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M.A. [Economics]

I - Semester

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INDUSTRIAL ECONOMICS

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INTRODUCTION

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Industrial Economics is the study of firms, industries, and markets as it looks at firms of all sizes – from local shops to giants in the market. It considers a whole range of industries, such as electricity generation, car production, and restaurants. Industrial Economics helps us understand such issues as: a) the levels at which capacity, output, and prices are set; b) the extent that products are differentiated from each other; c) how much firms invest in research and development (R&D) d) how and why firms advertise.

One of the key issues in industrial economics is assessing whether a market is competitive. Competitive markets are normally good for consumers so most industrial economics courses include analysis of how to measure the extent of competition in markets. Industrial Economics uses theoretical models to understand firm and regulatory decision making.

This book, *Industrial Economics*, is divided into fourteen units that follow the self-instruction mode with each unit beginning with an Introduction to the unit, followed by an outline of the Objectives. The detailed content is then presented in a simple but structured manner interspersed with Check Your Progress Questions to test the student's understanding of the topic. A Summary along with a list of Key Words and a set of Self-Assessment Questions and Exercises is also provided at the end of each unit for recapitulation.

BLOCK - I
BASICS OF INDUSTRIAL ECONOMICS

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UNIT 1 INDUSTRIALIZATION

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1.0 INTRODUCTION

Industrialization has come to be regarded as synonymous with economic growth and development. No country desirous of rapid economic progress can afford to neglect industrialization. Industrialization is the process of manufacturing consumer goods and capital goods and of creating social overhead capital in order to provide goods and services to both individual and business. Industrialization plays an important role in the economic development of a country. In fact, an industrially developed economy is also economically prosperous. Thus, development of country originates from industrial development.

Industrialization is important for overall growth. It can help the progress of agriculture, trade, transport and all other economic activities. Industrialization makes the best use of our human and physical resources. All types of goods for all types of people can be produced in large, medium and small industries. Industrialization provides a sound basis for continuous and rapid increase in income and productivity. Industrial sector generates tremendous employment opportunities for the people, because the increase in income results in increase in aggregate demand and this means more production and more employment. It leads higher saving and investment

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and capital formation thereby creating solid foundation for self-sustaining development. Industrial sector holds the key for rapid growth of an economy. These industries are either manufacture or service oriented, and provide employment opportunities. A number of public and private companies operate in an industry, which may manufacture the same goods or provide the same services, but follow different strategies and guidelines to operate their businesses.

Industrialization is a process by which an economy is transformed from primarily agricultural to one based on manufacturing goods. Industrialization is a process that happens in countries when they start to use machines to work that was once done by people industrialization changes the things people do. It is a part of a process where people adopt easier and cheaper ways to make things. Using better technology, it becomes possible to produce more goods in a short time. In this unit, you will learn all the facets of industrialization including the meaning, objective, characteristics, speed and role of industrialization.

1.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the meaning and definition of industrialization
- Describe the determinants of industrialization
- Explain the role of industrialization
- Examine the importance of industrialization in the Indian economy

1.2 MEANING OF INDUSTRIALIZATION

The term ‘industrialization’ has been derived from the word ‘industry’ which means to manufacture or to produce some things. As human beings cannot produce anything, he can increase the utility of the products; therefore, the term industry means to increase the utility or to create utility.

According to Professor Sargent Florence- ‘Industry refers as in common usage to manufacturing sector and excludes agriculture, mining and most services, but may include building and public utilities.’

The world industrialization is generally used in two senses—a narrow sense and a wider sense. In the narrow sense, industrialization refers to establishment and development of basic and manufacturing industries. Its main objective is to increase the general living standard by increasing efficiency and capacity of factors of production. On the other hand, in the larger perspective, under industrialization, not only basic and manufacturing industries are established but through this medium the changes in the entire economic structure of the country is carried out. The main objective of industrialization is to equally develop the overall factors of development of the economy. In brief, it is said that industrialization is a multi-fold

and wider economic process. Industrialization is a process by which an economy is transformed from primarily agricultural to one based on manufacturing goods. Individual manual labour is often replaced by mechanised mass production and craftsmen are replaced by assembly lines. Industrialization includes economic growth, more efficient division of labour and the use of technological innovation to solve problems as opposed to dependency on conditions outside human control. Some prominent definitions of industrialization are as under:

According to Pei-Kang-Chang: ‘Industrialization is a process in which changes of series of strategical production functions are taking place. It involves those basic changes that accompany the mechanisation of an enterprise, the building of new industry, the opening of new market and the exploitation of a new territory. This is in a way the process of deepening as well as widening of capital.’

According to Henry Johnson: ‘Industrialization involves the organization of production in business enterprises, characterised is based on the application of technology and on mechanical and electrical power to supplement and replace human effort and motivated by the objective of minimising cost per unit and maximising returns to the enterprise.’

According to Paul M. Sweegee: ‘During a process of Industrialization all of what we commonly call the basic industries appear as new industry, and their establishment absorb newly accumulated capital without adding correspondingly to the output of consumption goods.’

According to Eugene Staley: ‘Industrialization and high productivity are parts of an inter-linked process, does not proceed very without the other.’

In short, the idea of broader process of economic development is in industrialization. On the basis of above definitions, it can be said that industrialization involve those basic changes that accompany the mechanisation of an enterprise the building of new machinery, the opening of new market and exploitation of a new territory. This is a way and a process of deepening as well as widening capital. Thus, economic and industrial development of country is carried out widely under industrialization. Along with the development of manufacturing industries, the development of agriculture, transportation and mechanisation also take place.

Objectives of industrialization

The following are the objectives of industrialization:

1. Promote economic efficiency and growth
2. Bring about a structural shift in the economy in favour of industry
3. Promote balanced regional development
4. Promote the inter and intra-sectoral linkage
5. Create a sound base for the transfer adaptation and development of technology

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6. Develop and achieve international competitiveness in areas of clear comparative advantages in industrial exports.
7. Generate employment opportunity.
8. Develop domestic technological capability for the production of intermediate inputs, outputs and capital goods.

1.2.1 Characteristics of Industrialization

On the basis of above definitions of industrialization, the main characteristics of industrialization can be outlined as follows:

- 1. Transfer of sources of production:** The factors of production transfer resources from primary sector (agriculture sector) to manufacturing industries and to services in tertiary sector as a result of industrialization.
- 2. Deepening and widening use of capital:** Industrialization make extensive use of capital. Industrialization is a process of deepening and making extensive use of capital. It reduces per unit cost of production and increases the profit potentiality of enterprises. As a result, per capita income increases and this encourages saving and capital formation, further opening new areas for industrialization.
- 3. Development of new process:** In the process of industrialization number of new process take place, like mechanisation, automation, scientific management, rationalisation, development of new product and new market.
- 4. Social changes:** Industrialization sets out a new pattern in the society by enabling it to adopt modern and dynamic approach instead of traditional one. It develops the standard of education and reduces various constraints of society.
- 5. Economic development of the country:** Industrialization creates equal development of all the sectors in the country which expedites the pace of economic progress of the country.

1.2.2 Form or Pattern of Industrialization

There is no definite pattern of industrialization because it is affected by socio-economic conditions, policies, shortage/excess of labour, capital, infrastructure and technical development of the country. That is why many forms or patterns of industrialization are found according to the conditions prevailing in different countries. Following are the main forms or patterns of industrialization:

- I. Pattern according to Control:** Following are the patterns of industrialization according to control-
 - Industries working under government control
 - Industries working under private sector control
 - Industries working under the control of big industrial house

- Private industries working under the control of government regulations
- Industries providing self-employment opportunities

II. Pattern according to Trend of Growth: Following are the patterns of industrialization according to trends of growth-

- **Forward Industrialization:** Under this pattern of industrialization, industries of a country continuously keep on making progress and the rate of growth also increase regularly.
- **Backward Industrialization:** Under this pattern of industrialization, industries continuously keep on declining and the rate of growth also decreases.

