses, which ultimately deteriorates fiscal discipline of those countries. So, it advocated for privatization of those enterprises for better fiscal health of those countries.

(i) **Deregulation**: It includes policies such as abolishment of regulations that impede entry or restrict competition. However, in some areas government regulation is necessary for safety, environmental and consumer protection grounds, and prudential oversight of financial institutions.

(j) **Legal Security for Property Rights:** To have private investment legal security of private property is necessary. If private property does not have legal security it discourages investors to invest. So, it advocated for legal security of private property.

2.6 Role of Community in Economic Development

We have already discussed about the role of government and market mechanism in economic development. However, there is certain areas where both the market and the government cannot function efficiently. Hence the role of the community increases in such countries. The community (social capital) plays a vital role in an economy, specially in the underdeveloped and developing countries. For example, the buyer in a market may refuse to pay the agreed price of a product. In such a situation the producer (seller) may take the help of the judicial system of the country. But the judicial system in a under developed country itself is not efficient to protect the rights of that producer; as the judicial system in such country is either corrupted or a costly affair. In such a situation the social capital can play an important role. Social capital includes three institutions. These are, Social Trust, Social Norms and Social Network.

7.6.1 Trust as an Economic Variable and Prisoner’s Dilemma:

How social trust leads to a profitable business can be explained with the help of Prisoner’s dilemma. It is a classic example of Nash Equilibrium, where equilibrium takes place at a sub-optimal level. Let’s assume that two suspected persons A and B were caught by the police and keep them in two cells separately. They are interrogated by a prosecutor who alternatively threatens each suspects with a heavy penalty should he continue to deny the charges while the other suspect confesses; and tempts each with a reduce penalty if he confesses while other continue to deny. The payoff of the prisoners' can explain with the help of the following pay off matrix, given in Table 7.1.

Table 7.1: Payoff Matrix of the Prisoners

		Prisoner B's strategy	
Prisoner A's		Confess	Non- Confess
Strategy	Confess	(5, 5)	(0, 10)
	Non Confess	(10, 0)	(0, 0)

From the above pay off Table7.1 it can be read that if both A and B confess their guilty both of them will be given five years imprisonment. Again if none of them confess both of they would be freed. And if one of them is confessed, while the other does not; one who confessed would be freed and the other will be given imprisonment of ten years. Thus, both of them would be benefited if none of them confessed their crime. But as both of them are kept in separate cells; the optimum pay off can be achieved provided they have trust on each other. If they do not have trust on each other the game would finish with sub optimal solution, where both of them would confess and ultimately both would be given imprisonment of five years. Thus due to lack of trust they are not able to achieve the optimum result.

The role of trust in the day to day life can be understood with some other examples. For example, a customer goes to the jewelry shop to purchase some ornaments. The jeweler tells the customer about the price of the ornaments. But, if the customer believes that the jeweler may deceived him by selling low quality gold at higher prices and he wants to reduce the price; the jeweler will incur losses and ultimately he is made to supply low quality gold. Thus, the lack of trust among the customer and the seller leads to collapse of the gold market. But if the jeweler is well known to the customer and they have belief on each other the situation will be different.

Another example of the role of trust can be explained with the working of the Self Help Groups. The Self Help Group- Bank linkage programme in India is the world's single largest micro- finance programme. This programme is becoming immensely popular as an alternative source of rural credit, after the failure of government subsidized credit programmes to make the rural poor free from the grip of money lenders. The distinguishing feature of this programme from the earlier programmes is that under this programme credit is not provided to any individual, rather it is provided to a group of people (or to the individual members of such group); on the condition that even if any one of them fails to repay loan, none of the members will be able to get further loans. It is believed that all the clients will try to form their group with good credit risk (those have good records of repayment). Ultimately bad credit risks will be eliminated from the market. Thus the task of selection of clients is shifted to the groups from the financial institutions and the collective group efforts are recognized as the substitute of physical collateral. In this way the trusts among the members of SHG acts as an alternative for physical collateral and also reduce the transaction cost of the Formal Financial Institutions (FFIs).

2.6.2 Role of Community in Providing Local Public Goods

Community has comparative advantage over the market and the state in the supply of local public goods. Because, the community relationship is effective in preventing free-riders. When residents in one village have agreed to undertake collective work on construction of a country road, a villager's private benefit can be maximized, if he is a free rider. In other words, he uses the road built by other villagers, while not contributing any to the project is violation of the village community's agreement. How close to a social optimum level the supply of local public goods would increase depends, to a large extent, on how strong the trust forged among the people in the community and, hence, how severe the social sanction would be against a violator of the community's agreement. As there is close relationship among the community members and it is possible to monitor each and every member of the society, it is easier to detect the free rider. However, it is very difficult to detect the free rider, if the supplier of public goods is the government.

2.6.3 Community in the Management of Forest Resources

The social networks also have economic values. For example, most of the Tribes in India were originally forest dwellers. But during the British rule in India most of the forest products were nationalized and the existing forest dwellers were excluded from enjoying the benefit they used to have. But in the latter period it was found that the protection of forest resources by the state is both costlier and inefficient. So, in the latter period people lives nearby the forest are also make a part of the forest protection force. This new system to protect the forest is known as the Joint Forest Management (JFM). Under this system the forest dwellers have the right to use some of the products of the forest such as fruits, small branches of trees as fire wood, uses of grasses as grazing field for their cattle etc. Moreover, they are also given some percentage of the final products of the trees. But they are not allowed to cut the trees in the forest. This is nothing but some type of network between the government agencies and the society of the forest dwellers. And finally this system proves to be more efficient to protect forest resources.

2.6.4 Economics Social Norms

Social Norms are equally important in a society. Such norms are generally known as unorganized institutions. Sometimes, these are also termed as the soft social infrastructure. The important role of the social norms in the society can be understood with the help of some example. For example, in some society the social norm is against fishing in the water bodies during the reproduction period of the fish and if somebody does not obey this norm he is punished with heavy penalty. Such norms are helpful in regenerating the fish population in such area.

Again in some agricultural society it so happens that all the members of a village work in the paddy fields of each and every family of that village. Moreover, the farm production of each family is also distributed among all the families. Thus each and every household of the society earns a portion of the product of other household. The benefit of such system is that if there is crop failure of some particular households the cost of such crop failure is shared by all the households of the society. This is some type of risk sharing as is done by the modern insurance companies.

Similarly, in the rural Assamese society till few years back whenever there was excess pressure of work in paddy field during pick season, the cultivator invites the other villagers to help him. The villagers happily help him and on that particular day they are provided special lunch by that particular farmers. Similarly, in some society on the occasion of some ceremony (such as wedding) in a particular family, all the members of society help that family both financially as well as though physical labour. The existence of such norms in the society makes the social life comfortable; otherwise it becomes difficult.

2.6.5 Critical Evaluation of Social Capital Approach in Economic Development:

Thus the community participation (social capital) can play an important role in the economic development of a society. But it is not necessary that all the social norms as well as the social network would be equally important for economic development of a society. Sometimes such rules or norms may be equally harmful for the economy. Moreover, it so happens that the community norms are established over a longer period, but they become more and more rigid over the period. For example, the relation or cooperation among the members of a community may be against the outsiders. In such a situation the community participation may be against innovation and competitive environment. It may restrict the introduction of new technology and products.

Due to these probable reasons (problems) sometimes attempts is made to substitute the role of community by the government activities. But it may not be successful in all times. For example, the shifting of the responsibility of forest management to the government in the age already proved to be inefficient. The ideal situation would be the joint collaboration among the market, state and the community

2.6 Key Words

Goods : the characteristic of a commodity or a service that lends positive satisfaction

Norms : a set of standard or attributes accepted as a bench mark

Market : any place of interaction and interchange of goods and services

Deregulation : doing away with restrictive regulations

2.7 Short Questions

1. What is meant by human resource?
2. In what sense, human capital is different from other capital?
3. What is natural monopoly?
4. What is meant by externality?
5. What is social capital?

2.8 Long Questions

1. How does human capital affect the economic development of a country?
2. How does social trust help in economic development? Explain briefly using prisoner's dilemma.
3. Critically discuss the role of community co-operation in economic development?
4. Critically discuss the role of government in economic development of a country? What are the main points of Washington consensus?
5. Explain, how market mechanism leads to efficient allocation of resources? What are the sources of market failure?
6. What are the factors those affect human capital formation? Is there any relationship between human capital formation and the level of unemployment?

2.9 Suggested Readings:

1. Hayami, Yujiro & Yoshihisa Godo (2009): Development Economics, New Delhi: Oxford University Press.
2. Todaro, M. P. & S. C. Smith (2003): Economic Development, Pearson Education.

UNIT – VIII

ALLOCATION OF RESOURCES AND ECONOMIC DEVELOPMENT

Structure

3.0 Objectives

The learners are expected to acquire the knowledge of criterion and principles on which resource allocation are usually based for economic development.

- Need for investment criteria in developing countries
- Alternative investment criteria: Rate of turnover criterion,
- social marginal productivity criterion,
- marginal per capita reinvestment criterion and time series criterion
- Cost-benefit analysis of projects: Little-Mirrlees.

3.1 Need for Investment Criteria in Developing Countries

Before discussing the need for investment criterion for the developing and underdeveloped countries, here queries arise regarding the meaning of investment criterion. Investment criterion means the criteria or the guidelines according to which the economic planner of a country distributes the total amount of the community's investible funds into different sectors. In other words, the main problem is to distribute the investible funds in the different sectors of the economy.

While deciding about the investment criterion for a developing country, additional care is needed to be taken. Because, the problem of an underdeveloped country is not merely one of assuring sufficient productive investment but also of directing that productive investment in such channels as will provide for the most rapid growth of productive power of national economy. The aggregate volume of investment to be undertaken becomes, meaningful when expressed in terms of concrete investment projects. The programming aspect of investment planning is an important problem of planning in underdeveloped countries. The different objectives of investment criterion are given below:

(a) All-round development of the country.

(b) Balanced and rapid growth of the economy.

(c) To raise the gross national product and per capita income.

(d) Equal distribution of income and wealth.

(e) Proper allocation of existing resources.

(f) Efforts to correct the balance of payment.

(g) To keep watch the interest of the future generation.

The traditional micro-economics theory assumes perfectly competitive market in the economy. And the working of the perfectly competitive market would lead to the efficient allocation of investible resources by equalizing the marginal products of resources in different activities. It would result in maximum utilization of the investible resources. However, the actual situation is somewhat different in the developing countries.

In underdeveloped countries the availability of investible resources are limited compared to their increasing needs. Therefore, the planners have to decide regarding the distribution of resources between industry and agriculture, capital investment and consumer goods industries, public sector and private sector. The flow of investment resources in these different sectors is influenced by political, social and economic factors.

Moreover, the investment criterion should take into account the need of the present as well as future generation. Inter-generational conflicts may arise while deciding an investment criterion.

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.

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.

3.2 Rate of Turnover Criterion:

This criterion is also known as capital turn over criterion or capital intensity criterion. This criterion was put forward by J. J. Polak and N. S. Buchanan. Capital turnover is the increase in output resulting from one-unit investment in a project. In other words, it is the ratio of increased national output to investment made in a project.

$$\text{Capital Turnover} = \Delta Y/I$$

Where, ΔY is the change in national income (output) and I is the volume of investment. Further, I is equal to change in the stock of capital i.e. ΔK.

Thus, this criterion is just reciprocal of the incremental capital output ratio $\Delta K/\Delta Y$. So, this criterion is also known as capital output ratio criteria.

In those countries where capital is scarce, funds should be invested in those projects which have the lowest capital intensity. Most of the developing and underdeveloped countries are capital scarce. Since capital is scarce in underdeveloped countries, those projects should be chosen which yield maximum output per unit of capital invested. 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.

The specific advantages of this criterion are as follows;

(a) By favouring capital light and quick yielding projects, it will increase the production of consumer goods in the short run. This will be helpful in controlling inflation in those countries.

(b) Projects with high turnover are less dependent on heavy machinery, which are needed to be imported. So, those industries do not put pressure on the scarce foreign exchange reserves of the less developed countries.

(c) This criterion advocates for the establishment of the industries with low capital intensity and high labour intensity. It is helpful in ensuring equitable distribution of income.

However, this criterion is not free from criticisms. The rate of turnover criterion has been criticized on the following grounds:

(i) 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 problems.

