Chapter Two: Growth Models and Theories of Development

2.1. Growth Models –Harod Domar

The **Harrod–Domar model** is a Keynesian model of economic growth. It is used in development economics to explain an economy's growth rate in terms of the level of saving and of capital. It suggests that there is no natural reason for an economy to have balanced growth. The model was developed independently by Roy F. Harrod in 1939, and Evsey Domar in 1946, although a similar model had been proposed by Gustav Cassel in 1924. The Harrod–Domar model was the precursor to the exogenous growth model.

Neoclassical economists claimed shortcomings in the Harrod–Domar model—in particular the instability of its solution and, by the late 1950s, started an academic dialogue that led to the development of the Solow–Swan model.

According to the Harrod–Domar model there are three kinds of growth:

- Warranted growth,
- Actual growth and
- Natural rate of growth

Warranted growth rate is the rate of growth at which the economy does not expand indefinitely or go into recession.

Actual growth is the real rate increase in a country's GDP per year. (See also: Gross domestic product and Natural gross domestic product).

Natural growth is the growth an economy requires to maintain full employment. For example, If the labor force grows at 3 percent per year, then to maintain full employment, the economy's annual growth rate must be 3 percent.

Ever since the end of Second World War, interest in the problems of economic growth has led economists to formulate growth models of different types. These models deal with and lay emphasis on the various aspects of growth of the developed economies. They constitute in a way alternative stylized pictures of an expanding economy.

A feature common to them all is that they are based on the Keynesian saving-investment analysis. The first and the simplest model of growth—the Harrod-Domar Model—is the direct outcome of projection of the short-run Keynesian analysis into the long-run. This model is based on the capital factor as the crucial factor of economic growth. It concentrates on the possibility of steady growth through adjustment of supply of demand for capital. Then there is Mrs. Joan Robinson's model which considers technical progress also, along with capital formation, as a source of economic growth. The third type of growth model is that built on neoclassical lines.

It assumes substitution between capital and labour and a neutral technical progress in the sense that technical progress is neither saving nor absorbing of labour or capital. Both the factors are used in the same proportion even when neutral technical takes place. We deal with the prominent growth models here. Although Harrod and Domar models differ in details, they are similar in substance. One may call Harrod's model as the English version of Domar's model. Both these models stress the essential conditions of achieving and maintaining steady growth. Harrod and Domar assign a crucial role to capital accumulation in the process of growth. In fact, they emphasise the dual role of capital accumulation.

On the one hand, new investment generates income (through multiplier effect); on the other hand, it increases productive capacity (through productivity effect) of the economy by expanding its capital stock. It is pertinent to note here that classical economists emphasised the productivity aspect of the investment and took for granted the income aspect. Keynes had given due attention to the problem of income generation but neglected the problem of productive capacity creation. Harrod and Domar took special care to deal with both the problems generated by investment in their models.

General Assumptions:

The main assumptions of the Harrod-Domar models are as follows:

i. A full-employment level of income already exists.

ii. There is no government interference in the functioning of the economy.

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

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

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

vi. Both propensity to save and "capital coefficient" (i.e., capital-output ratio) are given constant. This amounts to assuming that the law of constant returns operates in the economy because of fixity of the capita-output ratio.

vii. Income, investment, savings are all defined in the net sense, i.e., they are considered over and above the depreciation. Thus, depreciation rates are not included in these variables.

viii. Saving and investment are equal in ex-ante as well as in ex-post sense i.e., there is accounting as well as functional equality between saving and investment.

These assumptions were meant to simplify the task of growth analysis; these could be relaxed later.

Harrod's growth model raised three issues:

(i) How can steady growth be achieved for an economy with a fixed (capital- output ratio) (capital-coefficient) and a fixed saving-income ratio?

(ii) How can the steady growth rate be maintained? Or what are the conditions for maintaining steady uninterrupted growth?

(iii) How do the natural factors put a ceiling on the growth rate of the economy?

In order to discuss these issues, Harrod had adopted three different concepts of growth rates:

(i) the actual growth rate, G,

(ii) the warranted growth rate, G_w

(iii) the natural growth rate, G_n.

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

The actual growth rate (G) is determined by saving-income ratio and capital- output ratio. Both the factors have been taken as fixed in the given period. The relationship between the actual growth rate and its determinants was expressed as: GC = s …(1)

This relation explains that the condition for achieving the steady state growth is that ex-post savings must be equal to ex-post investment. **"Warranted growth"** refers to that growth rate of the economy when it is working at full capacity. It is also known as Full-capacity growth rate. This growth rate denoted by G_w is interpreted as the rate of income growth required for full utilisation of a growing stock of capital, so that entrepreneurs would be satisfied with the amount of investment actually made.