III. Patterns According to Ownership of Capital: Following are the patterns of industrialization according to ownership of capital-

- **State Initiated Pattern:** If the state takes initiative in the establishment of industries; such pattern is known as 'State Initiated Pattern'. This pattern of industrialization is often found in Russia, China and other socialist countries. Such industries are also termed as industries of public sector.
- **Private Initiated Pattern:** If initiative is taken by private industrialists in the establishment of industries, such pattern of industrialization is known as 'Private Initiated Pattern'. This kind of group of industries is also termed as industries of private sector. This form of industrialization is mostly found in capitalist countries such America, Germany, Japan.
- **Jointly Initiated Pattern:** When industries are established by joint initiatives of Government and Private Sector both, such pattern is known as Jointly Initiated Pattern. This kind of group of industries is also termed as joint sector industries. This form of industrialization is often found in countries having mixed economy such as India, British.

IV. Pattern according to Location: Following are the pattern of industrialization according to location:

- **Centralised Industrialization:** When the establishment and development of a industry is based on some particular location, such industrialization is known as *Centralised Industrialization*. Prior to independence this form of industrialization was found in India. In Centralised Industrialization some places are industrially developed while other are highly backward leading to unbalanced industrialization.
- **Decentralised Industrialization:** When the establishment and development of industry is not on some particular location, but industries are located in entire areas in a balanced manner such industrialization is known as *Decentralised Industrialization*.

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V. Pattern according to Size: Following are the pattern of industrialization according to size-

- **Large –scale industries:** Large-scale industries are the exact opposite of small-scale industries. Here the capital invested is large and advanced technology is in use here. Example, Automobiles and Heavy Machinery.
- **Small-scale industries:** Small scale Industries are those industries which operate mainly with hired labour and are concentrated in urban areas.
- **Medium sized industries:** The enterprises, where the investment in plant and machinery is more than five crore rupees but does not exceed ten crore rupees are known medium enterprises.
- **Micro industries:** An enterprise, where the investment in plant and machinery does not exceed twenty-five lakh rupees is known as micro enterprise.

The integrated form of large, small, medium and micro industries is the base of industrialization in India.

VI. Pattern according to Intensity- Following are the pattern of industrialization according to Intensity-

- **Capital Intensive Industrialization:** When priority is given to such industries in which comparatively more capital is invested; such form of industrialization is known as *Capital Intensive Industrialization*.
- **Labour Intensive Industrialization:** When priority is given to such industries in which more labour is required, such form of industrialization is known as *Labour Intensive Industrialization*.

VII. Pattern according to Rate of Growth- Following are the pattern of industrialization according to rate of growth-

- **Revolutionary Industrialization:** When industrialization of any country takes place at a greater speed and enough changes appear in its old industrial economy, such industrialization is known as *Revolutionary Industrialization*. This kind of industrialization has been followed in England, Russia and China.
- **Developmental Industrialization:** When industrial economy is not completely abandoned at once but changes are made gradually and industries are developed in modern fashion at its own speed, such industrialization is known as *Developmental Industrialization*. This kind of industrialization has been followed in India.

VIII. Pattern according to Output: Following are the pattern of industrialization according to output-

- **Consumers’ goods industries:** These industries produce goods for consumer consumption such as tea, coffee, clothes sugar, jute etc.

- **Capital goods industries**-These industries produce capital goods. These goods are used for further production. Iron & steel equipment, cement, heavy chemical, etc.

1.2.3 Determinants of Industrialization Growth

There are two kinds of determinants of industrial growth- (I) Economic Factors and (II) Non-economic Factors.

These factors are described as follows-

(I) Economic Factors: Following are the economic factors of industrial growth-

- Natural Resources:** The economic prosperity of any country depends upon the availability of its abundant natural resources and their suitable exploitation. The production of an economy depends upon its resources quality and quantity of soil, minerals, climate, geographical situation, forest resources, rivers, sea-shore and power resources. The possibilities of industrial growth are more if a country is rich in natural resources. In this regard Professor Lewis said, 'Industrial growth and natural resources are dependent each other. If other things remaining same, the men can make good use of rich resources as compare to poor resources. This is the reason why we expect high rate of industrial growth from such country which have plenty of natural resources with them.'
- Capital Formation:** Capital is required for industrialization, modernisation of agriculture and development of means of transportation. The increase in the rate of capital formation helps in industrial growth. Capital formation is the main basis of modern industrial growth. According to Planning Commission- 'The economic development of any country depends upon the availability of capital.'
- Human Resources:** Growing population is an important factor of industrial growth. Workers are needed to work in factories/industries. As business expands, more workers are needed. The growing population also provided an opportunity for business to sell their product to more people. Man is the means and ends of economic activities. Due to increase in population, there is increase in supply of one of the factors of production, i.e. labour. The credit of converting available idle natural resources of the country into wealth producing activities goes to labour itself. Increase in population includes growth of supply for increasing demand of goods and services. Likewise increase in population proves to be beneficial for industrial growth because more population = needed goods = growth of industries.
- Market:** In a perfect dynamic state, the various factors of production are dynamically oriented from one industry to another industry so long as the marginal productivity does not become equal in the entire

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industry. In underdeveloped countries due to lack of knowledge of the market, many workers do not go to that industry where their productivity is high even when their marginal productivity is zero. This also applies in case of capital market.

v. Invention and technological development: New invention and improved technology helps bring about industrialization. Through innovation and technological development, the knowledge of new and modern methods is obtained. Thus, technological factors include degree of mechanisation, technical know-how, product design etc. New inventions make it easier to make products and also help produce goods more efficiently. Technological development plays an important part to influence the industrial productivity. ‘The application of motive power and mechanical improvements to the process of production has accelerated the pace of industrialization to an unprecedented degree and has given us the vision of the vast and unexplored frontiers that still lie ahead of us in the realm of applied science and technology.’

Innovation and pragmatic progress are the indicators of industrial growth because the quantity of production increases and cost reduces through it. With the use of innovative techniques in the area of agriculture and industries, production can be increased in substantial quantity.

vi. Structure of Economic Organization: Strong economic organizational structure is highly essential for industrial growth. Only with the help of economic organization, the land can be made suitable for agriculture, available resources can be used economically and efficiently and new industries can be established. In this way with the help of suitable economic organizational structure, industrial growth of a country can be chartered successfully.

vii. Improved Transportation: Improved transportation helps to bring out industrialization. There needs to be a good transportation system to be able to get the products to the consumers. Roads, canals, railroads and ships are various ways to transport products.

viii. Capital Output Ratio: Capital output ratio reflects the number of units of capital which would be needed to produce one unit of production. It also makes certain efforts to find out the rate of increase in production as a result of investing the available amount of capital. If capital output ratio is more, then the rate of industrial growth of that country will also be more.

(II) Non-economic Factors: Industrialization is not only a technical and economic process but is also related to socio-cultural activities and political factors. According to Nurkse, ‘Economic development has much to do with human endowment, social attitudes political conditions and historical accidents.’ Following are the non-economic factors of industrial growth-

- i. Political Stability:** According to professor W.A. Lewis, ‘The behaviour of Government plays an important role in encouraging or discouraging economic activities.’ Without government efforts, no economy can achieve industrial progress. If peace and security arrangements are found in the country, it means that the government is stable and the public have confidence in it, accordingly industrial growth will be at faster rate. Uncertain and unstable political environment and weak administrative structure creates obstacle in the growth of industries.
- ii. International Condition:** International conditions also affect industrial growth to some extent. If relations are good with neighbouring countries, then there are adequate possibilities of export and international co-operation is there, the industrial growth will be at a faster speed and vice versa.
- iii. Religious Considerations:** Religious considerations also have their effect on economic industrial growth. Professor W.A. Lewis has written that it depends upon the country either to restrict is industrial progress by adopting traditional religious considerations or to speed up the industrial growth by adopting modern methods. Religious considerations are proving to be great barriers in the industrial growth in India.
- iv. Social Changes:** Social environment has a decisive effect on industrial growth. Society’s desires of progress rapidness towards growth and anxiousness to use new method, etc. are included in social environment. The main reasons of this under developed countries are the social institutions because there is lack of courage in the public of such countries. In this regard Professor Richard T. Gill has written that industrial growth is neither a mechanical process nor it is a general problem of linking different resources. Afterwards it is a human entrepreneurship and like all human entrepreneurship’s result finally depend upon the ability quality and attitude of the people who take this venture in their hands.