(ii) This criterion does not take into account the time element. It assumes constant incremental capital output ratio over the life time of the project. However, 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.

(iii) This criterion assumes marginal private benefit of an investment project is equal to that of marginal social benefits. The positive (negative) externalities of a project are not taken into consideration. It is possible that a project may be more capital intensive but it confers important supplementary benefits on the economy (positive externality) which may outweigh its high capital cost. Thus the projects with low capital output ratio have greater importance for developing economy.

(iv) The employment argument in favour of less capital intensive projects may not hold good every day. A more capital-intensive project can also contribute substantially in providing more employment in the long-run.

(v) Labour intensive projects may increase the volume of employment but they tend to reduce productivity. So, capital intensive projects are also equally important for underdeveloped countries if the level of output is to be increased substantially.

(vi) 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.

3.3 Social Marginal Productivity Criterion:

One of the limitations of the capital turnover criterion is that it does not consider the difference between private marginal benefits (costs) and social marginal benefits (costs). The social marginal productivity criterion of investment considers both social and private benefits as well as costs. This theory was put forward by A. E. Kahn and 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 marginal social value.

The social marginal productivity of investment in a project is the average annual increment in national income, including balance of payment effect taken in social context. This implies that the increment in national income is expressed as social value measured in terms of shadow or accounting price of the products produced by the project. Similarly, the payment made to the factors of production and cost of other inputs used in the project are also measured in terms of their shadow prices. Shadow price or accounting price is the price that would prevail in the economy if the market is efficient or perfectly competitive market exists. In the developing and underdeveloped countries, the prices of the factors of production do not indicate their actual price. Because, the cost of labour is artificial kept at a higher level than the actual one (through minimum wage law); and that of capital is kept at a lower level (interest rate regulation). Similarly, foreign currencies are also artificially made relatively cheaper compared to the domestic currency (fixed exchange rate).

Social marginal productivity (SMP) of an investment criterion can be calculated as;

SMP = $\frac{X-E-Mi}{K} - \frac{L+Md+O}{K} + \frac{r(a\mathrm{B}1+B2)}{K}$

Or, SMP= $\frac{V}{K} - \frac{C}{K} + \frac{\mathrm{Br}}{K}$

Or, SMP =$\frac{V-C}{K} + \frac{Br}{K}$

Where,

SMP = Average annual increment in national income from marginal unit of investment in a given productive use;

K = Increment to Capital (Investment in a project),

X = Increased market value of output,

E = Added value of output due to external economies,

Mi = Cost of imported materials.

V = Social value added domestically, (i.e., $V = X+E—M_i$)

L = Labour cost,

Md = Cost of domestic materials,

O = Cost of overheads, including replacement of capital,

C = Total cost of domestic factors (i.e. C= L + Md + O).

α = 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.

Br = Total balance of payments effect = αB1 + B2

r= Average overvaluation of national currency at existing rate of exchange or the premium attached to foreign exchange earnings and savings.

All the variables given above, except B1 and K are annual flows.

In less developed countries foreign exchange is more valuable than domestic currency. So, there is actually a large difference between the actual and official value of foreign exchange. Chenery has expressed the ratio of the difference to the official value as r. A zero r means equilibrium in the balance of payment as well as official and actual value of foreign exchange. A positive r represents the undervaluation of foreign exchange and a deficit in balance of payment. Similarly, negative r represents overvaluation of foreign exchange and surplus in balance of payment.

Thus the social marginal productivity is divided into three elements; i.e.

(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.

Thus, a decrease in the rate of capital turnover may be offset by a proportionate increase in the value margin and vice-versa.

The limitations of this investment criterion are given below:

(a) This criterion does not consider the multiplier impact of investment on income, savings and consumption. It only considers the first round impact.

(b) The concept is vague. It is less definite than the private profit criterion although it is more generally applicable.

(c) 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.

(d) It is difficult to measure the costs of a larger number of items which contribute to the total cost of a project;

(e) 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;

(f) This criterion does not consider structural interdependence and the nature and value of external economies.

(g) SMP criterion helps in the maximization of output that can be attributed to the current investment effort but it does not take into consideration as to what happens to the final product during any period, which in turn, influences the investment rate in future.

3.4 Marginal Per Capita Re-investment Criterion:

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

$r = \frac{p - ew}{c}$ ………………… (i)

Where,

r = rate of reinvestment per unit of capital

p=output per machine,

e=number of workers for machine,

w = real wage rate,

c = cost per machine.

Now, dividing both the denominator and the numerators of both sides by the volume of employment, we have

$r/e = \frac{p/e - ew/e}{c/e}$

Per capita MRQ= $\frac{pc - w}{a}$ ………… (ii)

Where, pc or p/e = Productivity per worker and a= capital intensity per worker.

Thus, per capita MRQ can be defined as the productivity per worker minus consumption per worker to capital per worker. This investment criterion prefers capital intensive projects from the point of view of accelerated rate of growth even where capital is scarce. In the less developed countries population growth rate is higher. So, unless productivity of the workers is increased through application of more capital, output per head would decrease; which ultimately would lead to decline in capital formation.

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.

The main shortcomings of the marginal per capita reinvestment quotient criterion are given below;

(a) 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.

(b) It is against the principle of diminishing 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.

(c) It does not consider the effect of balance of payments on investment. In the under developed countries there is an acute scarcity of capital goods which have to be imported.

(d) 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 for such country.

(e) 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.

(f) Capital deepening of investment does not ensure the best utilization of the available capital resources. It may result in such an inefficient allocation of capital resources that the increase in income may be very small.

(g) Growth rate cannot be maximized by choosing the investment which has higher re-investible profit per unit of capital. Prof. A.K. Sen points out that a mere choice of investment with a higher reinvestment quotient cannot ensure a higher rate of economic growth.

3.5 Time Series Criterion:

This criterion was put forward by M. Dobb and Prof. A.K. Sen. This criterion states that time factor is an important factor in the choice of techniques. According to this criterion the people of any country cannot wait indefinitely to enjoy the benefits of present investment effort in terms of income, consumption and employment. Therefore, a time horizon of investment planning must be adopted. This time horizon depends on the value judgement of the planner which takes into account the capacity of the community to wait to reap the reward of their present investment. But once the time horizon is chosen, the choice of the investment project will depend upon the comparison of total return to the society (measured in terms of total output) from different projects, over a definite time horizon. And that project is selected which gives highest cumulative return over the period of time chosen by the planner.

Table: 8.1

Period (in Years)	Return from Capital Intensive Project (H) (in Million)	Cumulative Return from H (in Million)	Return from Labour Intensive Project (L) (in Million)	Cumulative Return from L (in Million)
1	2.0	2.0	4.5	4.5
2	3.0	5.0	5.0	9.5
3	4.0	9.0	6.0	15.5
4	5.5	14.5	7.0	22.5
5	11.0	25.5	10.0	32.5
6	12.0	37.5	11.0	43.5
7	15.5	53.0	12.0	55.5
8	17.0	70.0	14.5	70.0
9	18.0	88.0	15.0	85.0
10	20.0	108.0	16.0	101.0

The time series criterion of investment can be explained with the help of Table: 8.1. Suppose that there are two projects H and L. Here, H is capital intensive project and L is labour intensive project. The returns of the H project are less in comparison to project L over the first four years, while in the remaining six years the returns of H are more than the project L. The cumulative return from project H is lower than that of L up to 8th period. Thereafter, cumulative return from project H is higher than that of project L. Between H and L, which project will be selected by the planner, depends upon the capacity of the community to wait to enjoy the benefit of the project. If the waiting time is less than 8 years, the labour intensive project will be selected; as up to 8^{th} period cumulative return from the labour intensive project is higher than that from capital intensive project. If the community is ready to wait for more than 8 years to reap the benefit of the project, then the capital intensive project will be selected. If the time horizon is adjectly 8 years, the planner would be indifferent between project H and L.

Nothing is free from criticisms. Accordingly, time series criterion of investment also has some limitations and Sen himself has mentioned about such limitations.

(a) It has arbitrary fixed the time horizon. There is no specific law on the basis of which period of recovery for a particular project can be fixed up.

(b) The return pattern of investment over time depends not only on technique, organization and operation of the project, but also on external economies; and the growth and stagnation in other sectors. It is not taken into consideration by this criterion.

(c) It is not possible to derive the time series for all times to come. Therefore, the planning period has to be definitely fixed but this creates some serious problems. When the time limit is about to end, labour intensive technique might be selected in order to inflate the quality of output and thus capital formation is neglected.

(d) The factors like technological change, wage rate, propensity to consume etc. on which the study of time series depends may all be changing and make the forecasting of future investment.

3.6 Little- Mirrlees Cost Benefit analysis of Projects:

While taking business decisions the private firms being driven mainly by profit motive take into account only the direct effects and do not take the longer and wider view of their activities from the social point of view. But public enterprises and non-profit institutions have to take a broader social repercussion of their resource allocation and investment decisions. That is, they take into account both direct and indirect effects of their business decisions.

An analytical model called **social cost-benefit analysis** is used to analyse the wider impact of resource allocation and investment decisions. Thus in social cost-benefit analysis, we estimate both the direct and indirect costs of a project to the society and both the direct and indirect benefits to it. These indirect costs and indirect benefits are often called externalities. Thus social cost and benefit analysis in addition to the direct costs and benefits take into account the externalities (both positive and negative) of an investment project. According to the social cost-benefit analysis, the actual revenue or receipts from a project do not truly reflect the social benefits from a project nor the expenditure incurred on the inputs valued at market prices used as the true social costs. Besides, in calculation of social costs and benefits, the Government or planner takes into account the external effects (both external economies and diseconomies) of the public investment projects whereas private enterprise will ignore them in its evaluation of a project.

There are no simple rules or steps which government or any public authority should follow to undertake social cost-benefit analysis. Through cost-benefit analysis we seek to find social profitability of a project. The social profitability is judged by the difference between social benefits (both direct and indirect) and social costs (both direct and indirect). The whole process of calculating social profitability or social costs and benefits can be divided into the following four steps:

(a) Specifying Social Objective Function

The first step in making cost-benefit analysis is to specify the social objective function that has to be maximised. In the objective function the weights are to be assigned to different benefits (e.g. increase in per capita consumption, increase, in employment, desired income distribution). These weights will reflect the importance given to the various benefits of the project.

(b) Identifying Various Benefits and Costs

The second step in cost-benefit analysis is to identify and enumerate all benefits and costs, both direct and indirect, of investment projects. The direct benefits of a project can be measured by the extra quantity of goods and services produced if the project is undertaken compared to the conditions without it.

For example, the direct benefit of an irrigation project is the quantity of extra crop produced net of extra costs in the form of more labour, seeds and equipment used as compared to the non-irrigated land. Similarly, direct costs cover capital costs incurred on capital equipment, machines installed, land acquired to undertake and implement the project and the operating and maintenance costs incurred over the life span of the project.

In addition to the direct effects of an investment project, there are invariably indirect or external effects. These indirect or external beneficial effects are classified into two types: real or technological and the pecuniary effects.

The real external benefits may include reduction in costs to be incurred on other Government programmes. For example, the construction of an irrigation dam may lead to reduction in flooding and soil erosion which would reduce the Government outlay on flood control and anti-soil erosion programmes. Such real indirect benefits are counted in cost-benefit studies. On the other hand, indirect (external) pecuniary benefits are not generally included in the enumeration of benefits and costs in a cost-benefit study. These external pecuniary benefits accrue in the form of increased volume of business or increase in land values as a consequence of undertaking a project.

(c) Evaluation of Social Benefits and Costs:

The third step in the social cost-benefit analysis is to measure social values of benefits, that is, outputs (goods and services) produced by the project and social costs of inputs used in the project. For evaluation of outputs of goods and services, their shadow prices (also called accounting prices) are used instead of their market prices. Shadow prices are used to measure social values of outputs since there is divergence of market prices from their true social values. In fact, the greater the divergence between the shadow prices and market prices, the greater the need for social cost-benefit analysis for deciding about public investment.