Warranted growth rate (G_w) is determined by capital-output ratio and saving- income ratio. The relationship between the warranted growth rate and its determinants can be expressed as $G_w C_r = s$ where C_r shows the needed C to maintain the warranted growth rate and s is the saving-income ratio. Let us now discuss the issue: how to achieve steady growth? According to Harrod, the economy can achieve steady growth when $G = G_w$ and $C = C_r$

This condition states, firstly, that actual growth rate must be equal to the warranted growth rate. Secondly, the capital-output ratio needed to achieve G must be equal to the required capital-output ratio in order to maintain G_w, given the saving co-efficient (s). This amounts to saying that actual investment must be equal to the expected investment at the given saving rate.

Instability of Growth:

We have stated above that the steady-state growth of the economy requires an equality between G and G_w on the one hand and C and C_r on the other. In a free-enterprise economy, these equilibrium conditions would be satisfied only rarely, if at all. Therefore, Harrod analysed the situations when these conditions are not satisfied.

Comparing the second and the third relations about the warranted growth rate and the natural growth rate which have been given above, we may conclude that G_n may or may not be equal to G_w. In case G,, happens to be equal to G_w, the conditions of steady growth with full employment would be satisfied. But such a possibility is remote because of the variety of hindrances are likely to intervene and make the balance among all these factors difficult.

Harrod-Domar Model of Growth and its Limitations

The Harrod Domar Model suggests that the rate of economic growth depends on two things:

1. **Level of Savings** (higher savings enable higher investment)
2. **Capital-Output Ratio**. A lower capital-output ratio means investment is more efficient and the growth rate will be higher.

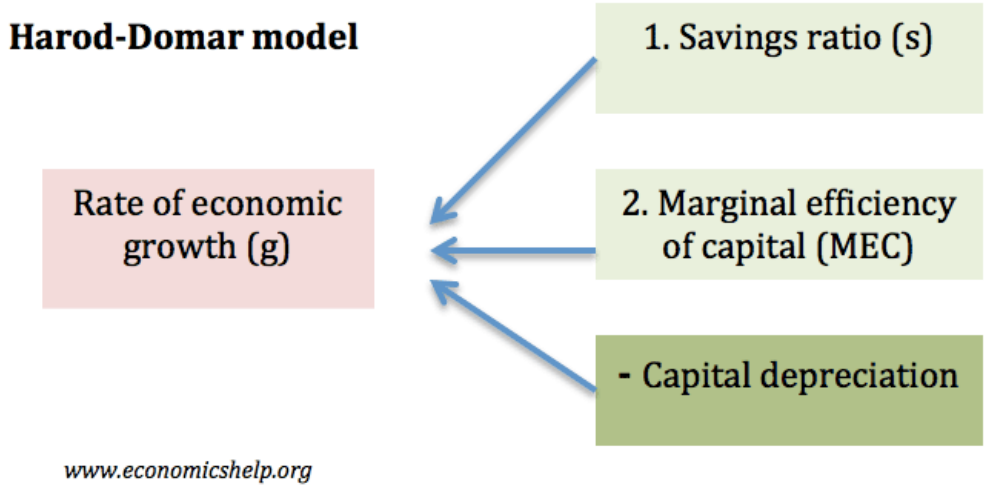
A simplified model of Harrod-Domar:

$$\text{Rate of economic growth (g)} = \frac{\text{Level of savings (s)}}{\text{Capital ouptut ratio (k)}}$$

Harrod-Domar in more detail

- Level of savings (s) = Average propensity to save (APS) – which is the ratio of national savings to national income.
- The capital-output ratio = 1/marginal product of capital.
  - The capital-output ratio is the amount of capital needed to increase output.
  - A high capital-output ratio means investment is inefficient.
  - The capital-output ratio also needs to take into account the depreciation of existing capital

Main factors affecting economic growth



- **Level of savings**. Higher savings enable greater investment in capital stock
- **The marginal efficiency of capital**. This refers to the productivity of investment, e.g. if machines costing £30 million increase output by £10 million. The capital-output ratio is 3
- **Depreciation** – old capital wearing out.

Roy Harrod introduced a concept known as the warranted growth rate.