III. Other factors: Following are the other factors which affected the growth of industries-

- i. Quality of human resource:** Manpower plays a significant role in rising industrial productivity in most industries. If labour force is not adequately qualified and is not properly motivated, all the steps taken to increase production and productivity will have no result the employees’ performance and attitudes have and immense effect on industrial growth. Three important factors which influence productivity of labour are ability of workers, wiliness of workers and the environment under which he has to work.

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ii. Government Policy: The industrial policy of the Government is also an important factor of industrial growth. If the government frame and implement such policies which create favourable conditions for saving, investment, flow of capital from one industrial sector to another and conservation of national resources, give protection and incentives to certain industries then it motivates industrial growth and vice versa.

iii. Availability of Finance: The industrial growth will remain a mere dream if adequate financial resources are not available to introduce technical improvement and give appropriate training to the workers.

1.3 SPEED OF INDUSTRIALIZATION

Like the pattern of industrialization, the speed of industrialization is also found to be dissimilar in different countries. The exact measurement of the speed of the industrialization is not possible because following are the main factors affecting the speed of industrialization:

- i. Nature of Industrialization:** If the industrialization is followed through manufacturing consumer goods, then the speed of the industry will be low. But speed of industrialization will be higher if it followed through manufacturing capital goods industries.
- ii. Level of Technological Development:** If any country adopts low level of technological development in its initial stage of industrialization, then the speed of industrialization is often slow and vice versa.
- iii. Government Policy:** If the policy of government shows adequate interest in country's industrialization, the speed of industrialization would be higher and vice versa. Government's price policy, trade policy and tax policy can encourage the industrialization. After 1991 policy of economic liberalisation create favourable environment for the development and establishment of industries in India.
- iv. Change in Social Conditions:** If the social conditions of the country change in hand in glove with the industrialization, they the speed of industrialization will increases otherwise it decreases.
- v. Population:** If the population is less in comparison to economic and natural resources, the speed of industrialization will be faster in that country. If the population growth and density of population is high in the country, the speed of industrialization will be low.
- vi. Ability and Efficiency of Human Resources:** The speed of industrialization in any country depends upon the ability and efficiency of available human resources of that country. If the human resources of the country are able, efficient and disciplined, then they will give their full productive co-operation in industrialization and the speed of industrialization will be higher and vice versa.

- vii. Other Factors:** Availability of Natural Resources, political stability and labour relations are other factors which give pace to the speed of industrialization.

1.3.1 Causes for Slow Progress of Industrialization in India

The speed of Industrialization in India is very slow due to following reasons:

1. During the colonization period, industrial policy which was followed by the British rulers was in the interest of the rulers and against the country. This, is why India remained an agricultural economy during 200 years of British rule. This is what restricted the industrial development of the country even in the early years of independence.
2. Unlike in other countries, industrialization in India was began at low level of technological development whereas this should have begun at a higher level of technological development.
3. Industrialization as a policy was not given a detailed and clear-cut planning strategy as it should have been given, this resulted in government continuing to show indifference towards the development of some industries.
4. The density of population is very high and rate of growth of population is also high which posed a problem to reap the benefits of industrialization.
5. One of the top reasons which industrialization suffered in the country was due to poor rate of capital formation.
6. The root of industrial development in India was totally dependent on the performance of the agricultural sector. Thus, any lag or retardation in the performance of the agricultural sector resulting from natural factors reflected as industrial stagnation in the country.
This is because raw material for other industries is sourced from agricultural sector. Additionally, a demand for raw materials also indicates a demand for more industrial goods. Thus, this poor performance of the agriculture retards the development of industries in India.
7. There is shortage of capital resources in India. Foreign capital-technical co-operation is also not available in adequate quantity and quality.
8. Infrastructural facilities in India are still backward and lacking which becomes a barrier in the way of industrialization. This is a big problem since industrial development will still be lacking in areas with potential merely due to infrastructural barriers like absence of proper transportation and connectivity in terms of railways or roadways and communication mediums.
9. Industrial development also requires the labour of technical and efficient personnel and this is an area of problem in our country. The technological improvements require trained and skilled staff to handle mechanized tools and systems in the industries today. Apart from skills, it is also important that the labour is hardworking and sincere so as to ensure that wastage of

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human resources is minimized. There is still very high requirement of initiatives and schemes in favour of labours to ensure their mobility and well-being as well as to ensure that industrialization remains on a growing trajectory.

10. It can be observed from the recent times, that there has been a strong tendency to produce luxury goods in the economy as opposed to more necessary goods especially among the large industrial houses. This can be seen from the rise in the production of 'white goods' like refrigerators, washing machines, air conditioners etc. which has significantly risen in recent times. Similarly, on the other end of the spectrum, there has been observed a declining trend in the production of commodities for mass consumption. This has resulted in a distortion of the output structure of several products.
11. In our country like in many other countries, there has been observed a growing tendency of the economic power becoming concentrated towards a certain section of the society and industries. This uneven industrialization is not beneficial in the pathway of achieving a sustainable and equitable development.
12. The growth in the industrial sector in our country has suffered a great deal due to the poor performance on the part of public sector enterprises who have failed to produce good results even during the initial plan period when they were given more priority. Huge budgetary allocations and minimal results are becoming a growth burden on the economy.
13. Even though industrialization in India has gained momentum through the production of consumer goods, it is important that for speedy development of industries there is focus on capital goods manufacturing companies.
14. Industrial development in our country has been concentrated in certain few states in our country. For example, regions like Gujarat and Maharashtra have received more infrastructural support in comparison to other poorer states with developmental prospects. Eventhough, there have been efforts to establish public sector industries in certain backward states like Odisha, Bihar and MP but the desired results have not been seen in these cases. Additionally, the fiscal incentives that have been planned remain helpful to backward areas of developed states rather than developing states which has created an uneven industrialization in different states of our country.
15. Another peculiar problem faced by industrial sector of the country is its growing sickness due to bad and inefficient management.
16. Some of the factors which are becoming barriers in the path of industrialization are the problems of the regulatory mechanism and the regional state control. The government is trying to fill these gaps in the private and public sector through certain regulatory measures.

To sum up, the progress of industrialization has not been generated sufficient growth potential either in terms of contribution of output or in terms of employment; and what is really serious is that the rate of growth of

industrialization has been declining with every decade. The question of choice of technique has, therefore to be examined a new with reference to employment.

Industrialization

1.4 EFFECT OF INDUSTRIALIZATION

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When the process of industrialization once starts in any country, and then a series of continuous changes also start in that country. Industrialization is the period of social and economic change that transforms a human group from an agrarian society into an industrial society, involving the extensive re-organization of an economy for the purpose of manufacturing. The effect of industrialization can be studied under the following heads:

- I. Internal Structural Change:** The most important effect of industrialization is on internal structure of the country because by adopting industrialization in the country the burden of population starts shifting from primary industries to secondary industries. Following results are prominent due to such changes-
- Due to extension of secondary sector number of industries and number of labour increase and as the result of this importance of direct taxes increased in the country.
 - The quantity and direction of public expenditure have to be adjusted in accordance with the new areas in distribution of population.
 - The liabilities of government with regard to safety, public health, medical facilities, education and training etc relatively increased as compared to prior period as a result of which new laws have to be made.
 - Due to extension of secondary sector, population migrate from villages to urban areas and create the problem of slum.
 - Due to industrialization tendency of urbanisation in the country increases as result, along with development of cities new cities come into existence.
 - Due to this differences in economic development of rural and urban areas are created. As a result of this, developed areas become more developed and the backward areas enter in the first stage of industrialization.
 - During the speedy industrialization, along with establishment of factories in the cities necessary investment does not take place in public utility services (such as roads, water supply, medical facilities). As result of this dust and wastages increase in cities.
- II. Social Consequences:** Due to industrialization not only economic and business structure are affected but social structure also undergoes a change; because the success of any of the programmes of industrialization does not depend upon selection of industries, its financial arrangements, efficiency and development rate but also depend upon the problems which are created

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by social transition. Industrialization increases the income of people, changes appear in their living standards and social adjustments are needed for such changes. If social adjustments are not possible as per requirement, following consequences may appear:

- Completion and individuality increases by which team spirit and rural unity decreases.
- Human relations are improved in many conditions due to industrialization by which death rate decreases leading to increase in population which further leads to many problems.
- Automated big industries develop due to industrialization but small-scale and cottage industries start declining due to decrease in human values.
- Due to industrialization, the problem of environmental pollution arises nearby industrial areas. Water pollution and air pollution is common in these areas and people face health problem due to this.