Similarly, in cost-benefit analysis costs are also measured using shadow prices of inputs or factors used in the project. It is noteworthy that shadow prices of inputs or factors are their opportunity costs or the values foregone by the factors and resources used for the initial capital investment and production during the life period of the project. This is because resources have to be withdrawn from other activities to the implementation of the proposed project. For example, if for undertaking an irrigation project, 50 per cent of required labour is withdrawn from the ranks of unemployed labour force. The social opportunity cost of such labour is zero and ought to be calculated as such in cost-benefit analysis though the workers employed will be paid market wages. The same holds in case of idle land used for a project. With no alternative use, the opportunity cost of idle land is zero. This is so despite the fact that Government has actually to pay compensation to the landowners for acquiring this idle land. This compensation will affect only the distribution of benefits from the project for use of land and not the social cost of the project.

Another important issue in the calculation of social benefits and costs is in what common unit of account (also called numeraire) social benefits and social costs are measured and expressed. It becomes more important when a country has trade relations with other countries of the world and, therefore, needs to sell and buy abroad. This common unit is required to make domestic and foreign goods comparable. In the Little-Mirrlees approach benefits and costs of projects are measured at world prices so that they should depict the opportunity costs of outputs and inputs. The use of world prices for measuring benefits and costs helps in avoiding the use of shadow exchange rate. Further, in Little-Mirrlees approach, instead of consumption, public saving in foreign exchange is used as numeraire.

That is, benefits and costs in this approach are evaluated in terms of foreign exchange equivalent. However, this does not mean that project accounts are kept in foreign currency but only that in the project appraisal report values are recorded in terms of foreign exchange equivalent so as to estimate how much foreign exchange is earned by the project.

(d) Finding Social Discount Rate:

In the cost-benefit analysis the next step is to choose an appropriate social discount rate. Since benefits from an investment project are reaped mostly in the future years and costs are also incurred for a long period in future, it is discounted social benefits and discounted social costs that are compared to decide about the social desirability of a project.

For this a social discount rate is required. The private enterprises in their calculation of commercial profitability market rate of interest are used to discount the future benefits and costs. However, for social profitability of the public sector investment, market rate of interest is not appropriate for discounting future social benefits and costs. The private individuals hope to live only a certain number of years and therefore discount the future at a higher rate which is reflected in the market rate of interest. On the other hand, since the planners or the government in developing countries would like to take a longer view and give greater importance to the consumption and welfare of the future generations, they will use a lower discount rate for discounting a stream of future social benefits and costs, both evaluated using shadow prices.

Finally, it has to be decided whether an investment project should be accepted for investment by the government or rejected. For this a decision criterion is required. The most commonly used criterion is net present value (NPV) criterion. To use this criterion we have to find the net present value of the proposed project by using the following formula-

$$\text{NPV}= \Sigma\left(\frac{Vt-Ct}{1+rt}\right) - K_0 , \qquad \text{where } t= 1,2,3,\ldots\ldots n$$

Where,

V_t = the stream of social benefits measured by using shadow prices of goods produced, C_t = the social cost of inputs measured by their shadow prices (i.e., opportunity costs), r_t = the social rate of discount and

K_o = the social cost of investment in the project.

Now, an investment project is economically profitable from the viewpoint of the society if the net present value (NPV) of the project using social rate of discount is positive (i.e., exceeds zero). In other words, the proposed investment project should be accepted for investment if the present value (PV) of benefits of the project exceeds the social cost of initial capital investment (K_0) of the present. On the other hand, if present value of benefits is less than the present value of costs, the proposed project or investment programme is economically inefficient and should be rejected. Further, it is possible to rank the investment projects based on net social benefit. Investment projects with higher NPV would be given higher rank.

Besides being used to evaluate the economic justification of the entire investment project, the cost-benefit analysis is used to determine whether the size of project under implementation be increased and if so to what extent. Such decision is usually made by using traditional marginal analysis is estimating additional benefits from the proposed increase in size and additional costs to be made.

3.7 Key words

Intergenerational	:	from one generation to another
Criterion	:	principle or standard
Incremental	:	marginal increase/decrease

3.8 Short Questions

1. What is social discount rate?
2. What is the difference between social marginal cost and private marginal cost?
3. What is net present value?
4. Define capital turnover?
5. What are the short comings of social marginal productivity criterion of investment?

3.9 Long Questions

1. What is the necessity of a separate investment criterion for the developing countries? Explain briefly.
2. Explain, Little- Mirrlees social cost benefit analysis criterion of investment.
3. Explain marginal per capita re-investment criterion of investment?
4. Critically discuss time series criterion of investment.
5. Explain briefly, social marginal productivity criterion of investment?

3.10 Suggested Readings

3. Thirlwall, A. P. (2011): Economics of Development, Ninth Edition, Palgrave Macmillan.

UNIT – IV
DEVELOPMENT PLANNING

Structure

4.1 Introduction

Development planning is considered important in developing countries. It is argued that without planning underdevelopment countries are likely to suffer economic retardation due to wastage of resources underdeveloped countries are poor in resources. So they cannot afford to waste their limited resources in unproductive times of production. Therefore, such countries need to divert their resources in the most productive lines of production and which can give them maximum benefits or returns. Hence, they need to formulate proper planning to allocate their scarce resources. This unit discusses the need or rationale for economic planning and various techniques of planning. It also discusses the models of planning in Indian and plan in a market oriented economy.

4.2 Objectives

The objective of this unit is to imform the students about the meaning and importance of development planning. It also aims to introduce various planning techniques and models. These are expected help the students to understand the formulation of planning and allocation of resources in the most productive manner.

9.3 Economic Planning

Economic planning may be described as a deliberate Governmental attempt to coordinate economic decision making over long run and to influence, direct, and some cases even control the level and growth of a nation's principle economic variables – income, consumption, employment, investment, savings, exports, import etc., in order to achieve a predetermined set of development objectives. An economic plan is simply a specific set of quantitative economic targets to be reached in a given period of time.

9.3.1 Rationale for planning in developing economies

Proponents of economic planning having argued that uncontrolled market economy can subject developing countries to economic stagnation, fluctuating prices, and low levels of employment. In such economies, market mechanism does not lead to mobilizing of limited resources in a way that will bring about the structural change necessary to stimulate a sustained and balanced growth of the entire economy. Therefore, planning has come to be accepted and an essential and pivotal means of guiding and accelerating economic growth in almost are developing countries.

Arguments for planning

1. **The market–failure argument:** In LDCs, markets are permeated by imperfections of structure and operation, commodity and factor markets are often badly organized and the of existence of distorted prices often means that producers and consumers are responding to economic signaled and incents that are a poor reflection of the real cost to society of these goods and services, and resources. It is therefore, argued that

government has an important role to play in integrating markets and modifying prices. Market failure also leads to gross disparities between social and private valuations of alternative investment projects. In the absence of government, therefore, market may lead to a misallocation of present and future resources. UNIDO (1970 publications) argued that planning has become an essential and integral part of industrial development programmes because market forces, cannot overcome structural rigidities in the economies of developing countries.

2. **The Resource Mobilization and allocation Argument**: The third world countries cannot afford to waste their limited resources –financial as well as skilled manpower, on unproductive ventures. Investment projects must not be chosen on the basis of partial productivity analysis dictated by individual industrial capital-output ratios but in the content of overall development programme that takes account of external economies, indirect repercussions' and long term objectives. Skilled man power must be utilized where its contribution will be most widely felt. Economic planning can help to restraint influence of limited resources by recognizing the existence of particular constraint and by choosing and coordinating investment projects so as to productive outlets. It is argued that competitive markets will tend direct investment into society low – priority areas.

3. **The Attitudinal or Psychological argument**: It is assumed that a detailed statement of national economic and social objectives in the forms of a specific development plan can have an important attitudinal or psychological impact on diverse and often fragmented populations. It may succeed in rallying the people behind the government in a national campaign to estimate poverty, ignorance and disease. Through planning the government can invite support and cut across class, caste, racial, religious or tribe functions with the plea to all citizens to work together toward building the nation. In this way, the government can best provide the needed incentives to overcome the inhibiting and often decisive forces of sectionalism and traditionalism in a common quest for widespread material and social progress.

4. **The Foreign Aid agreement:** Developing countries face the problem of scarcity of finance resources to increase their land of development. They have to depend on foreign aid to supplement their resources to achieve a higher level of development. It has been argued that the formation of detailed dev elopement plans with specific sectoral output target and carefully designed investment projects are necessary condition for the receipt of foreign aid. Some argued that the developing countries construct development plans, mainly to secure more foreign aid. Thus, the planning is essential in developing countries to persuade the donors that their money will be sued as our essential ingredient in a well conceived and internally constituent plan in action.

4.4 Input-output Analysis

Input-output analysis is a novel technique of planning invented by Wassily W. Leontief in 1951. It is used to analyse inter-industry relationship in order to understand the interdependencies and complexities of the economy and for maintaining equilibrium between supply and demand.

The input-output analysis tells us that these are inter-dependencies in the economic system as a whole. The inputs of one industry are the output of another industries and vice-versa. For example coal is an input for steel industry and steel is an input for coal industry but both are output of their respective industries.

The input-output table provides information to the planners about the amount output which is needed to satisfy the final demand given the inter-industry transactions. Hence, the input-output analysis can be used for economic planning.

Uses of input-output Analysis

The input-output analysis can be used for the following purposes.

1. In all countries which have adopted some kind of planning it is used for achieving consistency in plans.
2. It is used for simulation purpose. Simulation refers to examining of what is economically feasible.
3. It is also used to forecast import requirements.
4. It is used to forecast labour requirements consistent with a given growth target.
5. It can also be used to forecast investment requirements consistent with the given growth target.
6. It is also used to find the strength of linkages between activities in an economy.

Assumptions of input-output Analysing

The input-output analysis is based on the following assumptions.

1. It assumes that there are no joint products. This implies that each industry produces only one product.
2. The economy is divided into two sectors inter-industry sector and final demand sector.
3. The technical progress is static and production functions are subject to constant returns to scale.
4. It is based on the assumption of diminishing returns to a factor. That is as we employ more of a factor in production output increased at a diminishing rate.
5. It is based on assumption of fixed coefficient of production. It analyses that there exists a single process for the production of each commodity and there is not scope to change factor proportion.

4.4.1 Input-output Analysis (closed model)

The closed model of input-output takes into account only the interdependencies between domestic industries. It is applicable to a closed economy where there is no exports and imports. The closed model of input-output can be explained with the help of following input – output table (Table 9.1).

Table 9.1
Input-output Table

Purchase by / Sales by		Intermediate Users industries				Final Demand	Total Demand
		1	2	3	4		
Processing industries	1	X_{21}	X_{22}	X_{23}-------------	X_{2n}	F1	
	2	X_{31}	X_{32}	X_{33} ------------	X_{3n}		X_2
	3	‘	‘	‘	‘		
	‘	‘	‘	‘	‘	F2	X_3
	‘	‘	‘	‘	‘		
	‘	X_{41}	X_{42}	X_{43}-------------	X_{4n}	F3	X_4
	4						
Payments to primary inputs		X_{01}	X_{02}	X_{03} ----------	X_{0n}	F4	X_0

Total Supply		X_1 ---	X_2---	X_3 -------	X_n	F	

The table shows the intra-industry transactions in which industries also use their own output as inputs.

The input-output table highlights three important relationships. First, it shows that the row total of each industry equals its column total which implies that the total output of the industry is equal to the value of the total inputs used.

Secondly, it shows that the total output of an industry is equal to the sum total of its output used as inputs in other industries plus its final demand.

For examples in case of industry 1, its total output is X_1 which is equal to –

$$X_{11} + X_{12} + X_{13} + \text{---} + X_{14} + F_1 = X_1$$

Or

$$\sum_{j=0}^{n} X_{1j} + F_1 = X_1 \quad --- (1)$$

Similar equations can be obtained from the input-output table for all other industries. This equation is known as the balance equation of the input-output model.

Finally, the Column of the input-output table gives the input requirement of each industry to produce the output. For example, industry 1 requires inputs (X_{11}, X_{21}, --- X_{24}) and primary inputs X_{01} to produce X_1 level of output. It can be written in equation from as:

$$X_{11} + X_{21} + X_{31} + \text{---} + X_{41} + X_{01} = X_1$$

Or

$$\sum_{i=1}^{n} X_{i1} + X_{01} = X_1 \quad --- (2)$$

Input coefficients

Input-coefficients show the extent of inter-industry dependencies. Input coefficients can be obtained by dividing each column entry by Column total. Thus, we have,

$$aij \quad = {}^{X_{ij}}\!/_{X_j}$$

Or $x_{ij}= a_{ij}. X_j$

Now, by substituting the values of Xij in equation (b) it can be re-written as

$a_{11} X_1 + a_{12} X_2 + a_{13}X_3 + --- + a_{1n}X_{Xn} + F_1 =X_1$

the general equation for the industry would be –

$$\sum_{i=0}^{n} aijXj + Fi = Xi \quad --- (3)$$

$$Or, \quad Xi - \sum_{j}^{n} aijXj = Fi \quad ----(4)$$

Where Fi is the final demand, Xi is the total output or demand and

$\sum_{j=1}^{n} aijXj$ is the sum of intermediate demand.