- This is the growth rate at which all saving is absorbed into investment. (e.g. £80bn of saving = £80bn of investment.
- Let us assume, the saving rate is 10% and the capital-output ratio is 4. In other words, £10bn of investment increases output by £2.5bn.
- In this case, the economy's warranted growth rate is 2.5 percent (ten divided by four).
- This is the growth rate at which the ratio of capital to output would stay constant at four.

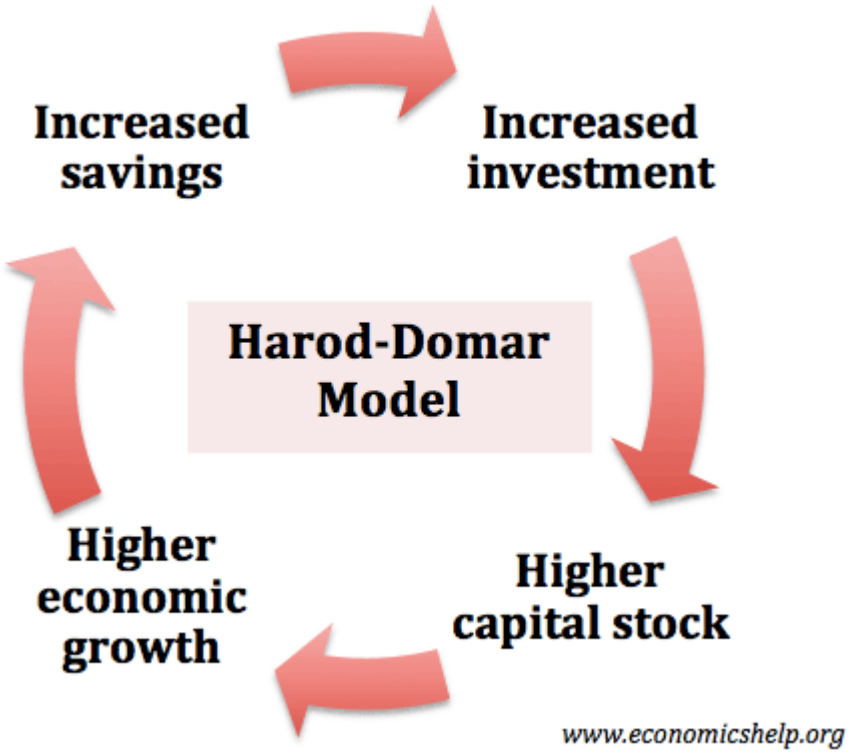
The Natural Growth Rate

- The natural growth rate is the rate of economic growth required to maintain full employment.
- If the labour force grows at 3 percent per year, then to maintain full employment, the economy's annual growth rate must be 3 percent.
- This assumes no change in labour productivity which is unrealistic.

Importance of Harrod-Domar

It is argued that in developing countries low rates of economic growth and development are linked to low saving rates.This creates a vicious cycle of low investment, low output and low savings. To boost economic growth rates, it is necessary to increase savings either domestically or from abroad. Higher savings create a virtuous circle of self-sustaining economic growth.

Impact of increasing capital



The transfer of capital to developing economies should enable higher growth, which in turn will lead to higher savings and growth will become more self-sustaining.

Criticisms of Harrod-Domar Model

- Developing countries find it difficult to increase saving. Increasing savings ratios may be inappropriate when you are struggling to get enough food to eat.
- Harrod based his model on looking at industrialised countries post-depression years. He later came to repudiate his model because he felt it did not provide a model for long-term growth rates.

- The model ignores factors such as labour productivity, technological innovation and levels of corruption. The Harrod-Domar is at best an oversimplification of complex factors which go into economic growth.
- There are examples of countries who have experienced rapid growth rates despite a lack of savings, such as Thailand.
- It assumes the existences of a reliable finance and transport system. Often the problem for developing countries is a lack of investment in these areas.
- Increasing capital stock can lead to diminishing returns. Domar was writing during the aftermath of the Great Depression where he could assume there would always be surplus labour willing to use the machines, but, in practice, this is not the case.
- The Model explains boom and bust cycles through the importance of capital. However, in practice businesses are influenced by many things other than capital such as expectations.
- Harrod assumed there was no reason for the actual growth to equal natural growth and that an economy had no tendency to full employment. However, this was based on the assumption of wages being fixed.
- The difficulty of influencing saving levels. In developing economies it can be difficult to increase savings ratios – because of widespread poverty.
- The effectiveness of foreign capital flows can vary. In the 1970s and 80s many developing economies borrowed from abroad, this led to an inflow of foreign capital however, there was a lack of skilled labour to make effective use of capital. This led to very high capital-output ratios (poor productivity) and growth rates didn't increase significantly. However, developing economies were left with high debt repayments and when interest rates rose, a large proportion of national savings was diverted to paying debt repayments.
- Economic development implies much more than just economic growth. For example, who benefits from growth? does higher national income filter through to improved health care and education. It depends on how the capital is used.