III. Changes in the Pattern of Foreign Trade: As the result of industrialization structure and direction of foreign trade have changed. For the industrial development, countries import capital goods, such as machinery, equipment and technology. Due to industrialization capital industries, along with consumer industries are also established, the effect of which is also seen on the pattern of foreign trade. Because after industrialization the country starts importing raw material and semi-furnished goods in place of finished goods along with the increase in the purchasing power of general public heterogeneity appear in imported goods. In relation to this, governmental policy can determine the quantity of export and import. If the government takes strong action with regard to export and import, they will be reduced otherwise not. Hence due to industrialization pattern of foreign trade has also changed

On the basis of analytical study, the effect of industrialization discussed above, it can be said that due to industrialization public welfare increases. The government and society play important role to make industrialization more effective. Industrialization is necessarily adopted in accordance with the circumstances of the country because: (i) it rises social living standard and modern goods are available to consumers; (ii) suitable exploitation of national resources take place; (iii) more opportunities of employment are available in the country; (iv) the country goes forwards and self-sufficiency.

Check Your Progress

1. Name the patterns of industrialization according to trend of growth.
2. What is decentralized industrialization?
3. List the factors which influence productivity of labour.
4. How does industrialization changes as per the nature of industry?

1.5 ROLE OF INDUSTRIALIZATION IN ECONOMIC DEVELOPMENT

Industrialization plays a vital role in the economic development of underdeveloped countries. As the historical record shows, the developed countries of the world broke the vicious cycle of poverty by industrialising, rather than focusing on agricultural of the production of national resources. Industry plays a complex role in economic development. Prime Minister Pt. J.L..Nehru had said in regard to the importance of industrialization that, ‘Any god which is prayed by all countries is that industrialization, that is machine and that is huge production and best use of natural resources.’ The role of industrialization can be studied under the following heads:

1. **Increase in National Income:** Industrialization provide a sound basis for continuous and rapid increase in income and productivity. Productivity in industrial sector is generally higher due to the possibility of use of advance techniques and possibility of specialization and labour division. Industrialization allows countries to make optimal use of their scarce resources. It increases the quantity and quality of goods manufactured in that company which make larger contribution to gross national products. Thus, industrialization results in the increase of total per capita income. It is a fact that industrially developed economy have much higher per capita income than industrially less developed economy.
2. **Meeting ever increasing demand:** As per capita income increases the demand for foods does not increase as much as demand for industrial goods. Demand for industrial products can be met by increasing industrial production. Thus, industrialization provide goods and thereby overcomes the bottleneck which may arise otherwise
3. **Standard of living:** Worker’s labour is one of the chief factors in an industrialized society. Therefore, with an increase in productivity, the worker’s income increases and so does the standard of living.
4. **Economic Stability:** If a nation considers primary sector as its backbone for economic growth, then it faces a lot of problems. It can never achieve a fast economic growth simply because the demand in this sector is fluctuating, the nature and related factors at times restrict growth and economic progress. This cumulatively leads to an unstable economy. This is why it is important that industrialization is used to provide economic stability.
5. **Improvement in Balance of Payments:** The pattern of foreign trade is greatly affected by industrialization. There is an increase in the demand for export of manufactured goods. Additionally, since the raw material produced as processed in home industries, there is a saving in terms of foreign exchange. The export-orientation and import-substitution effects of industrialization help to improve the balance of payments.

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- 6. Stimulated Progress in Other Sector:** With industrialization comes development in other sectors of the economy. For instance, the construction of milk processing plants adds to the production of ice cream as well.
- 7. Increased Employment Opportunities:** There is an increase in the employment opportunities in different large and small-scale industries. The under-employment and un-employment in the agricultural sector is balanced through the industrial sector thereby increasing the overall income of the community.
- 8. Greater Specialisation of labour:** Specialization of labour gets an impetus from the industrialization process as the division of work becomes important when marginal value product of labour increases. The income of worker employed in the industrial sector on an average is higher than that of a worker involved in the agricultural sector.
- 9. Increase in Saving and Investments:** Along with increasing the worker's income in industrialization, there is also seen an increase in the capacity to save. These voluntary savings give a boost to the economic growth of the country. By cumulative effect, they eventually lead to the further expansion of industry.
- 10. Rise in Agricultural Production:** Industries not only play an important in the economy development of the country. They also affect the agricultural sector of a country. Agricultural development depends to large extent on industries for its growth. Industrialization provides machinery to the farm sectors, including technologies like tractors, threshers, harvesters, bulldozers, transport and aerial spray. These tools, help in improving its productivity and production. The increased use of modern technologies has increased the yield of crops per hectare. It is also because of industrialization that the irrigation facilities, fertilizer and transport facilities have been made available to the agricultural sector. By using modern input the agriculture sector develops at a faster rate. The increase in farmers' income boosts economic development more generally.
- 11. Greater Control of economic activity:** The control and regulation of industrial activity is much easier than that of agricultural activity. This is to say that the industrial production can be increased or stepped back to adjust to the price and cost and demand for the product.
- 12. Larger Scope for Technological Progress:** Technological progress is easily integrated and on-the-job training effortlessly imparted in industrialization. The use of latest technology helps in bringing up the scale of production, reducing costs, improving the quality of the product, and ultimately helps to widen the market.
- 13. Development of Markets:** With the development of industries, the market for raw materials and finish goods widens even within country.

- 14. Rise in Government Revenue:** Both the internal and external markets benefit from industrialization as the supply of goods increases through the process. The export of goods is beneficial in terms of providing foreign exchange, along with increasing the nation's revenue through excise and custom duties along with the taxes. Further the income tax paid by the industrialists also joins the revenue pool of the government further helping in the welfare of the country.
- 15. Decrease in Population Growth:** Industrialization promotes smaller families. This can be seen through the fact that through industrialization there has been seen an increase in the rural-urban migration since there are better opportunities and facilities available in the cities. Additionally, limited means of living in the city along with increase adoption of family planning results in lowering the rate of population growth overall.
- 16. Lead Modernisation:** Industrialization has generated elements of modernization in the form of technical progress, change in attitude of the people, emergence of scientific outlook and industrial culture. Thus, industrialization is essential for the development of technical scientific and professional manpower in the economy, which brings modernization in the country.
- 17. Growth of Infrastructure:** Industrialization also affects the growth of infrastructure. It helps in the construction of railways, dams, power station, communication, other such infrastructure. The infrastructure helps in accelerating the growth of economy.
- 18. Promote Regional Balance:** Industries play an important role in social welfare and attainment of equalities, justice and balance regional development. Regional imbalances are removed by framing inclusive policies in such manner that backward regions have a fair share in the distribution of industries. Some important industries have established in backward regions such as in Madhya Pradesh, Bihar, U.P.
- 19. Lesser Pressure on Land:** The establishment and expansion of industries lessen excessive pressure on land, which is caused by the agricultural sector's labour force.
- 20. Provision for Defence:** If a country is industrialised, it can manufacture arms and ammunition that are necessary for its own self-defence. A country that depends on other nations for its arms supply will eventually suffer and may face a serious defeat.
- 21. Higher export capability:** Industrial products possess high export capabilities. Demand for primary products in the world market today is very low. Therefore, the main way to earn foreign exchange is through increase in export of industrial products. It is only through purposeful industrialization with an eye on export market.