Now, for simplicity, let us consider a two –sector economy with just two industries. the equation of the form (4) can be written as follows

$X_1 – a_{11}X_1 – a_{12}X_2 = F_1$

$X_2 – a_{21}X_1 - a_{22}X_2 = F_2$ (5)

For matrix from equation (5) can be written as :

$$\begin{bmatrix} 1-a_{11} & -a_{12} \\ -a_{21} & 1-a_{22} \end{bmatrix} \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} = \begin{bmatrix} F_1 \\ F_2 \end{bmatrix} --- (6)$$

We can also write the system in equation (6) as follows ;

$$\left\{ \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \right\} \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} = \begin{bmatrix} F_1 \\ F_2 \end{bmatrix} --- (7)$$

Where,

$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ *is an identity matrix* (I)

and $\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$ *is the matrix of input coefficients* (A)

The equation (7) may be written in matrix notation as;

$$(I – A) X = F \qquad --- (8)$$

Where, (I – A) is known as the Leontief matrix

$$\text{Thus, } X = (I-A)^{-1}.F \qquad --- (9)$$

The equation (9) shows that one has to find out (I-A)-1 (inverse of the Leontief matrix) to solve for X and F.

4.4.2 Input-output Table (open model)

The open model of the input-output analysis is relevant for the open economics. Nowadays, almost all the countries of the world are open to a greater or less extent. In the open economies imports and exports play an important role in economic development. Both producing and consuming sectors rely on imports to fulfill their requirements. The producing sector imports inputs which are not available in the domestic country or are cheap in foreign countries. So imports are treated as inputs in the input-output table. On the other hand, the producing sector sells output not only in the domestic market but also exports some part of output in the foreign markets. So, exports are treated as foreign final demand in the table.

The input-output model for an open economy can be explained with the help of the following table 9.2.

Table 9.2

	Purchases by	Intermediate Users Industries					Final Demand		
Sales by		**1**	**2**	**3**	**---**	**N**	**Domestic Demand D**	**Exports E**	**Total Demand**
Processing Industries	1	X_{11}	X_{12}	X_{13}	---	X_1	D_1	E_1	X_1
	2	X_{21}	X_{22}	X_{23}	---	X_{2n}	D_2	E_2	X_2
	3	X_{31}	X_{32}	X_{33}	---	X_{3n}	D_3	E_3	X_3
	‘	‘	‘	‘	‘	‘	‘	‘	‘
	‘	‘	‘	‘	‘	‘	‘	‘	‘
	‘	‘	‘	‘	‘	‘	‘	‘	‘
	‘	‘	‘	‘	‘	‘	‘	‘	‘
	n	X_{n1}	X_{n2}	X_{n3}	----	X_{n4}	D_n	E_n	X_n
Payments	Wages	W_1	W_2	W_3	---	W_n	---	---	W
	Rent	R_1	R_2	R_3	---	R_n	---	---	R
	Interest	I_1	I_2	I_3	---	I_n	---	---	I
	Profits	P_1	P_2	P_3	---	P_n	---	---	P
	Imports	M_1	M_2	M_3	---	M_n	---	---	M
Total Supply		X_1	X_2	X_3	---	X_n	D	E	

The table shows the various transactions. In the processing sector X's stand for the value of output X_{ij} denotes sales by industry i to industry j. The disposal of output to final uses is represented by D_i and E_i, where Di represents final demand for output of i^{th} industry from domestic consumers and E_i denotes exports by output of i^{th} industry.

In the payment sectors, the subscript refers to the industry making payment factors of production and the same for imports.

In the processing half of the table, each row shows how the output of each industry is disposed of and each column shows the inputs requirements of each industry. The sum of each row gives the total demand for the output of each industry.

In the payments half of the table, sum of each row gives the value of the various factor payment, and sum of each column gives the total value added to the inputs bought by the different industries.

The rows of the tables give the total output of each industry which is disposed off between intermediate and final uses.

Thus, for industry 1, we have,

$$X_1 = X_{11} + X_{12} + X_{13} \text{ --- } + X_{1n} + (D_1 + E_1)$$

$$Or, \quad X1 = \sum_{j=1}^{n} X_{1j} + (D_1 + E_1) ------(1)$$

But the output of industry 1, must equal the value of inputs used plus the value added to inputs by employing factors of productions to work on them plus imports. Thus, we have,

$$X_1 = X_{11} + X_{21} + X_{31} + \text{---} + X_{n1} + W_1 + R_1$$

$$Or, \quad \mathrm{X1} = \sum_{i=1}^{n} Xi_1 + W_1 + R_1 + I_1 + P_1 + M_1 ------(2)$$

Input Coefficients

Input-coefficients can be obtained by dividing each column entry by the sum for the column. If a_{ij} stands for the input co-efficient, then,

$$aij = {X_{ij}}/{X_j}$$

$$\text{or,} \quad X_{ij} = a_{ij}.X_j \qquad \text{---- (3)}$$

Now, substituting input coefficients in equation (1) we can rewrite it as;

$$X_1 = \sum_{j=1}^{n} a_{1j}.X_j + (D_1 + E_1)$$

$$Or,\ \ X_i = \sum_{j=1}^{n} a_{ij}.X_j + (D_i + E_i)$$

Taking Yi = $D_i + E_i$,

We have,

$$X_i \ = \sum_{j=1}^{n} a_{ij}.X_j + Y_i$$

Now, specifying the final demands,

We have

$$X_1 - \sum_{j=1}^{n} a_{ij}.X_j = Y_i ------(4)$$

Where Yi is the total final demand and Xi is the total output.

Now, taking the case of an economy with just two industries and final demand sector, the equation (4) become:

$X_1 - a_{11}X_1 - a_{12}X_2 = y_1$

$X_2 - a_{21}X_1 - a_{22}X_2 = Y_2$ --- (5)

In the matrix form:

$$\begin{bmatrix} 1 - a_{11} & a_{21} \\ -a_{21} & 1 - a_{22} \end{bmatrix} \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} = \begin{bmatrix} Y_1 \\ Y_2 \end{bmatrix} --- (6)$$

The System in equation (6) may be written as :

$$\left\{ \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \right\} \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} = \begin{bmatrix} Y_1 \\ Y_2 \end{bmatrix} --- (7)$$

In matrix notation, the input – output system in equation (7) may be written as :

$$[I - A]X = Y \qquad \text{------ (8)}$$

Here, (I – A) is called the Leontief matrix.

It follows that:

$$X = (I - A)^{-1} Y \qquad \text{---- (9)}$$

This equation shows that to solve for X and Y we need to find the inverse of Leontief matrix.

4.4.3 Hawkins–Simon Condition

D. Hawkins and H. A. Simon developed a mathematical condition which must be met by any acceptable input-output system. According to them, the solution of input-output equations of a given data yield negative numbers. If it yields negative numbers, it would imply that negative output of some commodities required in order to achieve the final consumption targets.

For example, a negative coal output would mean that more than one ton of coal is used up in the process of production of every ton of coal output. If we have such an unfortunate situation only a negative amount of coal will be left over for consumer's use. This would drain the nation's wealth. According to Hawkins and Simon such a situation should not occur. So, they developed a mathematical condition which is useful as a check on input-output system.

To explain Hawkins – Simon conditions. Let us consider a very simple input-output model with just two industries say steel and coal. In which, neither steel nor coal industry uses up any of its own product. Thus, we have the input-output equations as;

$$S = aC + Ts \qquad ----(1)$$

$$C = bS + Tc \qquad \_\_\_\_\_\_ \,(2)$$

Now, substituting equation (2) in (1)

We get

$$S = a\,(bS + T_c) + T_S$$

$$= abS + aTc + T_s$$

$$Or, (S - abS) = aTc + T_s$$

$$= Or, S(1 - ab) = aTc + T_s$$

For positive final demand, we should have,

$$S(1 - ab) > 0$$

Or, 1-ab>0

Or, ab<1

Or, a<1/b

This is the Hawkins –Simon conditions. If ab>1 or a>1/b, Howkins- Simon conditions are violated.

4.4.4 Samuelson Substitution Theorem

A restrictive assumption of the input-output analysis is the premise that there are fixed technological coefficients – That is factor substitution is not possible, so factor proportion remains unchanged to produce each unit of output (say X man-Gross, Y units of raw material of a given type and so on.)

There is no possibility of any other input proportion. The firm has no choice of using or rejecting, e.g. labour-saving devices.

Prof. Samuelsson has proved that in some circumstances this restriction is not as serious as it appears. He has shown that even where variation of input proportions is possible, it will never be advantageous provided that

1) There are constant returns to scale,
2) There is only one scarce factor (Say Labour)
3) There are no joint products.

In other words, the input-output may be fixed as is assumed, but they will then be fixed by considerations of productive efficiency rather than technological requirement.

For each commodity there will simply exists one most, efficient capital labour ratio and no changes in the hand of output of that commodity will affect this ratio.

With fixed input prices and a linear homogeneous production function it will never pay to change input proportions no matter what the level of output.

Suppose that there is only on scarce input, labour, and nothing else preventing the indefinite expansion of rational output. This means that real cost to society of the manufacture of any output or any other input must be calculated in terms of the amount of labour required to produce it.

The real price of input A will be, say, two man-hours per unit that of input B will be twelve man-hours. With constant returns to scale and unchanged input proportions there labour prices will not change. It follows that any output should always be produced in a manner which uses the same input proportions. The most efficient input proportions will in fact be there which make the smallest drains on the economy’s scarce labour supply. Unfortunately, if there is more than one resource in limited supply, this substitution theorem no longer holds.

4.5 Sectoral Projection in Planning: Plan models in India

The models of planning and sectoral projection are **discussed as under:**

4.5.1 Mahalanobis Model of Planning

The important models of Planning Developed by P C Mahalanobis are; two sector model and four sector model.

Mahalanobis two-sector model

Mahalanobis developed two – sector model of planning in 1953. This model of planning is based on the following assumptions

1. The economy consists of two sectors-capital goods sector and consumer goods sector.
2. The economy is a closed one.
3. There is a full capacity production in both the sector.
4. Investment is determined by the supply of capital goods.
5. The prices are assumed to remain constant.

Given this assumption, the model is explained as follows.

The important parameters of the model are :

$\partial_1 = proportion\ of\ investment\ going\ to\ capital\ goods\ sector$

$\partial_2 = proportion\ of\ investment\ going\ to\ consumer\ goods\ sector$

β_1 = output – capital ratio in capital goods sector.

β_2 = output – capital ratio in consumer goods sector.

Taking,

β – the total productivity coefficient,

$$\beta = \frac{\beta_1\partial_1 + \beta_2\partial_2}{\partial_1 + \partial_2}$$

But $\partial_1 + \partial_2 = 1 -----(1)$

$\beta = \beta_1\partial_1 + \beta_2\partial_2 ----(2)$

The income identity equation for the entire economy is

$Y_t = I_t + C_t$ --- (3)

$\Delta Y_t = \Delta I_t + \Delta C_t$. --- (4)

When National income changes, investment and consumption also changes

But, ΔI_t = $I_t - I_{t-1}$

& ΔC_t = $C_t - C_{t-1}$

Now, the increase in output in the two sectors is related to the linking up of productive capacity of investment and the output-capital ratio.