2.2. Solow Theories of Development-surplus labor theory

The **Solow–Swan model** is an economic model of long-run economic growth set within the framework of neoclassical economics. It attempts to explain long-run economic growth by looking at capital accumulation, labor or population growth, and increases in productivity, commonly referred to as technological progress. At its core is a neoclassical (aggregate) production function,

often specified to be of Cobb–Douglas type, which enables the model "to make contact with microeconomics". The model was developed independently by Robert Solow and Trevor Swan in 1956, and superseded the Keynesian Harrod–Domar model.

Mathematically, the Solow–Swan model is a nonlinear system consisting of a single ordinary differential equation that models the evolution of the *per capita* stock of capital. Due to its particularly attractive mathematical characteristics, Solow–Swan proved to be a convenient starting point for various extensions. The neo-classical model was an extension to the 1946 Harrod–Domar model that included a new term: productivity growth. Important contributions to the model came from the work done by Solow and by Swan in 1956, who independently developed relatively simple growth models. Solow's model fitted available data on US economic growth with some success. In 1987 Solow was awarded the Nobel Prize in Economics for his work. Today, economists use Solow's sources-of-growth accounting to estimate the separate effects on economic growth of technological change, capital, and labor

Extension to the Harrod–Domar model

Solow extended the Harrod–Domar model by adding labor as a factor of production and capital-output ratios that are not fixed as they are in the Harrod–Domar model. These refinements allow increasing capital intensity to be distinguished from technological progress. Solow sees the fixed proportions production function as a "crucial assumption" to the instability results in the Harrod-Domar model. His own work expands upon this by exploring the implications of alternative specifications, namely the Cobb–Douglas and the more general constant elasticity of substitution (CES). Although this has become the canonical and celebrated story in the history of economics, featured in many economic textbooks, recent reappraisal of Harrod's work has contested it. One central criticism is that Harrod's original piecewas neither mainly concerned with economic growth nor did he explicitly use a fixed proportions production function.

Long-run implications

A standard Solow model predicts that in the long run, economies converge to their steady state equilibrium and that permanent growth is achievable only through technological progress. Both shifts in saving and in populational growth cause only level effects in the long-run (i.e. in the absolute value of real income per capita). An interesting implication of Solow's model is that poor

countries should grow faster and eventually catch-up to richer countries. This convergence could be explained by:

- Lags in the diffusion on knowledge. Differences in real income might shrink as poor countries receive better technology and information;
- Efficient allocation of international capital flows, since the rate of return on capital should be higher in poorer countries. In practice, this is seldom observed and is known as Lucas' paradox;
- A mathematical implication of the model (assuming poor countries have not yet reached their steady state).

Baumol attempted to verify this empirically and found a very strong correlation between a countries' output growth over a long period of time (1870 to 1979) and its initial wealth.His findings were later contested by DeLong who claimed that both the non-randomness of the sampled countries, and potential for significant measurement errors for estimates of real income per capita in 1870, biased Baumol's findings. DeLong concludes that there is little evidence to support the convergence theory.

Assumptions

The key assumption of the neoclassical growth model is that capital is subject to diminishing returns in a closed economy.

- Given a fixed stock of labor, the impact on output of the last unit of capital accumulated will always be less than the one before.
- Assuming for simplicity no technological progress or labor force growth, diminishing returns implies that at some point the amount of new capital produced is only just enough to make up for the amount of existing capital lost due to depreciation.At this point, because of the assumptions of no technological progress or labor force growth, we can see the economy ceases to grow.
- Assuming non-zero rates of labor growth complicate matters somewhat, but the basic logic still applies-in the short-run, the rate of growth slows as diminishing returns take effect and the economy converges to a constant "steady-state" rate of growth (that is, *no* economic growth per-capita).

- Including non-zero technological progress is very similar to the assumption of non-zero workforce growth, in terms of "effective labor": a new steady state is reached with constant output per *worker-hour required for a unit of output*. However, in this case, per-capita output grows at the rate of technological progress in the "steady-state"that is, the rate of productivity growth).