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22. High Potential for Growth: Industrial sector holds the key for rapid growth of an economy. If a less developed economy has to grow, they should go for industrialization on massive scale. This is because manufacturing activity alone has a larger potential for growth. As industries expand they create external economies in the form of reduction of cost and by expansion of facilities. There are considerable incidental benefits in terms of growth of technology. Employment and infrastructure reveals the importance of industrialization in country. The forward and backward linkage of industries leads to an overall growth of the country.

1.5.1 Importance of Industrialization in Indian Economy

Industrialization is the process of manufacturing consumer goods and capital goods and of building infrastructure in order to provide goods and services to both individuals and businesses. Industrialization plays a major role in the economic development of underdeveloped countries like India with vast manpower and varied resources. India is the rich country inhabited by the poor, because natural resources are available in plenty in the country but their suitable exploitation has not taken place. That is why India is in the state of underdeveloped country. Let us discuss in detail importance of industrialization in the Indian economy.

- 1. Rising Income:** Industrial development is considered to be the foundation for ensuring growth in income. There are several statistics which point towards the fact the country with high GNP per capita income is industrially developed, for example the GNP per capita income is very high at around \$ 28000. Whereas for the industrially backward countries it is very low at around \$ 400 only.
- 2. Rapid Economic Development:** The objective of economic plans in India has always have had two-fold motives, one being the development through agriculture and another through industrial development and it has been observed that development through agriculture has a slower rate compared to that of industries. This is why has been a greater push to development industries, this has also been reflected in the 2014 government's push for Make in India policy.
- 3. Changing the Structure:** History has shown us that to ensure that an economy is developed, there is a need to make sure that the share of the industrial sector in the GDP should be on a growing trajectory and that of the agriculture in a downward trajectory. The benefits of the industrial development will trickle down to the other sectors. It is important that there is a deliberate policy in place to bring about industrialization. This will then result into a growth of employment, output and income.
- 4. Meeting High Income Demand:** The share of income the people spend on has a pattern. The need for food is met first and then the rest is spent on purchasing manufactured goods. This means that the income-elasticity of

industrial or manufactured goods is higher than that of agricultural products. Therefore, industrialization is important to not only meet the rising demands but also for increasing the economy's output.

- 5. Increase the Rate of Capital formation:** The rate of capital formation is low in India. The low per-capita income result of this, saving per-capita is also low and suitable areas for investment of saving are not available. Thus by developing industries on one hand production can be increased and on the other hand saving capacity can also be increased and new areas of investment can be created. Likewise through industrialization the rate of capital formation may be increased rapidly.
- 6. Overcoming Deterioration in the Terms of Trade:** There are plenty of problems that underdeveloped countries suffer from in the economy. One of the primary problems is that of over-dependence on primary goods. The prices of these types of goods both very low and mostly stagnant. Manufactured goods, on the other hand, have rising prices and is beneficial for the economy. Industrialization is important as it will ensure that the country gains from trade of these products.
- 7. Employment Generation:** India is a developing country known for its rise in population and the surplus labour. Industrialization becomes a key tool for economies like India, because it creates very high employment opportunities and the surplus labour is easily absorbed in this sector. This also increases the economic output, resulting in rise in income and then more demand and more employment opportunities. Further, industrialization is important as it also contributes to the development of several other service related industries like communication, transport and banking. The betterment of tertiary sector results in creation of more jobs.
- 8. Improvement in the Standard of Living:** Industrial development helps in improving the standard of living in two ways (i) it helps in increasing the income of poor people. As the result their purchasing power rises and they are in the position to purchase many more goods and services in more quantity. (ii) people get new and improved goods and services for consumption.
- 9. Lead Modernisation:** Industrialization has generated elements of modernization in the form of technical progress, change in attitude of the people, emergence of scientific outlook and industrial culture. Thus, industrialization is essential for development of technical scientific and professional manpower in the economy, which brings modernization in the country.
- 10. Development of Backward Industries:** Most of the industries in India are in backward state and they need modernisation and rationalisation. Thus, to have development of backward industries at faster speed there is need of speedy industrialization.

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- 11. Self-dependence:** India is continuously facing the problem of balance of payment. To resolve this problem controlling of imports and increasing of export should be done, which is possible only through industrialization.
- 12. Bringing Technological Progress:** Research and Development is associated with the process of industrialization. The development of industries producing capital goods i.e. machines, equipments etc, enables a country to produce a variety of goods in large quantities and at low costs, make for technological progress and change in the outlook of the people. This results in bringing about an industrial civilisation or environment for rapid progress which is necessary for any healthy economy.
- 13. Balanced Economy of the Country:** To have balanced development of the country, the establishment of agricultural industries, consumer and capital goods industries should be carried out at the same time. Thus to reduce regional imbalances. Industrialization has special importance for Indian economy.
- 14. Improvement in Export Potentialities:** Industrial products possess high export capabilities. Export potential of a country depends to a large extent upon its industrial development. Rate of growth of exports in developed economies have been 6.2% per annum while in under developed countries it has been 3.6% per annum. The main cause of this difference is the difference in industrial development of these countries. Demand for primary products in the world market today is very low. Therefore, the main way to earn foreign exchange is through increase in export of industrial products. It is only through purposeful industrialization with an eye on export market.
- 15. Strengthening the Economy:** Industrialization of the country can provide the necessary elements for strengthening the economy in this regard the following points may be noted-
 - i. Industrialization makes possible the production of goods like railways, dams etc. which cannot be imported. These economic infrastructures are essential for the future growth of the economy.
 - ii. It is through the establishment of industries that one can impart elasticity to the system and overcome the historically given position of a primary producing country. Thus with industrialization we can change the comparative advantage of the country to suit its resources and potentialities of manpower.
 - iii. India is an agricultural dominated country but unfortunately agriculture industry is also very much backward. Through industrialization the requirements for development of agriculture can be met. For example, improved farm implements, chemical fertilizers, storage and transport facilities etc, appropriate to our own conditions can be adequately provided only by our own industries.

- iv. Industrial development imparts to an economy dynamic element in the form of rapid growth and a diversified economic structure which make it a progressive economy.
- v. Providing for security- From the view point of safety and political freedom, every country should be self-dependent in present era, because modern armaments of war can be produced by big ordinance houses. Industrialization is needed to provide for the country's security. This consideration becomes all the more critical when some international crisis develops. In such situation dependence of foreign sources for defence materials is a risky affair. It is only through industrial development in a big way that the national objective of self-reliance in defence materials can be achieved.

From above discussion it is clear that burning problem of India, such as, low productivity, backwardness of agriculture and industries, under developed means of transportation, low rate of capital formation, low living standard, low per capita income and unemployment etc, can be solved through industrialization. Prof. D. **Bryee Murray**, "*industrial development has necessarily and ultimately a large role to play in most any sound development programme.*"

Check Your Progress

5. Why is it said that if a nation considers primary sector as its backbone for economic growth, then it faces a lot of problems?
6. Whose income elasticity of demand is higher: manufactured goods or agricultural products?
7. How does industrial development help in improving the standard of living?

1.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The patterns of industrialization according to trend of growth are forward industrialization and backward industrialization.
2. When the establishment and development of industry is not on some particular location but industries are located in entire areas in a balanced manner such industrialization is known as *Decentralised Industrialization*.
3. Three important factors which influence productivity of labour are ability of workers, wiliness of workers and the environment under which he has to work.
4. Industrialization gets affected due to the nature of product as when the industrialization is followed through manufacturing consumer goods, then

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the speed of the industry will be low. But speed of industrialization will be higher if it followed through manufacturing capital goods industries.