First, the investment growth path is determined by the productive capacity of investment in the capital goods sectors $(\partial_1 I_t)$ and its output- capital ratio. By and so that,

$$I_t - I_{t-1} = \partial_1\beta_1 I_{t-1}$$

$I_t = I_{t-1} + \partial_1\beta_1 I_{t-1}$

$I_t = (I + \partial_1\beta_1)I_{t-1} --- (5)$

Putting different values for t (t = 1, 2, 3,

The solution of equation (5) are

$I_1 = (I + \partial_1\beta_1)I_o$

$I_2 = (I + \partial_1\beta_1)I_1$

$(I + \partial_1\beta_1)(I + \partial_1\beta_1)I_0$

$= (I + \partial_1\beta_1)^2 I_0$

In the same manner by putting the value of t in equation (5) we get

$I_t = I_0(I + \partial_1\beta_1)^t$

$= (I_t - I_0) = I_0(I + \partial_1\beta_1)^t - I_0$

$(I_t - I_0 = I_0[(I + \partial_1\beta_1)^t - I] - - - - - - -(6)$

Similarly, by putting the value of t (t = 1,2,3,) in the consumption growth path)

$\Delta c_t = C_t - C_{t-1} = \partial_2\beta_2 I_{t-1}$

$C_t - C_0 = \partial_2\beta_2 I_{t-1}$

$C_2 - C_1 = \partial_2\beta_2 I_1$

$C_t - C_0 = \partial_2\beta_2 (I_0 + I_1 + I_2 + \text{--} + I_t)$

Now substituting the values of I1, I2 and …. It in equation (6) and its related equation, the above equation may be solved as

$Ct - C_0 = \partial_2\beta_2 [I_0 + (1 + \partial_2\beta_2) I_0 + (1 + \partial_1\beta_1)^2 I_0 + \text{---} + (1 + \partial_1\beta_1)^t I_0]$

$= \partial_2\beta_2 I_0[1 + (1 + \partial_1\beta_1) + (1 + \partial_1\beta_1)^2 + \text{---} + (1 + \partial_1\beta_1)^t]$

$= \partial_2\beta_2 I_0[\frac{(1+ \partial_1\beta_1)^t - 1}{(1+\partial_1\beta_1)-1}]$

$C_t - C_0 = \partial_2\beta_2 I_0[\frac{(1+ \partial_1\beta_1)^t - 1}{\partial_1\beta_1}]$---------------------------------------(7)

Now, the growth path of income for the whole economy on the basis of equation (4) is

$\Delta Y_t = \Delta I_t + \Delta C_t$

or, $Y_t - Y_0 = (I_t - I_0) + (C_t - C_0)$

By substituting the values of equation (6) and (7) in the above equation 1 we get

$Y_t - Y_0 = (I_0[(I+\partial_1\beta_1)^t - 1] + \partial_2\beta_2 I_0[\frac{(1+\partial_1\beta_1)^t - 1}{\partial_1\beta_1}]$

$= I_0[(I+\partial_1\beta_1)^t - 1] \; [1 + \frac{\partial_2\beta_2}{\partial_1\beta_1}]$

$= I_0 \; [(1+\partial_1\beta_1)^t - 1 \; [\frac{\partial_1\beta_1 + \partial_2\beta_2}{\partial_1\beta_1}]$

Supposing $I_0 = \alpha_0 . Y_0$ and substituting it in the above equation, we have,

A_0= rate of investment in base year

$Y_t - Y_0 = [(1 + \partial_1\beta_1)^t] \left[\frac{\partial_1\beta_1\partial_2\beta_2}{\partial_1\beta_1}\right]$

or, $Y_t = \alpha_0 Y_0 \left[1 + \alpha_{0.} \frac{\partial_1\beta_1\partial_2\beta_2}{\partial_1\beta_1} . \{(1 + \partial_1\beta_1)^t - 1\}\right]$

Where, Y_t = Gross National income in year t.

In this model the total investment consists of two parts, $\partial_1 and \; \partial_2$. $\partial_1 + \partial_{2,} = 1$. The ratio = $\left[\frac{\partial_1\beta_1 + \partial_2\beta_2}{\partial_1\beta_1}\right]$ of the equation is the annual capital coefficient. Assuming

$\beta_1 and\ \beta_2$ to be given the growth rate of income will depend upon α_0 & ∂_2. Further, assuming α_0 to be constant, the growth rate of income depends upon the policy instrument ∂_1.

The expression $(1+\partial_1\beta_1)^t$ of the equation shows that after a critical range of time. The larger the investment in capital goods industries, the larger will be the income generated.

An important policy implication of the model is that for a higher rate of investment in capital goods sector∂_1. The marginal rate of saving must also be higher. A higher rate of investment on capital goods in the short-run would make available a smaller volume of output for consumption, but in the long-run it would lead to higher growth of consumer goods sector.

4.5.2 Mahalanobis Four-Sector Model

Mahalanobis developed this model in 1955. This model became the basis of Indi's second five year plan

Economy consists of four sectors.

1. Sector- 1 : Investment goods sectors
2. Sector -2 : Consumer goods sector
3. Sector -3 : Household sector producing consumer goods
4. Sector-4 : Service producing sector (health, education, etc.)

∂_i = proportion of investment going to i^{th} sector

I = (1 to n)

$$\sum_{i=1}^{n} X_i = 1 --- (1)$$

$\beta_{i=}\ output - capital\ ratio\ of\ i^{th}\ sector$

$\emptyset_i = caital - labour\ ratio$

Let,

A = Total amount of investment to be made during the plan period.

N = Total employment to be generated during the planning period.

E =Income to be generated during the plan period.

Here, A is the instrument variable and N and E are target variable and N and E are target variable.

$A = A_1 + A_2 + A_3 + A_4$ -- -- (2)

N = $N_1 + N_2 + N_3 + N_4$ --- (3)

E = $E_1 + E_2 + E_3 + E_4$ ---- (4)

Then equation shows how much amount of investment is required to generate employment in each sector and how much of employment is to be generated in each sector.

Let us take

N_i = employment to be generated in the i^{th} sector.

$$N_i = \frac{Total\ investment\ in\ the\ i^{th} sector}{Capital - labour\ ratio}$$

$$or, \quad N_i = \frac{\partial_i.A}{\emptyset_i}\ Given\ \emptyset_{i,} higehr\ is\ the\ \partial_i\ higehr\ will\ be\ employment\ generated\ ---$$

(5)

$or, \ \ \partial_i A = \ n_i \emptyset_i$ -----in i^{th} sector--- (6)

A = Total investment $\emptyset_i$ *should be as small as possible*

$$A = \sum_{i=1}^{n} n_i \emptyset_i --- (7)$$

Total employment

$$N = \sum_{i=1}^{n} n_i --- (8)$$

From these equations we can find out income generated in each sector

$$E_i = \left(\frac{Output\ in\ i^{th} sector}{Capital\ in\ i^{th}\ sector}\right)\ X\ Capital\ in\ i^{th}\ Sector$$

$$E_i = \beta_i . \partial_i . A$$

$$E_i = \beta_i . n_i . \emptyset_i$$

$$\therefore E = \sum_{i=1}^{n} \beta_i n_i \emptyset_1 ----- (9)$$

Also, $E = y_o[(1 + \Upsilon)^5 - 1]$

We can find out income generated during the plan period given, Υ and Y_o. β'^s $\emptyset'^s$ and are structural parameters which are determined by technological conditions and assumed to remain consent during the plan period. The ∂^s are the allocation parameters which are determined by the planners.

4.6 The Fifth Plan Model

The final Draft of fifth plan (1974-78) was prepared and launched by D.P. Dhar in the backdrop of economic crisis arising out of run-away inflation fuelled by hike in oil prices and failure of the government took over of the wholesale trade in wheat. When the fifth five year plan was chalked out the world economy was in a troublesome state. This had a negative impact on the India economy. Prices in the energy and food sector sky rocketed and as a consequence inflation became inevitable. Therefore, the priority in the fifth five year plan was given to the food and energy sectors. The Plan laid stress on employment generation, 'removal of poverty' and attainment of self-reliance in agricultural production'. In the later stages the increase in the supply of food grains and the export of minerals and oil reserve earned quite a good amount of foreign exchange to the Indian Economy.

The Minimum Needs Programme (MNP) was introduced in the first year of the Fifth Five-Year Plan (1974-78*)*.The objective or the programme is to provide certain basis minimum needs and thereby improve the living standards of the people.

Promotion of high rate of growth, better distribution of income and significant growth in the domestic rate of savings were seen as key instruments. Due to high inflation, cost calculations for the Plan proved to be completely wrong and the original public sector outlay had to be revised upwards. After promulgation of emergency in 1975, the emphasis shifted to the implementation of Prime Ministers 20 Point Programme. The Fifth Five Year was relegated to the background and when Janta Party came to power in 1978, the Plan was terminated. The target growth rate was 4.4% and the actual growth rate was 4.8%.

Contents of the 5th Five Year Plan

The 5th Five Year Plan was laid out during a crisis period. Hence, the 5th Five Year Plan was designed in a way to meet the needs of the time. The issues that were emphasis were:

- Reducing the discrepancy between the economic developments at the regional, national, international level. It emphasized on putting the economic growth at par with each other.
- Improving the agricultural condition by implementing land reform measures.
- Improving the scope of self-employment through a well-integrated program. Reducing the rate of unemployment both in the urban and the rural sectors. Encouraging growth of the small scale industries,
- Enhancing the import substitution in the spheres including chemicals paper mineral and equipment industries.
- Applying policies pertaining to finance and credit in the industrial sector.
- Stressed on the importance of a labour intensive production technology in India

The Model

The approach to the Fifth Plan considers the removal of poverty and attainment or self-reliance as the two most important objective of the Plan. These objectives are to be achieved through the a redistribution of consumption from the top 30 per cent to the bottom 30 per cent of the population and by a reduction in net foreign aid inflow by the terminal year of the Plan.

The model has three parts: a macro-model for estimating investment an input-output model for estimating sectoral output levels and imports and a consumption model for deriving sectoral consumption levels under alternative assumptions.

The Plan considers 66 sector input-output model. The equation used in the Firth Plan model is as below:

$$\boldsymbol{X_i^1 = \sum_{i=1}^{n} \partial_{ij^1} X_i^1 + C_i^1 + G_i^1 + I_i^1 + E_i^1 + ST_i^1 + M_i^1} \qquad (\boldsymbol{i = 1, 2, 3 \ldots.66\ sctors})$$

Where $\boldsymbol{X_i^1}$ represents total output at factor cost of I sector in period t: C\j/ input coefficient of I sector per unit of sector j. in period t; $\boldsymbol{XC_i^1}$is the private consumption of i sector: $\boldsymbol{G_i^1}$is the public consumption at factor cost; + $\boldsymbol{I_i^1}$ is the total investment goods produced by sector I in period t: $\boldsymbol{E_i^1}$is the export at factor cost of I sector; $\boldsymbol{ST_i^1}$ is the change in stock or sector I in period t: $\boldsymbol{M_i^1}$ is the import of sector I in period t.

The model involves the use of input-output matrix and system of material balance. It was a 66 sector input-output model with consumption sub-model.

In steps one of the model, the gross domestic product at factor cost far the terminal year is estimated by assuming an average annual rate of growth of *5.5* per cent to the base year figure. The gross domestic product at market price was obtained by adding the total indirect taxes. Next the gross investment for the entire plan period was estimated by applying (1 global capital-output ratio to the difference in the GDP at market price between file terminal year and the base year. The yearly gross investment figures at market prices are obtained by choosing an appropriate annual rate of increase to the base period investment which will make them consistent with the aggregate amount of investment derived earlier. Exports and public consumption are exogenously given. If the values of imports and private consumption are known, the estimates of gross domestic savings and net foreign aid can be obtained.

In step two, the annual gross investment is estimated by employing the equation of the macro-model. Import and private consumption are derived by solving simultaneously a set of equations obtained by combining some from the macro-model with some from till' input-output sub-model. The solution of this system of simultaneous equations will provide the value of imports and of aggregate private consumption.

In step three, the aggregate private consumption expenditure is utilized in the final solutions of the model where estimates of sectoral consumption of outputs and imports are obtained. The aggregate private consumption expenditure is divided into expenditure in the rural and urban sectors. The total consumer expenditure of each of these sectors is further allocated among 27 expenditure classes on the basis of the log-normal distribution fitted to the consumer expenditure data obtained through the 22nd Round of the National Sample Survey. The commodity composition of consumption for each of the expenditure classes is obtained by applying base-year consumption proportions to the total expenditure or the respective expenditure class in the terminal year. The total private consumption expenditure on each commodity is then obtained by aggregating the expenditure of all classes on that commodity.