Variations in the effects of productivity

In the Solow–Swan model the unexplained change in the growth of output after accounting for the effect of capital accumulation is called the Solow residual. This residual measures the exogenous increase in total factor productivity (TFP) during a particular time period. The increase in TFP is often attributed entirely to technological progress, but it also includes any permanent improvement in the efficiency with which factors of production are combined over time. Implicitly TFP growth includes any permanent productivity improvements that result from improved management practices in the private or public sectors of the economy. Paradoxically, even though TFP growth is exogenous in the model, it cannot be observed, so it can only be estimated in conjunction with the simultaneous estimate of the effect of capital accumulation on growth during a particular time period.

The model can be reformulated in slightly different ways using different productivity assumptions, or different measurement metrics:

- Average Labor Productivity (**ALP**) is economic output per labor hour.
- Multifactor productivity (**MFP**) is output divided by a weighted average of capital and labor inputs. The weights used are usually based on the aggregate input shares either factor earns. This ratio is often quoted as: 33% return to capital and 67% return to labor (in Western nations).

In a growing economy, capital is accumulated faster than people are born, so the denominator in the growth function under the MFP calculation is growing faster than in the ALP calculation. Hence, MFP growth is almost always lower than ALP growth. (Therefore, measuring in ALP terms increases the apparent capital deepening effect.) MFP is measured by the "Solow residual", not ALP.

2.3.The Theory of Low-level Equilibrium Trap

This theory is the brainchild of R. Nelson. This theory is also based Malthus hypothesized that the population of a country will tend to increase when per capita income rises above the level of the minimum subsistence costs. Robert Solow and Trevor Swan first introduced the neoclassical growth theory in 1956. The theory states that economic growth is the result of three factors: labor, capital, and technology. While an economy has limited resources in terms of capital and labor, the contribution from technology to growth is bound. On initially, the population is growing rapidly along with the increase in income per capita. However, population growth rate will start to decline if it has reached the physical limits above as further increases in per capita income. This theory is similar to the strategy Leibenstein thesis minimum effort critical. According to Nelson, the disease can be diagnosed as retarded the country's economy as stable equilibrium level of income per capita at or close to the needs cost of living. Nelson In theory, there are four conditions that bring technological and social low-level equilibrium trap, namely:

1. The high correlation between the level of per capita income and growth rate population
2. A low tendency to use per capita income in addition to increased investment per capita
3. Lack of arable land
4. The production method is not efficient.

Moreover, inaction cultural and economic slowdown is also a factor which became the trap. Nelson uses three types of relationship to describe the economic trap at low income levels, namely:

1. Revenue is a function of capital stock, the level of technology, and the size of the population
2. Investments net consists of capital that is created from savings in the form of additional material on the new land area of land that is being processed
3. With low per capita income, short-term changes in the rate population growth is a result of changes in mortality, and changes in the death rate was a result of changes the level of per capita income.

However, while revenue per capita reached a level far above the necessities of life. The next increment on a per capita income less effect on mortality. In theory, Nelson stressed a number of factors needed to escape from the trap of low-level equilibrium, namely:

a. The social and political environment that is favorable in country concerned
b. The social structure must be changed to provide greater pressure on saving and entrepreneurship. Greater incentive to be given to produce more and to limit the amount of family.
c. Steps should be taken to change the distribution of income, on the same time allows the accumulation of wealth by the investor.
d. The government's overall investment program.
e. Income and capital shall be increased by funds from outside country.
f. The production technology is more adequate.

2.4. Cumulative Causation Theory

Cumulative causation refers to a self-reinforcing process during which an impulse to a system triggers further changes in the same direction as the original impulse, thus taking the system further away from its initial position in virtuous or vicious circles of change that may result in a continuing increase in advantages (to some people or activities) and disadvantages (to others).The term *cumulative causation* was coined by the Swedish economist Gunnar Myrdal (1898–1987), even though the basic hypothesis first appeared in American economist Allyn Young's (1876–1929) analysis of economic progress ("Increasing Returns and Economic Progress," 1928). In *An American Dilemma* (1944), Myrdal used the concept of cumulative causation to explain race relations in the United States. In a vicious circle of social determination, the prejudice of the white populations and the low living standards of the black populations could reinforce each other in a downward spiral: a decline in black living conditions could worsen white prejudice and trigger institutional discriminatory processes, further deteriorating black Americans' standards of living.