5. If a nation considers primary sector as its backbone for economic growth, then it faces a lot of problems. It can never achieve a fast economic growth simply because the demand in this sector is fluctuating, the nature and related factors at times restrict growth and economic progress. This cumulatively leads to an unstable economy.
6. This means that the income-elasticity of industrial or manufactured goods is higher than that of agricultural products.
7. Industrial development helps in improving the standard of living in two ways (i) it helps in increasing the income of poor people. As the result their purchasing power rises and they are in the position to purchase many more goods and services in more quantity. (ii) people get new and improved goods and services for consumption.

1.7 SUMMARY

- Industrialization is a pre requisite for economic development as the history of advanced countries shows for development the share of the industrial sector should be increased.
- No country desirous of rapid economic progress can afford neglect industrialization. It can help in trade, agriculture, production, transport and other economic activities. Industrialization is the key to economic development. All the advanced country in the world are industrialised. It makes the best possible use of our human and physical resources.
- Industrialization plays an important role in the economic development of a country. In fact that industrially developed economy is also economically prosperous. Thus, development of country originates from industrial development.
- Industrialization is an important for overall growth of the country. It provides a sound basis for continuous and rapid increase in income and productivity.
- Industrial sector generates tremendous employment opportunities for the people. Because of increase in income result in increase in aggregate demand and this means more production and more employment.
- Due to industrialization public welfare increases. It leads higher saving and investment and capital formation thereby creating solid foundation for self sustaining development.
- Industrial sector holds the key for rapid growth of an economy. Industrialization provides a good platform for agriculture.

1.8 KEY WORDS

- **Industrialization:** It is the process of manufacturing consumer goods and capital goods and of creating social overhead capital in order to provide goods and services to both individual and business.
- **Revolutionary Industrialization:** It refers to an industrialization where industrialization of any country takes place at a greater speed and enough changes appear in its old industrial economy
- **Developmental industrialization:** It refers to an industrialization where the industrial economy is not completely abandoned at once but changes are made gradually and industries are developed in modern fashion at its own speed
- **Capital output ratio:** It reflects the number of units of capital which would be needed to produce one unit of production.

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1.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What is industrialization?
2. What are the main objectives of industrialization?
3. What are the characteristics of industrialization?
4. Briefly explain the causes for slow progress of industrialization in India.
5. Define the pattern of industrialization according to size.
6. Differentiate centralised and decentralised industries.

Long Answer Questions

1. Describe the determinants of industrialization.
2. What are the various forms or pattern of industrialization?
3. Explain the main problems on industrialization in India as under developing country.
4. Discuss the factors upon which the speed of industrialization depends. What are the reasons on account of which the speed of industrialization in India is slow?
5. Examine the importance of Industrialization.
6. 'Industrial development in India is largely dependent on her agricultural development.' Comment.

1.10 FURTHER READINGS

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UNIT 2 ORGANIZATION OF FIRMS

Structure

- 2.0 Introduction
- 2.1 Objectives
- 2.2 Meaning of Firm
- 2.3 Individual or Sole Proprietorship or Sole Traders:
Concept, Objectives, Characteristics
- 2.4 Partnership: Concepts, Objectives, Characteristics
- 2.5 Co-operative Society: Concept, Objectives, Characteristics
- 2.6 Joint Stock Company: Concept, Objectives, Characteristics
- 2.7 Public or State Undertakings: Concept, Objectives, Characteristics
- 2.8 Answers to Check Your Progress Questions
- 2.9 Summary
- 2.10 Key Words
- 2.11 Self Assessment Questions and Exercises
- 2.12 Further Readings

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2.0 INTRODUCTION

Firm can be defined as an organization that employs productive resources to obtain products and/or services which are offered in the market with the aim of making a profit. A few key words in this definition deserve further attention. First, all firms are organization but not all organizations are firms. An organization is a complex social system created by people to cooperate in the achievement of some goal. For instance, political party is an organization but its goal is to contribute to positively transform society by means of collectively exerting political power. What distinguishes firm from other organization is the aim of obtaining a profit through selling products and services in the market.

An organization is much wider term. An organization is an entity comprising multiple people, such as an institution or an association that has a collective goal and is linked to an external environment. It could refer to business enterprise as well as non-business, such as charity, a social club among others. It could also be governmental versus the NGOs.

The word organization is derived from the Greek word organon which means 'organ'. There are a variety of legal types of organizations, including corporations, government and non-governmental organizations, political organization, international organization, armed forces, charities, not-for-profit corporations, partnerships, cooperatives and educational institutions.

A business entity/ organization, such as a corporation, limited liability company, public limited company, sole proprietorship or partnership that has products or services for sale is a firm. While most firms have just one location, a

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single firm can consist of one or more establishments, as long as they fall under the same ownership and utilize the same employer identification number(EIN). The title firm is typically associated that practice law, but the term can be used for a wide variety of business operation units, such as accounting.

2.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the meaning of firms
- Explain the objectives and features of public sector firms
- Examine the features of private sector companies
- Describe the characteristics of partnership
- Explain the features of joint stock companies

2.2 MEANING OF FIRM

Firm is referred to professional bureaus offering special type of service such as legal consultancy, accounting and audit services management and financial advisory, etc. Firm is often used interchangeably with business or enterprise. A business organization/enterprise is a person or a group of people working together in pursuit of same commercial interest. The management of a business firm will typically develop a set of organizational objectives and strategy for meeting those goals to help employees understand where the company is headed and how it intends to get there.

A firm makes up an organization. A firm is said to be an inter related part of an organization that works hand in hand to achieve the goal of the organization. In other words, a firm is a commercial enterprise, a company that sells goods or services to customers with the aim of making a profit. In the language of commerce, the term is usually synonymous with company of business.

Types of Firm

There are several types of firms that differ from each other based on their ownership structures.

1. Individual or Sole proprietorship or sole traders
2. Partnership
3. Co-operative Society
4. Joint Stock company
5. Public or State undertakings

Let us discuss the meaning, concept, objectives and characteristics of different organizational forms.

2.3 INDIVIDUAL OR SOLE PROPRIETORSHIP OR SOLE TRADERS: CONCEPT, OBJECTIVES, CHARACTERISTICS

Individual or Sole proprietorship is the oldest and simplest form of business organization. A sole proprietorship is a form of private enterprise that is owned, managed and controlled by one person, and consequently, that person is liable for all costs and obligations. This type of business is also called single ownership or single proprietorship. The sole proprietor arranges the finance manages the business affairs individually. A single man performs twin functions of an organiser as well as that of an entrepreneur. Legally, sole proprietorship is inseparable from its owner and business. The functions of management, supervision and risk taking are performed by the individual proprietor. Labour work is also performed by himself or with the help of his/her family members. In individual proprietorship the owner himself is responsible for the profit and loss. The benefit is that all aspects of the business belong to that person, including all assets. It means there is unlimited liability in the individual proprietorship. Such type of proprietorship is found in small scale industries or in the case of shopkeepers.

Features of the Sole Proprietorship: The main characteristics of Sole Proprietorship are as follows-

- I. Single ownership:** Sole Proprietorship form of organization that is owned by individual.
- II. Individual Management and control:** Such organization is managed and controlled by Sole Proprietor. Competent people can be employed for efficient management of such enterprise.
- III. Individual Financing:** Such organization is finance mainly by the Sole Proprietor.
- IV. Individual Accountability:** Sole Proprietor is sole beneficiary of the profits. He has to bear the losses, if any. In this sense, the Sole Proprietor and employed person are accountable to the Sole Proprietor.
- V. Unlimited Liability:** The liability of Sole Proprietor is unlimited. In other words, if the business assets are not sufficient to meet the business liabilities, his private assets are to be used to discharge the business liabilities.
- VI. Minimum Government Regulation:** There are minimum government regulations to set up such form of organization. For instance, we can start a fruit stall or a cycle/scooter/photocopier shop without much legal formalities. However, in some cases a license may be required to be obtained for example; to start a restaurant, a license from local authority is required.