The gross value of output of each commodity/sector can be obtained by solving the equations of the input-output model in which the requirement or a commodity for final use for investment and exports are all specified exogenously. The stock demand is specified by another set of equations which can be combined with the input-output model for the estimation or the gross value of outputs, The estimated gross values of output can in turn be utilized to obtain the sectoral import requirements by solving the import equations,

The salient feature of the Fifth Plan Model is the redistribution or consumption and its impact on removal of poverty and reduction in demand for imports. This novel feature was ignored in similar earlier models. The implications of redistribution 01' consumption from the richer sections to the poorer sections of the community for the growth or sectoral outputs and of imports have been explicitly introduced in the model. The redistribution or consumption is essential not only for 'removal of poverty' but also for attaining self-reliance. The approach paper to the Fifth Plan observes that the reduced inequality in consumption expenditure leads to reduction in total demand for imports as it reduces the demand from affluent sections. Self-reliance also calls for the redistribution of consumption in favour of' the low income groups.

Even though the net effects of redistribution of consumption on import-, appear negligible, it can be argued that when import requirements are disaggregated at the commodity or sector level, the shift from items required for the production or luxury items to items needed for expanding the production of mass consumption would be significant.

In the model investment is estimated through a Harrod-Domar type or equation. The value of the incremental capital-output ratio is taken to be 3.14 for fixed investment rises to 3.42 when inventories are also included. Since the average annual growth rate in GDP is assumed to be *5.5* per cent for all variants, with and without import substitution, incremental output between the base and terminal year will be the same. The value of gross investment also happens to be the same in all the variants. The sectoral composition or investment is also assumed to be invariants with respect to the composition of gross output or magnitude of import substitution.

Conclusion

The Fifth Plan model is very interesting in the sense that for the first time it has demonstrated the implications of redistribution of consumption for the solution to the problem of poverty and to achieve self-reliance. The model has brought out the lack of any obvious relation between redistribution and self-reliance. It shows that import saving is achieved in the preferred variant only by altering a priori import coefficients. However, it is found that consumption sub-model which is described as the most innovative part of the model is probably the most confusing one. Further, it is estimated that a significant reduction in imports is brought about by reducing the import proportion for investment requirements. Since, sectoral investment me exogenously specified, the claim by the approach paper that redistribution of consumption also leads to a decline in import requirements appears unrealistic.

4.7 Plan in a Market Oriented Economy

A market oriented economy can be defined as an economy where the market plays the role of "invisible hand" (Adam Smith-Wealth of Nations. 1776) in producing and distributing resources efficiently in a system. It brings about the highest levels of productive efficiency. The essential feature of the market economy is that what to produce, for whom to produce are all decided by the market forces of demand and supply. There is also a private ownership over the means of production and consumption decisions are taken according to the market forces of demand and supply.

With the fall of the USSR (Union of Soviet Socialist Republics) in 1991, the great belief in the efficacy of the Communist system of government and production and distribution received a body blow. After that many countries began to adopt a market oriented strategy to bring about higher productivity and growth supposedly championed by the United States.

In market economy prices are free to fluctuate in a free market where the forces of demand and supply determine the price level for a particular product. On the other hand, in the planned or socialist economy (Soviet Union) prices are administered by the government.

If there were perfect competition, prices determined by the market forces would *be* unique and the price offered by the consumers would equal the price willing to be charged by producers calculated on the basis or their costs of production for the product. However, the perfect competition situation is not round in a real world system. In reality it either that condition of monopoly or oligopoly exists where the firms make supernormal profit the global response to the free enterprise system has been tepid in many ways, While some countries such as India and China and many Western countries have adopted a mixed economic model where the public and private ownership go hand-in-hand, many countries such as the USA, Singapore and Hong Kong have a relatively more open market system.

According to the "Index of Economic Freedom" created by the Heritage Foundation and the Wall Street Journal , economic freedom can be categorized broadly into the factors such as business freedom, trade freedom, investment freedom, monetary freedom, freedom of Government, labour freedom and freedom from corruption and property rights. Countries achieving the highest degrees of economic freedom have shown high per capita income, high life expectancy; lower in fact mortality and high rates of literacy. These countries have also shown relatively high shares of the Gross Domestic Product (GDP) being allocated to the poorest 10% of the population. The market economy has mainly been found to be successful in the developed countries with high levels of per capita GDP if judged by the index of economic freedom, USA and most of the West European countries fit in this example.

The disconcerting factor of the free market or the laissez-faire economy has been its link with Capitalism. This has mainly been brought about a dimension of social welfare and to accommodate the persons thrown off the system with comparatively low purchasing powers in market oriented economy, mixed economic models undertaken in China and India have been particularly successful. In the mixed economy, while the government or the public sector retains ownership over the strategic sectors of defence and artillery, maintenance of law and order, building of infrastructure and telecommunications, private equity participation is encouraged in some of the sectors. There have been high flows of Foreign Direct investment in various sectors and many infrastructure projects have been funded by foreign equity capital. For example, many special Economic Zones (SEZ's) in both these countries are being built with the help of FDI flows from abroad. As per the private equity participation, private equity in the telecom sector has been permitted up to 74% and 100% in case of India. The shift to a more market oriented economy since the 1990's from a more centrally planned economy before has led to both countries recording record growth rates of about 8% - 9% over the past few years. Another model where both public and private participation is encouraged thereby utilizing the benefits of high growth associated with free market economies is the social market economy model adopted by Germany.

Market oriented economy model is the most efficient model of the economy where we can have high growth rates of the economy coupled with high per capita incomes. With increased FDI flows to the domestic economy, even countries part of the erstwhile Soviet Union and formerly Communist and Socialist economies such as Vietnam have experienced high standards of living in the recent years. Increased FDI flows generally leads to import of sophisticated technology and technical know-how which can lead to higher productive levels in the recipient economies.

However, unless structural challenges such as poverty and illiteracy are addressed in a comprehensive manner in the developing countries such as India and China, the fruits of a free market enterprise with high growth rates and per capita incomes shall only be restricted to a privileged few in a situation of rising income inequalities. Hence, planning is needed to overcome these challenges.

4.8 Let us sum up

Economic planning is important in developing countries as it helps them to allocate resources in proper way. Underdeveloped countries do not have sufficient resources, so they cannot effort to waste their limited resources in unproductive ventures. Such countries cannot rely on market system for resource allocation as markets in these countries are characterised by imperfection. The planning helps them to identify the priority sectors and areas and allocate resources efficiently. Input-output technique is a technique of planning which basically focuses on the interdependencies among the various industries and thus help in achieving consistency and economic feasibility. Mahalanobis model shows how the planners can promote economic development by changing the allocation of resources. The market oriented economy also needs planning to overcome certain problems caused by the market.

4.9 Key terms:

Planning:	It refers to the systematic allocation of resources to achieve a set of targets within a given period of time.
Simulation:	It is the study of economic feasibility of a particular activity.
Market failure:	It refers to a situation when the market can not function properly to allocate resources efficiently.
Stagnation:	It is situation in which the level of income of an economy remains constant.

4.10 Long Questions

1. What is economic planning? Discuss the rationale for economic planning developing economies.
2. What is input output analysis? What are its uses and assumptions?
3. Explain the input-output model for a closed economy.
4. Explain the input-output model for an open economy.
5. Examine the Fifty Plan model of India.
6. What is market oriented economy? Why does it need planning?
7. Evaluate Mahalanobis model of planning.

4.11 Further/Suggested Readings

Thirwal, A.P, Gowth and Development, Macmillan, London

Todaro, M.P, Economic Development, Longman London.

Jhingan, M.L., The Economics of Development and planning.

Krishnan, J.N., the Fifth Five Year plan mode, EPW Aug, 1973.

UNIT V
TRADE AND POLITICAL ECONOMY OF DEVELOPMENT

Structure

5.1 Introduction

These units deal with the trade strategies of development. It also discusses the model of rent seeking society and impact of institution on economic development. In the last few decades, there has been rapid growth of foreign investment in various countries. So, it also discusses the role of foreign investment and foreign aid in economic development.

5.2 Objective

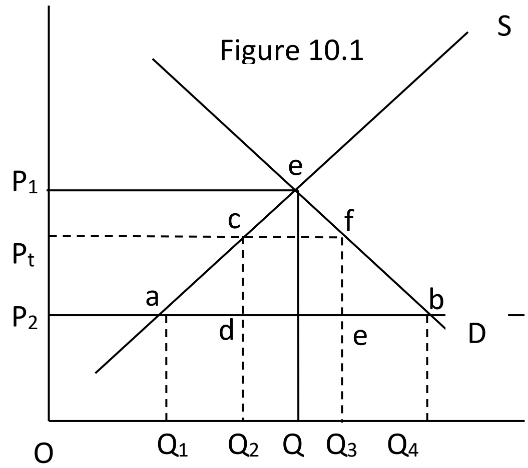
The objective of this unit is to impart the knowledge of trade strategies and development. It also aims acquaint the students about the importance of foreign capital.

5.3 Import substitution and export led growth

There are two trade strategies of development. They are import substitution and export promotion. These trade strategies of development are discussed as follows:

5.3.1 Import substitution strategy

The advocates of import substitution strategy of development believe that underdeveloped country should initially substitute domestic production of imported simple consumer goods and then substitute through domestic production for a wide range of more sophisticated manufacture items. The idea is that infant industry should be protected by imposing high tariff and quotes in imports. When the country, achieves economies of scale and low costs of production, it should start exporting those goods.



Import substitution strategy entries, an attempt to replace commodities that are being import with domestic source of production and supply. This can be done by restricting imports by imposing high tariffs and quotas. Import – substituting industries will achieve economies of scale after certain period. Infant industry will grow and be able to compete in world markets. It will then generate met export earnings.

A principle mechanism of import substitution is erection of tariff walls or quotas, behind which are industries are allowed to operate. The economic rationale is –infant industry protection with enough time and protection, infant industry will eventually grow up and be competitive with the developed countries producers and therefore no longer need protection.

The theory of import substitution can be explained as;

If there is no trade, equilibrium will take place at e, with Q, domestic demand and supply at P_1 price. If the economy opens, it face world price P_2. At P_2 price domestic demand is Q_4 but supply is Q_1, so import is Q_1Q_4. Domestic consumers get benefit from lower price of imports while domestic producer and employees will lose.

This import results in loss of domestic production and jobs as a result of free trade.

Now, let the country imposed tariff to protect infant industries. Let to be the rate of tariff which causes the domestic price o f importable goods to rise to P_2 to P_t,

$$P_t = P_2 (1+ t_o).\ P_t > P_2$$

As a result demand falls to Q_3. Domestic producer can now expand production up to Q_2 fromQ_1. The area 'cdef' the tariff revenue clearly the higher the tariff, the closer will be the sum of the world price plus important to the domestic price. However, the consumer's surplus decreases and producer's surplus increases.

Thus, tariff redistributes income from consumers to produces. In the long-run, advocates of IS protection for LDC infant industries argue that everyone will benefit as domestic manufacturers achieve scale of production, lower cost etc. Production will take place for both domestic and foreign market. It all grounds, very logical and persuasive theory.

However, the import substitution strategy does not allow the country to participate in the world trade and expand market for its products. So, its popularity has declined with the opening up of economies of the world.

5.3.2 Export–led Growth Strategy

The export promotion strategy is a very important strategy for development in LDCs. The promotions of LDC exports, either primary, secondary, has been considered a major development strategy. Some neoclassical has assigned to much important role to foreign trade that they called foreign trade as engine of growth. The export promotion strategy can be very beneficially used by the LDCs. This strategy can help them to overcome the problem of limited size of market. The LDCs can specialize in the production of labour intensive primary products in which they have comparative advantage. It gains from trade and there is increase in National income and employment. Thus, higher level of output through trade tends to promote economies development.

One of the obstacle to development in LDCs in small size of domestic which leads to how inducement to invests. Export promotion measures and international trade widens market for the products LDCs and increases inducement to invest and official allocation sources.

According to vent for surplus theory international trade increases possibility of vent for surplus in LDCs, into LDCs land and resources are underutilized. Trade can help to produce surplus of primary products in exchange for manufactured products.

Before trade or country is producing and consuming OX_1 if primary product. AB is the PP curve, with opening up of foreign trade E moves to D. Production increases to OX_2.