In Myrdal's analysis, the circular interdependence between social, economic, and political forces, by hindering identification of the "primary" factors (e.g., economic) behind social issues, challenges traditional scholastic boundaries among the social sciences. Fundamentally, Myrdal's notion of cumulative causation conflicts with the concept of "stable equilibrium" (central to most

social sciences, particularly to economics)—that is, the self-stabilization properties of the social system, whereby a disturbance to it will trigger a reaction directed toward restoring a new state of balance between forces. In *Economic Theory and Under-Developed Regions* (1957), Myrdal addressed the failure of neoclassical economic theory to account for the persistence and widening of spatial differences in economic development within and between countries. He ascribes these differences to cumulative processes, whereby regions or nations that gain an initial advantage maintain and expand it as they attract migration, capital, and trade to the detriment of development elsewhere, an idea that permeates the voluminous "nonformal" literature on "uneven development" of the 1960s and 1970s.

Cumulative causation is also central to the view of economic growth as a "learning process" (resulting from virtuous circles of specialization and technical progress) that emerged in the 1960s and 1970s . However, its assimilation into mainstream economic theory was hampered by the difficulty of modeling "increasing returns," on which it inherently relies. Inspired by Adam Smith (1723–1790) and Alfred Marshall (1842–1924), Young (1928) emphasized how increasing returns stem primarily from the process of the division of labor and specialization in production. In Young's virtuous circle, an expansion of the market deepens the division of labor, ensuing in cumulative increases in production efficiency and in market size.

2.5.The big push model

The **big push model** is a concept in development economics or welfare economics that emphasizes that a firm's decision whether to industrialize or not depends on its expectation of what other firms will do. It assumes economies of scale and oligopolistic market structure and explains when industrialization would happen.

The originator of this theory was Paul Rosenstein-Rodan in 1943. Further contributions were made later on by Murphy, Shleifer and Robert W. Vishny in 1989. Analysis of this economic model ordinarily involves using game theory.

The theory of the model emphasizes that underdeveloped countries require large amounts of investments to embark on the path of economic development from their present state of

backwardness. This theory proposes that a 'bit by bit' investment programme will not impact the process of growth as much as is required for developing countries. In fact, injections of small quantities of investments will merely lead to a wastage of resources. Paul Rosenstein-Rodan approvingly quotes a Massachusetts Institute of Technology study in this regard, "There is a minimum level of resources that must be devoted to... a development programme if it is to have any chance of success. Launching a country into self-sustaining growth is a little like getting an airplane off the ground. There is a critical ground speed which must be passed before the craft can become airborne.

Rosenstein-Rodan argued that the entire industry which is intended to be created should be treated and planned as a massive entity (a firm or trust). He supports this argument by stating that the social marginal product of an investment is always different from its private marginal product, so when a group of industries are planned together according to their social marginal products, the rate of growth of the economy is greater than it would have otherwise been. According to Rosenstein-Rodan, there exist three indivisibilities in underdeveloped countries. These indivisibilities are responsible for external economies and thus justify the need for a big push. The indivisibilities are as follows-

1. Indivisibility in production function
2. Indivisibility of demand
3. Indivisibility in the supply of savings

Indivisibility in production function

Indivisibilities in the production function may be with respect to any of the following:

- Inputs
- Processes
- Outputs

These lead to increasing returns (i.e., economies of scale), and may require a high optimum size of a firm. This can be achieved even in developing countries since at least one optimum scale firm can be established in many industries. But investment in social overhead capital comprises investment in all basic industries (like power, transport or communications) which must necessarily come before directly productive investment activities. Investment in social

overhead capital is 'lumpy' in nature. Such capital requirements cannot be imported from other nations. Therefore, heavy initial investment necessarily needs to be made in social overhead capital (this is approximated to be about 30 to 40 percent of the total investment undertaken by underdeveloped countries). Social overhead capital is further characterized by four indivisibilities:

1. *Irreversibility in time*: It must precede other directly productive investments
2. *Minimum durability of equipment*:. Any lesser level of durability is either impossible due to technical reasons or much less efficient
3. *Long gestation periods*: The investment in social overhead capital takes time to generate returns and its impact in the economy is not immediately or directly visible
4. *Irreducible minimum social overhead capital–industry mix*: Investment needs to be of a certain minimum magnitude and spread across a mix of industries, without which it will not significantly impact the process of growth.

Indivisibility (or complementarity) of demand

Developing countries are characterized by low per-capita income and purchasing power. Markets in these countries are therefore small. In a closed economy, modernization and increased efficiency in a single industry has no impact on the economy as a whole since the output of that industry will fail to find a market. A large number of industries need to be set up simultaneously so that people employed in one industry consume the output of other industries and thus create complementary demand.