Merits of Individual or Sole Proprietorship or Sole Traders: The merits of sole proprietorship form of organization are as follows:

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- 1) **Simple Formation:** It is very easy and simple to form sole proprietorship. It does not require legal sanction. There is no specific regulation which governs the formation of sole proprietorship. Anybody can start this type of business according to his capacity and ability.
- 2) **Independence:** In this type of business the owner is altogether independent. He can make any type of transaction as he like without any interference from any other person. There is no check on his approach toward his project.
- 3) **Quick Decisions:** As the sole proprietor does not require much consultation or approval, he takes quick decisions on various matters relating to business operations. This makes functioning of business simple and easy.
- 4) **Complete Control:** The proprietor in this type of business exercises full control over the functioning and working of the business.
- 5) **Personal Incentive:** Since the risk is entirely his own responsibility; the owner has personal incentive for hard work in order to get more profits. He works long and late hours with full care and encouragement. Such hard work is bound to produce good result.
- 6) **Easy to Supervise:** An individual proprietorship has a small size which one can easily supervise and handle without much difficulty.
- 7) **Need of Small Capital:** Sole Proprietor has the advantage of starting the business with a comparatively small amount of capital. Person who has small capital but high qualities of enterprise can easily start the business.
- 8) **Flexible Management:** The sole proprietor can easily bring about changes in the size and nature of activity according to changing conditions. This gives flexibility to business.
- 9) **Suitable for Small Scale Operation:** The sole proprietorship is very suitable for small scale operations. Such a business is also entitled to get certain concessions from government. For instance, a small industrial unit may get loan at lower rates of interest, water and electricity at concessional rates.
- 10) **Direct Relations with Consumers:** The entrepreneur establishes close and direct relationship with customers and can satisfy them easily. He can produce the goods according to the taste of his customers. Customers can also place orders of their liking directly to the entrepreneur.
- 11) **Business Secrets:** In sole proprietorship the secret of business do not leak out. Full secrecy can be maintained since business secrets are known to the proprietor only.
- 12) **Sole Receiver of profit:** All profits of business belong to sole proprietor. This motivates the proprietor to work hard and develop; the business to get more and more profits since there is direct relation between efforts and reward.

13) No Danger of Labour Disputes: The individual proprietor generally does not have many employees. He selects them personally and comes to know their grievances or problems, etc., on the spot and tries to remove them. It leads to personal contract between the two and results in higher efficiency and productivity. Every employee gives a personal touch to his work. It avoids the danger of labour dispute like strikes and lock out.

14) Easy to Dissolution: It is very simple to dissolve sole proprietorship. This is so because the proprietor is the only person concerned. He is not compelled to run the business. He can easily dissolve the present business and can start new one. There is no specific regulation which governs the dissolution of sole proprietorship.

Demerits of Individual or Sole Proprietorship or Sole Traders: Individual or Sole proprietorship has the following demerits-

- 1) Lack of Division of labour:** Being a small business, there is less scope for division of labour so production cannot be done efficiently and rapidly. It remains confined to small scale.
- 2) Limited Financial Resources:** The sole proprietor has limited capital and has limited capacity to raise funds because of limited personal assets. This limitation reduces the scope for expansion and growth of business.
- 3) Unlimited Liability:** The sole proprietor has an unlimited liability. He is personally liable for all business debts. He is fully responsible for his profit and loss. He fears that his own capital may be lost in case of loss. Therefore, he hesitates to take certain bold decision and risk because of unlimited liability.
- 4) Limited Managerial Skill:** The sole proprietor has limited managerial skill and need not possess expertise in all areas like production, finance and marketing. Limited managerial skill reduces the scope for efficient management, expansion and the growth of business.
- 5) Difficulty of Large Scale Production:** In this type of organization the entrepreneur lacks capital and other factors of production. Being alone he cannot supervise properly so he cannot have large scale production.
- 6) High Cost of Production:** Being a small scale production the proprietor cannot reap the benefits of the economies of large scale production. It results in the high cost of production and higher prices. All this makes an adverse effect on the demand for his products.
- 7) Less Possibility of Use of Machines:** Generally, the individual proprietor feels difficulty in getting capital. Production is carried on a small scale. Therefore, he cannot install modern machinery. Thus, individual proprietor has a very limited scope of using heavy and modern machinery.

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- 8) Difficulty of Credit:** There is much difficulty in getting finance. For this type of organization, the banks of other financial institutions hesitate to advance loan to an individual proprietor, because of his less credit worthiness. Therefore, either he is not able to get loans or if at all he gets, it is at a higher rate of interest.
- 9) Lack of Technical Development:** One of the disadvantages of the individual proprietorship is the lack of technical development. Methods of production remain backward because of insufficient capital and other factors of production. Due to the unlimited liability on his head, he cannot bear the expenses of research and technical innovations.
- 10) Difficult to Face Economic Crisis:** An individual proprietor has limited factors of production at his disposal, whereas his liability is unlimited. He cannot face heavy losses or economic crisis for a long period in the event of such adversities he has to close down his business.
- 11) Lack of Continuity/Stability:** Such form of organization suffers from lack of continuity/stability since the continuity and stability of the business depends solely on one person. The illness of the proprietor may cause temporary closure of business and the death of the proprietor may cause the permanent closure.

2.4 PARTNERSHIP: CONCEPTS, OBJECTIVES, CHARACTERISTICS

As a form of business organization, partnership has a much wider scope as compared to the individual proprietorship. When two or more than two persons join to start and run a business on the basis of their common and shared responsibility in the matter of profit or loss, it is called the partnership. In other words, the individual proprietorship is converted into partnership if one person or more than one person are taken as partners in the business. Partnership generally takes place among those persons who either relatives, friends or known to each other.

Partnership is an association of persons who agree to combine their financial resources and managerial abilities to carry on a business and share the profits in an agreed ratio.

The persons who have entered into partnership with one another are called individually 'partner' and collectively a 'firm' and the name under which their business is carried on is called the firm's name.

According to Section 4 of The Indian Partnership Act, 1932: "*Partnership is a relation between two or more persons who have agreed to share the profits of a business carried on by all or any of them acting for all.*"

Features of Partnership

Following are the main features of partnership:

I. Two or More Persons: There must be at least two persons to form a partnership but all such persons must be competent to contract. According to Section 11 of the company Act 1872, every person except the following is competent to contract:

- (A) Minor
- (B) Persons of unsound mind (e.g. lunatics, idiots)
- (C) Person disqualified by any law to which they are subject (e.g. alien enemies, insolvents)

However, the Partnership Act is silent about the maximum number of members that partnership any have. It is a section 464 of the company Act, 2013 which gives us the maximum limit. It states that (1) No association or partnership consisting of more than such number of persons as may be prescribed shall be formed for the purpose of carrying on any business that has for its object the acquisition of gain by the association or partnership or by the individual members thereof, unless it is registered as a company under this Act or is formed under any other law for the time being in force. The maximum limit is 100 and the currently notified 50.

II. Agreement: It is imperative that there be present an expressed or implied agreement to form a partnership. Section 5 of the Partnership Act prescribes the rules regarding this agreement. It specified that the agreement in partnership arises from a contract and not status. Partnership is voluntary and contractual in nature.

III. Business: A partnership requires the existence of a business. Section 2(b) defines business as every trade, occupational and profession. Take for instance the case where two or more people share the income from a joint party. This agreement will not be called a partnership as there is no business which exists in the relationship. Further, associations formed to carry out charitable, religious, or social activities cannot be deemed as partnership because there is no business. It should also be noted here that if there is a future promise or agreement to carry on business at a future time, it cannot be called a partnership until that time arrives and the business is started.

IV. Profit Sharing: Unless specified otherwise, there must be a sharing of profits and losses. It should also be noted that sharing of profits forms as a prima facie evidence and not a conclusive evidence of the existence of a partnership. This implies that, everyone who shares the profits of business need not necessarily be a partner of his remuneration but is simply an employee and not a partner.