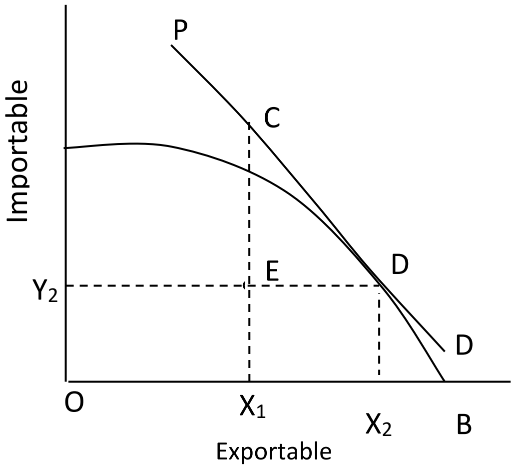


Figure 10.2

So, ED of x in exchanged for EC of M. Many cost Asian economies like Korea, Taiwan, Singapore, and Hong Kong succeed in accelerating their economic development by adopting employment promotion measures (1960s) EP.

The advocates of exports promotion measures cite the efficiency and growth benefits of free trade, importance of substituting large world markets for narrow domestic markets, etc.

The LDCs mainly rely on primary products which constitute 70% of their exports earnings. They have great advantage in producing and exporting p products. The export promotion strategy can help to widen the size of market and theory increased export earnings to LDCs.

But there are various factors affecting demand and supply of primary products.

On the demand side there are factors which work against the rapid expansion of third world primary product, export to developed countries.

They are –

1. The income elasticities of demand for primary products (food stuff) are relatively low compared with the manufacturers, fuel, etc. less than 0.5.
2. Developed country population growth rates are now at near the replacement level so that little expansion can be expected from this source.

3. Development of synthetic substitutes and growth of agricultural protection in developed countries. These are perhaps the most important factors working against the LDCs exports of primary products. The synthetic share of world market export has increased and share of natural product has fallen.

The common agricultural policy of EEC, is much more discriminatory against LDC exports.

On the supply, side, factors include inelasticities of supply due to structural rigidities, non-productive land tenure system, poor climate, socio-economic structures, low productivity, uneconomic holding, population pressure etc.

We may conclude that successful promotion of primary product exports cannot occur unless there is reorganization of rural society and economic structures to raise total agricultural productivity and distribute the benefits more widely.

Expanding exports of manufactured goods

The expansion manufactured exports, has been given great stimulus by the spectacular export performance of countries like South Korea, Taiwan, Hong Kong, Singapore etc. Their success has given impetus to argument that LDCs economic growth is best served by allowing free market forces and opening to trade.

The demand problem faced by the manufactured exports of LDCs is the same as those faced by primary product.

Methods of export promotion

i. Reduce import duties or import quotas for exports – one of the main ways in which exports are presented is by making the imported materials needed for manufacture of exports relatively easy to obtain. Exports are often permitted to obtain needed imports at lower rates.

ii. Preferential credit – lack of plentiful credit can impede expansion and innovation Bank are often directed to provide credit on easier terms to those firms who export products lower interest rates or a larger loan size.

iii. Export subsidies – To promote exports subsidies are given to exporters. Instrument of export promotion – the export subsidy

The export subsidy:

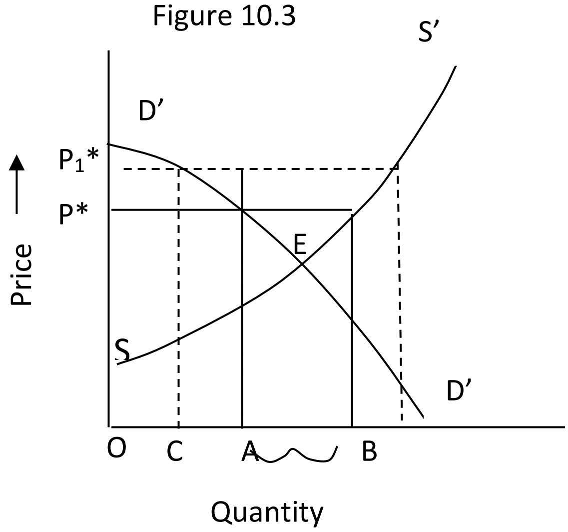
Domestic Demand and supply curve for some product. Initially, international price of the product is P*. Domestic Sale = OA

Supply = OB

Export = AB exported

Now, suppose that the government wishes to promote export of his commodity by an advalorem subsidy – i.e. payment of 5% of the export price for every unit of goods that is exported. This shifts the international price for the producer up to P* (I+s/100) = P*

Figure 10.3



The production of the commodity will be stimulated OD, but the domestic sales will come down – to OC, Exported = CD

Clearly CD> AB means export is promoted. This happens if there is no change in exchange rate or international prices.

But increased export might lead to fall in international price of that goods as greater supplies arrive and on the market prize may fall to P**. So that at the new equilibrium the international price falls while the domestic price rises.

If the international price does not fall at all or fall by very little, the export subsidy will lead to an increase in export revenue at the going exchange rate. The supply of dollar curve shift to the right and exchange rate may be appreciated (domestic currency appreciate).

In contrast, if international price falls significantly, as a result of export derive revenues may even fall. This may lead to a depreciation of the exchange rate.

The effectiveness of the policy depend on the elasticity of demand for exports of home country. If the elasticity is high, then prices will not fall much as the greater quantity of exports gets absorbed in the other countries. But if elasticity is, low the reduction will fall significantly and the policy of export subsidy will be ineffective.

Thus, export promotion can be an important strategy for economic development in developing countries. However, it is found that these are numerous challenges for promoting exports from the underdeveloped countries. Therefore, the underdeveloped countries need to diversity their products and adopt new technology to produce different products in a cost effective way. This will help them to expand exports and realize greater benefit from international trade.

5.4 Krueger's Model of Rent seeking society

Anne O. Krueger developed a model of rent seeking society in her article, the political economy of the Rent seeking society in 1974.

Krueger argues that government restriction upon economic activities create rent which give rise to rent seeking behavior and competition for rent. The most important way in which governments create rents is by issuing licenses permit to engage in various forms of economic activities. For example, import license to import and pursuit to make an investment by building a factory. Such licenses have no alternative use so whole of the returns earned by their holdings are rents.

Krueger has used the concept of economic rent in her model which is defined as the excess of return on an asset over and above returns in its next alternative use. She developed a simple model of competitive rent seeking for the important case when rents originate from quantitative rest notions upon international trade.

Krueger has concentrated mainly on rents and the rent seeking behavior generated by the issue of import licensed. When the government imposes restriction on imports by imposing import quotes it creates rent by restricting economic activity. As a result import license becomes a valuable commodity. This give rise to competition for obtaining imports license because it yields rent. Krueger argued that the competition for rent seeking may take various forms; Legal or illegal. According to her rent seeking activities are often competitive and resources are devoted to competing for rents.

The cost of legal means for rent seeking include proper works, time spend by entrepreneurs in obtaining their licenses, travel cost, locating firms in the capital. The illegal means for rent seeking include bribery, hiring relatives of official or employing the official themselves on retirement.

In the former case, competition occurs through choice of location, expenditure of resources upon travel and so on. In the later cases, government official themselves receive part of the rents.

Krueger showed that quantitative restrictions on import creates rent and generates competition for rent seeking. In such a case;

a. Competitive rent seeking leads to the operation of the economy inside its transformation came.
b. Welfare loss associated with quantitative restriction is unequivocally greater than the less from the tariff equivalent of those quantitative restrictions, and
c. Competitive rent seeking results in a divergence between the private and social cost of certain activities.

The model has particular applicability to developing countries.

The government restrictions give rise to rents of variety of forms and people often compete for the rents. Sometimes such competition is perfectly legal. In other instance rent – seeking takes other forms such as bribery, corruption, smuggling and blank markets.

The welfare effect of an import quota and total rents obtained by holders of import licenses are shown in the figure.

Q & S are domestic demand and supply causes of internationally trade able commodity. In the absence of international trade domestic market clears at point a with price O point as O suppose that the country opens up its economy so that it can import the commodity at Pw price. Since Pw < pa, in the absence of any government intervention, the domestic consumers purchase Dt units of the commodity. The domestic supply at pw price is only Sf, so mf (Sf-Df) units of demand is satisfied by imports.

Welfare loss from tariff n equivalent quotas

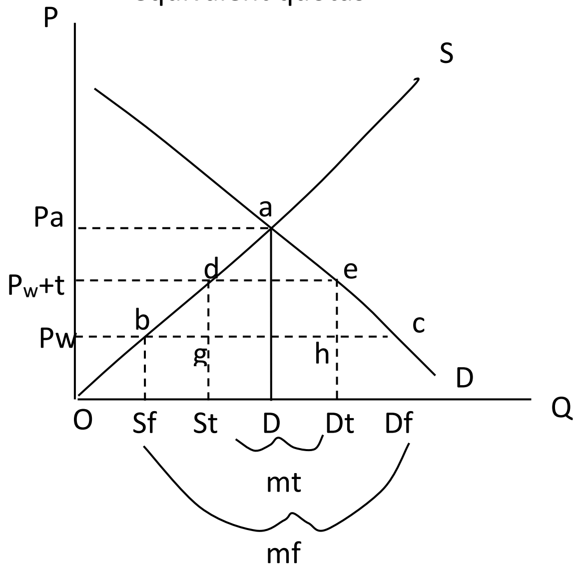


Figure 10.4

The free trade increases consumer surplus by the amount equal to the area, a c pw pa, and decreases producer's surplus by a b pw pa. So the national gain from international trade is given by the sum of the changes in producer surplus and to consumer surplus.

This is equal to ---

acpwpa – abpwpa = abc

Now suppose that the government imposes tariff t per unit of imports. The domestic price of the import able will rise to pt = (pw + t). As a result demand falls to Dt but domestic supply rises to St, and volume of imports falls to mt (St-Dt). The Gains from trade declines from abc trade.

Tariff revenue = t x Mt =gdeh.

The net loss in nation welfare from the tariff policy is given by the triangles bdg and ceh which are sometimes known as deadweight loss.

Let us suppose that instead of imposing tariff, the government imposes a quota that limits imports to Mt. (equivalent to tariff t). This creates excess domestic demand at pw price. As a result price rises to (p_w+t), at which demand for import equals supply mt. But holders of the import licenses earn rent equal to t per unit. They can purchase at Pw price and sell at P_w+t price. The total amount of rent is exactly equal to tariff revenue i.e. segh.

The net loss in nation welfare is the same whether the government imposes a tariff t or a quota Mt. these are sometimes called equivalent policies.

But Krueger argued that both are not the same. The quantitative restriction such as import quotas creates rent and generates competition for rent seeking Rent seeking is always competitive and resources are devoted to rent seeking. It resources are devoted to competing for quota licenses then, welfare loss from the quota policy will exceed the welfare loss from tariff policy. Krueger argued that resources are always wasted in rent seeking activities. According to her competition for rent seeking may take the form of large scale corruption which may be the most damaging to economic development.

5.5 Institution and Development: Contribution of Stephen Knock and Philip Keefer

In the recent years many development and growth economists view good governance as a pre-requisite to sustained increases in living standard and economic growth. According to them, difference between developmental success and failure has little to do with natural resources availability climate, foreign aid or luck. It is largely a function of the type of institutions.

The importance of good governance for growth gradually gained adherents over the 1980s and 1990s, following several decades in which development failures are attributed successively to capital shortages, low education, and policy distributions, with little attention denoted to the political and institutional sources of these problems. Reynolds in his study of long term economic growth in 40 non-industrialized nations from 1850 to 1950, conjectured that the single most important explanatory variable was political organization and the administration of government.

However, it is very difficult to measure political and social institutions and quality of Governance. Despite these measurement difficulties numerous studies have analysed the impact of institutions and the quality of governance on economic performance.

Stephen Knack and Philip Keefer in their article, “Institution and Economic performance: Cross Country Tests using Alternative institutional measures, 1995, have analysed the impact of institution and quality of governance on economic performance. In their studies they used data by two private international risk assessment firms of services, viz (1) International Country Risk Guide (ICRG) and (2) Business Environment Risk Intelligence (BERI).

The first observations that these services have for any country are for BERI the vast majority of observations are from 1972 and for ICRG nearly all observations are from 1982.

From the ICRG they constructed an index from the five indicators which have greatest relevance to the security of private property and the enforceability of contract. These indicators are – (1) corruption in government (2) Repute of law (3) Expropriation risk (4) Repudiation of contracts and (5) Quality of the Bureaucracy.