To illustrate this, Rosenstein Rodan gives the example of a shoe industry. If a country makes large investments in the shoe industry, all the disguisedly employed labor from the other industries find work and a source of income, leading to a rise in production of shoes and their own incomes. This increased income will not be expended only on buying shoes. It is conceivable that the increased incomes will lead to increased spending on other products too. However, there is no corresponding supply of these products to satisfy this increased demand for the other goods. Following the basic market forces of demand and supply, the prices of these commodities will rise. To avoid such a situation, investment must be spread out amongst different industries.

The situation may be different in an open economy as the output of the new industry may replace former imports or possibly find its market by way of exports. But even if the world market acts as a substitute for domestic demand, a big push is still needed (though its required size may now be reduced due to the presence of international trade).

Indivisibility in the supply of savings

High levels of investment require a corresponding high level of savings. We cannot always rely on foreign aid as the huge levels of investments in the different sectors need to be made not only once, but multiple times. Hence domestic savings are a must. But in an underdeveloped economy, this is a challenge due to the low income levels. The marginal rate of savings needs to be increased following the rise in incomes due to higher investment.

Chapter Three: Determinants of Economic Development

3. The Traditional Approach (Economic Factors) to Development

The traditional approach to development assumes that economic development is determined by economic factors, like natural resources, capital, technology, etc. Let's see each of the major economic factors

A) Natural Resources

The principal factors affecting the development of an economy are the natural resources or land. "Land" as used in economics includes natural resources such as fertility of land, its situation and composition, forest wealth, minerals, climate, water resources, sea resources, geographical proximity with rich countries etc. For growth, the existence of natural resources in abundance is essential. A country which is deficient in natural resources will not be in a position to develop rapidly. As pointed out by Lewis, "Other things being equal, men can make better use of rich resources than they can of poor." In LDCs natural resources are unutilized, underutilized or mis-utilized. This is one of the reasons for their backwardness. The presence of natural resources is not sufficient for economic growth. What is required is their proper exploitation.

It is often said that economic growth is possible even when an economyc is deficient in natural resources. As pointed out by Lewis, "A country which is considered to be poor in resources today may be considered very rich in resources at some later time, not merely because unknown resources are discovered, but equally because new uses are discovered for the known resources." Japan is one such country which is deficient in natural resources but it is one of the advanced countries of the world because it has been able to discover new uses for limited resources.

B) *Capital Accumulation*

Capital means the stock of physical reproducible factors of production. When capital stock increases with the passage of time, it is called capital accumulation or capital formation. Capital formation is investment in capital goods that leads to increase in capital stock, national output and income. Capital formation is the key to economic development. On the one hand, it reflects effective demand and on the other hand, it creates productive

efficiency for production. Capital formation possesses special importance to LDCs. The process of capital formation leads to the increase in national output in a number of ways. Capital formation is essential to meet the requirements of an increasing population in such economies. Investment in capital goods not only raises production but also employment opportunities. It is capital formation that leads to technological progress. Technological progress in turn leads to specialization and the economies of large scale production. The provision of social and economic over heads, like transport, power education, etc. in a country is possible through capital formation. It is also capital formation that leads to the exploitation of natural resources, industrialization and expansion of markets which are essential for economic progress.

C) Organization

Organization is an important part of the growth process. It relates to the optimum use of factor of production and economic activities. Organization is complement to capital and labor and helps in increasing their product activities. In modern economic growth, the entrepreneur has been performing the task of an organizer and undertaking risks and uncertainties.

The underdeveloped countries lack entrepreneurial activity. Such factors as the small size of the market, capital deficiency, absence of private property and contract, lack of skilled and trained labor, non-availability of adequate raw materials, and infrastructural facilities like transport, power, etc increase risk and uncertainties. That is why such countries lack entrepreneurs.

D) Technological Progress

Technological changes are regarded as the most important factor in the process of economic growth. They are related to changes in the methods of production which are the result of some new techniques of research or innovation. Changes in Technology lead to increase in productivity of labor, capital and other factors of production.