The corruption in government and quality of bureaucracy are taken as ponies for the general efficiency with which Government services are provided. When a country scores poorly low on these dimensions, it is a strong indication that a bureaucracy lacks procedural clarity or technical competence and likely to introduce criteria other than efficiency into the determination of government policies and the allocation of public goods.

In addition bureaucracies where corruption is higher and competence is low are less likely to provide strong bulwark against infringements on property rights. These results in distortions in investment and trade which may reduce the quantity and efficiency of capital investment and foreign technology introduced in the country.

Expropriation Risk and the rule of low are used a ponies for the security of private property and to contract rights. A country scoring low as these dimensions is likely to suffer a reduction in the quantity and efficiency of physical and perhaps even human capital investment. This disclosure rages investment.

Repudiation of contracts by government is another indicator of contract enforcement. It is also an indicator of government credibility.

From BERI, they constructed similar index from the four variables or indicators. They are – (1) contract enforceability, (2) Nationalization Risk, (3) Bureaucratic Delays and (4) Infrastructural quality.

The variable infrastructural quality allows some approximation to be made to the efficiency with which governments allocate public goods.

The five ICRG variables and four BERI variables have been aggregated to from an ICRG index (ICRG82) and a BERI index (BERI72) of the security of contractual and property rights. Higher values of ICRG and BERI indices indicate better, conditions for investment.

The Growth Equation

Barro (1991) constructed growth regression to compare the effects of political violence and institutional indicators on growth.

$$GR6085 = \alpha + \beta_1 GDP60 + B_2SEC60 + P_3PRIM60 + \beta_4GOVCONS + \beta 5REVCOUP + \beta 6ASSA80 + \beta 2\ PPI60\ DEV + \sum ei \qquad \text{--- (1)}$$

Here, growth is a function of initial GDP, Secondary ad primary school enrollment in 1960. The percent of government consumption in GDP, frequencies of revolutions and assassinations and the magnitude of the deviation of the summers and Hesston investment deflator (US = 100) from the sample mean.

Unlike Bano, they focus in the growth over the period 1974-1984 and use the first available observation for each country for their institutional indicators, 1982 for ICRG and 1972 for BERI for most countries.

Adding the ICRG index to a Barro-type growth regression, Knock and Keefer find that a standard-deviation increase in index increases the annual rate of growth in per capita income by 1.2 percentage points on average. Substituting the BERI index for the ICRG index produces a similar association with growth. These induces particularly BERI prove to have strong explanatory power for private investment also.

BERI and ICRG indictors have been the most widely used governance indictors in the cross country empirical literature because of their much better cross country coverage.

5.6 Foreign Direct Investment, Institutional Investment and Development

Foreign capital can enter in a country in the form of –

1. Private foreign capital -
   (a) Foreign Direct Investment (FDI)
   (b) Institutional investment or portfolio investment
2. Public foreign Capital -
   (a) Bilateral hard loans or foreign aid (in dollars)
   (b) Bilateral soft loans – items sold for payment in local currency.
   (c) Multilateral loans- i.e. contribution to the Aid India club by the member countries. Also include loans made available by the various agencies like World Bank, IFC UND etc.
   (d) Inter government grants in case or kind. All official grants and concessional loan-low interest rates.

Foreign Direct Investment: It means the concerns of the investing country exercise defunct control over the assets created in the capital importing country by means of that investment. It may take the form of formation of a subsidiary (joint nature) of a company of the investing country in the capital importing country. Such company or consumers are known as MNCS or TNCs. Dunning (1993) stated that FDI involves the transfer of resources viz. technology management, organizational and marketing skills etc. from a foreign country to the host country.

According to IMF, FDI is that category of investment that reflects the objective of obtaining a lasting interest by a resident entity in one economy in an enterprise resident in another economy. The 'lasting interest' implies the existence of long-term relationship between the direct investor and the enterprise and a big degree of influence by the investor in the management of the enterprise.

ACC to European law, foreign invest is labeled as FDI when the investor buy's more than 10% voting power of the investee company and portfolio investment, when the acquired stake is less than 10%.

Institutional/Portfolio Investment - It consist mainly of the holding of transferable securities (issued or guaranteed by the government of the capital importing country), shares or debentures of the companies of home country by the firm or nationals of foreign countries. Four holdings also not amount to a right to control the company. The share holders are entitled to the dividend only. Multilateral indirect investments have also evolved in recent years – purchase of bonds of the World Bank floated for financing a particular project in some LDCs.

5.6.1 Foreign Direct Investment and Economic Development

Foreign direct investment plays a very important role in economic development of underdeveloped countries. The main problem of underdeveloped countries is the scarcity of resources. But they need to invest large amount to build up infrastructure and promote development. Therefore, they need foreign capital to fill the gap between saving and investment, to obtain new technology, generate employment and so on. The role of FDI in underdeveloped countries can be discussed under the merits of FDI which are as follows;

Merits of FDI

The FDI has numerous merits for underdeveloped countries;

1. It provides finance, managerial, administrative and technical personnel, new technology and technique of production to underdeveloped countries which are in short supply in these countries.
2. It also encourages local enterprises to invest more in ancillary industries or in collaboration with foreign enterprises.
3. It brings capital and foreign exchange in underdeveloped countries and helps to fill up savings gap and foreign exchange gaps and thus help to promote economic development in such countries.

4. A part of the profits from FDI is given ploughed back into the expansion, modernize or development of related industries.
5. FDI adds more value added to output in the recipient country than the return capital in this sense, the social returns are greater than the punt returns on forest investment.
6. FDI also brings revenue to the Government of an LDC when it taxes of profits of foreign firms or gets royalties.
7. It helps in raising productivity and the real wages of local labour.
8. FDI also places less burden on the BOP of an LDCs in the early stages of development, if FDI flows mainly into agriculture and extract industries which produce primary goods for exports, it further help in earning the BOP position of LDCS.
9. Lastly, it flowing into a developing country also encourages its entrepreneurs to invest in other LDCs. Firms in India have started investing in Nepal, Uganda, Ethiopia and Kenya and other LDCs while they are still borrowing from abroad.
10. It increases income and employment opportunities to the people of capital importing underdeveloped countries and thus helps to ease the problem of unemployment.

Demerits of FDI

1. The recipient country needs to provide basic facilities. Such facilities and concessions involve cost in absorbing LDCs resources that could be utilized elsewhere by the government.
2. To attract, FDI, LDCs have to provide sufficient facilities for transferring profits, dividends, interest and principal. If these payment lend to net capital outflow, they creates serious BOP problem.
3. No doubt, FDI increases income, employment and savings in LDCs, but it adversely affects income distribution.
4. Many MNCs in LDCs, reserves all senior executive posts for their national and train local nationals for lower and middle level ports having little independent decision making.
5. It brings in highly capital intensive technologies which do not fit in the factor propositions of LDCs. Often obsolete and discarded technologies are imported which involve high social cost.

6. It also involves costs in the forms of a loss of domestic autonomy when foreign firms interfere in policy-making decisions of the government of an LDC which favour the foreign firms by rules.

5.6.2 Foreign aid and Economic Development

Foreign aid refers to public foreign capital received by underdeveloped countries either in cash or kind from the foreign governments or from multilateral agencies like World Bank. Underdeveloped countries suffer from the scarcity of resources. They need to invest huge amount for promoting economic development. But the mobilization of resources from the domestic source often falls short of the requirement. Hence, they need the help of the foreign capital. The private foreign investment inflow in underdeveloped countries requires existence of basic facilities which are short in supply. So, it is very difficult to attract private foreign capital which only flow to those countries which have sufficient basic facilities for investment and ensure high rate of returns.

Therefore, public foreign capital or foreign aid can play an important role in promoting level of investment and economic development is underdeveloped countries. Foreign aid is important because it can be used by the recipient country in accordance with its development programmes.

The foreign aid flows to underdeveloped countries in various forms such as loans, assistance and grants from governmental and international organizations. At the same time, foreign aid may be tied or untied. In the case of tied aid, foreign aids are made available to underdeveloped countries, for undertaking particular projects. It can also be country tied in which the aid recipient country is required to import materials for the project from the donor country. Untied aids are made available to the underdeveloped countries for general purpose. In case of untied aid, the recipient country is free to decide about its use in various projects.

Foreign aid helps to promote economic development in underdeveloped countries in the following ways;

1. The underdeveloped countries are poor in capital. So, they have low savings and are unable to make required investment the foreign aid help to reduce this constraint by

providing the government with much needed financial resources and raises the rate of capital formation.

2. Underdeveloped countries also suffer from technological backwardness. This is reflected in high average cost of production and low labour productivity. It is also reflected in high capital output ratio. The foreign capital brings technical know-how, skilled personnel, managerial skills, advance production techniques. This helps underdeveloped countries to improve its level of technology and promote economic development.
3. Underdeveloped countries do not have sufficient economic overhead capital which directly facilitates investment. These countries need to build up roads, rails, power plants which require huge investment. The foreign and helps the underdeveloped countries to build up their economic overhead capital.
4. Underdeveloped countries need to investment large amount to industrialize their economy. However, they do not have sufficient resource. In this case, foreign aid help the country to make requisite investment and promote industrialization of the economy.
5. In underdeveloped countries private investors are not willing to invest in risky projects, like exploitation of untapped natural resources. Foreign aid and capital undertakes all risks and invest in such risky project to exploit resources which help to promote economic development. It also helps in removing regional imbalances.
6. The foreign aid also provides social gains to underdeveloped countries because it creates employment opportunities in urban areas which absorbs surplus labour from the rural areas and reduces pressure on land.
7. The foreign aid also tends to raise labour productivity in underdeveloped countries and thereby raises income and employment, which in turn increases real wages of labour.
8. Foreign aid also helps in improving the provision of basic facilities such as health, education, sanitation and help to build up human capital. The foreign aid contributes significantly to the social sector budget in underdeveloped countries.
9. Underdeveloped countries often suffers from inflationary pressures due to existence of structural rigidities which keeps the supply of food below the demand from the growing population foreign aid helps to reduce inflationary pressure as it increases the supply of food and other essential consumers goods.

10. Foreign and also help underdeveloped countries to overcome balance of payment problems. Underdeveloped countries need to import capital goods to accelerate the pace of development. But their exports consist of mainly primary products which priced low in the international market. So a gap between import and exports developed which causes balance of payment problems. The foreign capital or aid helps underdeveloped countries to get capital goods and reduce the balance of payment problems.

Thus, it can be concluded that foreign aid is very important for accelerating economic development in underdeveloped countries. It helps them to fill up the saving and investment gap and promote capital promotion. It contributes in industrialization and also helps in building up social and economic overhead capital. It brings in new technology, raises labour productivity and creates income and employment opportunities. It also undertakes risky projects and helps to tap and exploits untapped natural resources like, hydropower. Further, it reduces inflationary pressure and balance of payment difficulties in underdeveloped countries. Thus, foreign aid is very important for economic development of underdeveloped countries.

5.7 Let Us Sum Up

The underdeveloped countries have a number of challenges for economic development. However, there are many strategies for promoting economic development. They can promote development by adopting suitable trade strategies of development. During the 1950s and 1960s, important substitution had been the dominant trade strategy among the underdeveloped countries. But during 1970s and onwards, export promotion became popular among these countries which calls exporting of their products to vast international market. The underdeveloped countries also suffer from corruption and poor institutions. The impacts of these problems have also been discussed in this unit. The investment needs of the underdeveloped countries are large but they do not have sufficient capital to undertake such investment. Therefore, they have to rely on foreign capital to promote economic development.

5.8 Key Terms

Infant industry:	It refers to the domestic industries which produces import substitute goods.
Quantitative restrictions:	It is the restrictions placed on the amount of a product that can be imported into a country.
Economic rent:	It is the earnings of a factor over and above its transfer earnings.

5.9 Questions

1. Compare import substitutions and export led growth strategies of development.
2. Discuss the effect of rent seeking activity on economic development in the light of Krueger's model.
3. Examine the role of institutions in economic development.
4. What is foreign direct investment? How does it promote economic development in developing countries? Explain.
5. Discuss the role of foreign aid in economic development of developing countries.

5.10 Further/Suggested Reading

Ray, D., *Development Economics*, Oxford University Press.

Mier, G., *Leading Issues in Economic Development*.

Todaro, M.P., *Economic Development*, Longman, London

Jhingan, M.L., *The Economics of Development and planning*, Vrinda Publication.

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