D) Division of Labor and Scale of production

Specialization and division of labor lead to increase in productivity. They lead to economies of large scale production which further help in industrial development. Adam Smith gave

much importance to the division of labor in economic development. Division of labor leads to improvement in the productive capacities of labor. Every laborer becomes more efficient than before. S/he saves time. S/he is capable of inventing new machines and process in production. Ultimately production increases manifold. But division of labor depends upon the size of the market. The size of the market, in turn, depends upon economic progress, i.e. the extent to which the size of demand, the general level of production, the means of transport etc are developed. When the scale of production is large, there is greater specialization and division of labor. As a result, production increases and the rate of economic progress is accelerated. Underdeveloped countries are unable to take advantage of the economics of division of labor and large scale production due to the presence of market imperfections, which in turn keep the size of the market small.

3.2 Institutional Approach to Development

The institutional approach to development is a recent phenomenon. It argues that explanations of the poor economic development are found not only in economic factors but also in non-economic factors. In fact most of these factors are explained by non-economic factors or institutional factors. The institutional approach to development emphasizes more on the institutional factors than the economic factors. They explain this using the case of a metropolitan city. The central city in a metropolitan area, while gaining some high-rise buildings, has a stagnant population and an increasing proportion of poor people. On the other hand, suburbs are prosperous and growing rapidly.

To a certain degree, modern economics is like such a metropolitan area. The traditional economics is at the center of the city. At the same time, the suburbs of economics are expanding rapidly in all directions. The institution approach to development is a case in point. For example, consider shifting the focus from capital and other resources toward the quality of governance. In the suburbs of economics governance is a focus, but not in the city center where capital is the focus.

The institutional factor further argues that most of the economic factors can be obtained in the globalize, market. For example, many Multinational National Corporations (MNCs) are ready to invest a significant amount of capital if conditions are favorable. Besides, LDCs can also borrow technologies from DCS. The institutional factors that determine economic performance include;

A) Type of Government

A country with a monarchy system is less likely to develop as compared with a country with a democratic government. The nature of democracy depends on the level of education, discipline, culture, etc. of the people. In maintaining rules, governments could be soft or strong. To maintain rules and there by prepare the ground for development, governments need be strong. To provide for the enforcement of contracts, the prevention of anarchy, and the provision of other public good, the coercive power of government is necessary. Good governance is another important factor which determines economic performance of countries. According to Olson M, "Governance is a decisive determinant of economic performance and that with the right economic policy and institutions, poor countries can grow at a very rapid rate." Good governance is reflected by long trem vision, correct policies and effective implementation. For example, in Japan the government decided what type of industries to develop after World War II. It gave emphasis to textile, iron and steel, shipbuilding etc. In recent years, the government shifted towards electronics in response to a change in world market. Another aspect of good governance is the development of infrastructure. Countries like Hong Kong, Singapore, Malaysia, etc develop infrastructure and attract foreign capital.

B) Institutions

Availability of technology like the capital good, complementary factors like infrastructure, highly skilled labor, innovation, etc. are required for an economy to grow. To have such technological changes requires a good institution. For example, in making innovations, there could be resistance. To calm such resistance, government effort is required. Thus, institutions that encourage technological innovation and suitability of institution for successful adoption of new ideas is an important question. Political and cultural dynamism help in adoption of new technology and the negative forces such as labour union orthodoxy should be managed properly by good governance. Spread of education and scientific culture are necessary for adoption of new technology *Reservation/Affirmative Action*/. Social justice requires that if some sections of the society are deprived, they must be given special attention i.e. reservation is needed. The supporters of reservation justify its use in terms of social justice, equity and to rectify historical mistakes. However, from the point of view of efficiency, it is not justified.

C) *Social Structure of Population*

In some countries, we get a homogenous type of population. Homogeneity of the population leads to the development of national feelings, which is helpful for economic development – for example China, Japan, Korea, and Russia. On the other hand, population of a country could also be heterogeneous _ divided on the basis of language, religion, ethnicity, caste, etc. In such societies, some groups play entrepreneurial role.

E) ***Human Capital and Cultural Traits*.**

The difference in per capita income among countries could be explained by human capital and cultural traits. In the DCs, human capital and cultural traits in the form of work culture, discipline, good entrepreneurship etc have played an important role. Poor countries are poor because they lack these traits. The cultural traits that perpetuate poverty are the result of centuries of social accumulation and they can't be changed quickly. Cultural advancement according to M. Olson results in two types of human capital:

a) Marketable Italic capital; These include more skill, propensity to work harder, more entrepreneurial personality; These qualities result in increase in the quality and quantity of productive outputs. These results in increase in income of persons, groups as well as of nations.

b) Civic culture. A civic culture leads to the election of good government which adopts good policy. It also results in a disciplined society. Corruption will be less. People pay tax.