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V. Mutual Agency: The existence of mutual agency relationship among the partners is essential to a partnership. A mutual agency relationship means that each partner functions as both an agent and a principal in the partnership. Being an agent implies that partner is bound by the acts of other partners.

VI. Unlimited Liability: Partners have unlimited liability since the liability of the partner is joint and several. In other words, they are collectively and individually liable to the creditors of the firm. If the firm's assets are not sufficient to meet firm's debts, then firm's creditors can recover their debts from the private assets of one or all the partners.

VII. Joint Ownership and Control: Firm is owned and controlled jointly by the partners since every partner has a right to take part in the management of the business.

VIII. Non-transferability of Share: A partner cannot transfer his share in partnership to any other person without the consent of all other partners.

IX. Duration of Partnership: The partnership may or may not have a particular duration depending upon the provision in the partnership agreement or mutual consent of all partners.

Types of partners: A person who deals or intends to deal with a firm must know who the partners are and to what extent each partner is liable. To ascertain the extent of partner's it becomes necessary to know the various types of partners.

i. Actual or Ostensible: He takes an active part in the conduct of the business. He along with other partners is liable to the third parties for the entire firm. He must give public notice of his retirement. His insanity or permanent incapacity to perform his duties may be a ground for the dissolution of the firm.

ii. Sleeping or Dormant partner: He does not take an active part in the conduct of the business. He along with other partners is liable to third parties for all acts of the firm. He need not give public notice of his retirement. His insanity or permanent incapacity to perform his duties is no ground for the dissolution of the firm.

iii. Nominal Partner: He lends his name to the firm without having any real interest in the firm. He neither contributes to the capital nor shares the profits or takes part in the conduct of the business of the firm. He along with other partners is liable to third parties for all acts of the firm as if he is an actual partner. He must give public notice of his retirement. His insanity or permanent capacity to perform his duties is no ground for the dissolution of the firm.

iv. Partner in Profit Partner: He share the profits only and not losses. He along with other partners is liable to third parties for all act of the firm. He must give public notice of his retirement. His insanity or permanent incapacity to perform his duties may be a ground for the dissolution of the firm.

- v. **Sub-Partner only:** He is a third person with whom partner agrees to share profits derived from the firm. He has no right against the firm nor is he liable for the acts of the firm. Here, there is no question of public notice at all since he is a third person and not a partner. His insanity or permanent incapacity to perform his duties is no ground for the dissolution of the firm since he is third person and not a partner.

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Merits of Partnership: Following are the merits of partnership-

- 1) **Easy formation-** It is very easy and simple to form partnership. The essential elements required to form partnership are at least two persons having capacity to contract, an agreement lawful business, sharing of profit and mutual agency.
- 2) **Careful Decisions:** Under the partnership, decision is not taken by an individual but by all the partners after a great deal of discussion. It reduces the chances for wrong decisions.
- 3) **Division of Work:** This management of business is not done by a single person but it is divided among different partners. It creates division of work and they can make better supervision of the business.
- 4) **More Capital:** More capital can be invested than in case of individual proprietorship.
- 5) **Large Scale Production:** The sources of business are increased due to many partners. By investing a huge amount of capital, these partners can reap the advantages of large scale of production.
- 6) **Division of Labour:** The division of labour become easy under the partnership because of the large-scale production. Thus, these partners can reap the benefit of labour division also.
- 7) **Use of Machines:** Due to availability of sufficient amount of capital and production being on large scale, the use of machine can be increased under the partnership. It leads to the low cost of production and rapid production.
- 8) **Personal Interest:** Each partner takes personal interest in the business, because he has an unlimited liability and has to bear the risk of profit or loss. Therefore, every partner takes full personal interest in the business.
- 9) **Easy credit:** It becomes easy to get credit in the partnership because the responsibility of repayment of loans does not rest on an individual but on all the partners. The creditor feels more secure in advancing loan to them than to the individual proprietor.
- 10) **More Financial Resources:** A partnership facilitates pooling of financial resources of all its partners. This increases the scope for expansions and growth of business.
- 11) **More Managerial Skill:** A partnership facilitates pooling of managerial skill of all its partners. This increases the scope for efficient management,

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expansion and growth of the business. For example, a partner having experience of production can look after production activity, a partner having the experience of marketing can look after marketing activities.

- 12) Flexible Management:** The partner can easily bring about changes in the size and nature of activity according to changing conditions. This gives flexibility to business.
- 13) Sharing Risk:** The risks of partnership business are shared by partners on agreed basis. Hence, the share of loss in case of each partner will be less than that sustained in sole proprietorship. This motivates partners to undertake risks but profitable business activities.

Demerits of Partnership: Partnership has its demerits also, which are as follows-

- 1) Lack of Mutual Confidence:** The success of partnership depends upon the mutual confidence of the partners. They may have mutual confidence at the start of business, but it may go on shaking and may even collapse one day. In the absence of mutual confidence, the business gets a set-back and may be closed down.
- 2) Personal Disputes:** Partnership leads to several personal disputes which in turn disturb the proper functioning of the business.
- 3) Difficult to Separate:** No partner can sell his shares to others according to his wishes. Therefore, one cannot separate from the business without permission of other partners.
- 4) Delay in Decision:** Sometimes partners do not agree with each other on a particular issue and the decision may not be reached for lack of consent. There is scope for misunderstanding and conflicts in the partner. Such conflicts may lead to delays in decision-making and may lead even to dissolution of the firm. When some partners adopt rigid attitudes, it becomes impossible to arrive at a commonly agreed decision. It makes unnecessary delay in decisions and the business adversely affected.
- 5) Lack of Responsibility:** Under partnership, every partner is equally responsible in the business. It is generally said that 'every man's responsibility is no man's responsibility'. So, lack of responsibility is a hindrance in the way of the business prosperity.
- 6) Unlimited Liability:** There is less possibility of taking risk because of the unlimited liability under the partnership.
- 7) Difficult to Close:** When one or more partners want to leave the business or want to close down the business, the difficulty arises in the distribution of assets.
- 8) Uncertainty:** The existence of the partnership is quite uncertain. The business is generally closed down due to the misunderstanding or the death or insolvency of a partner. Thus, the future of the partnership is quite uncertain.

Check Your Progress

1. What does unlimited liability mean in individual proprietorship?
2. State the meaning of sharing of profits in partnership as a prima facie evidence of partnership.

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2.5 CO-OPERATIVE SOCIETY: CONCEPT, OBJECTIVES, CHARACTERISTICS

Cooperative is ‘an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise’. In modern times, a co-operative enterprise is one of the important forms of business organization. When a few persons, who are known to each other, start business on co-operative basis, it is called a co-operative society. A few persons combine and make a co-operative society. There must be minimum 11 person in India to form a co-operative society and they may submit an application for the establishment of a co-operative society to the Registrar of Co-operative Societies. A co-operative society is established after the approval of the Registrar. There is no maximum limit of membership. In brief, a co-operative society comes into existence when people work together by pooling their resources for a business purpose on the basis of mutual benefits.

Co-operative organization is a voluntary association of person who come together to promote their common economic interest through the principle of self-help and mutual help. Mutual held means each for one and all the for each. According to Sec. 40 (f) the Indian Co-operative Society Act, 1912: *Cooperative society is a society which has its objectives the promotion of economic interest of its members in accordance with cooperative principle.*

Features of Co-operative Organization: The main characteristics of co-operative organization are as follows:

- I. Voluntary Association-** A co-operative organization is a voluntary association in the sense that person voluntarily come together to promote their common interest with any coercion or under influence. Any person having a common interest can become a member. A member can leave the society as and when he decides after giving proper notice.
- II. Equal Rights-** Every member of the co-operative society has equal rights. Everyone is given equal opportunity in the management of the society. Each member is equipped with the right to vote in the election of its office bearers.
- III. One for All and All for One-** The co-operative enterprise is formed on the basis of one for all and /all for one. Every member co-operates with others in the functioning of the enterprise.

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IV. Self-Sufficiency- A co-operative enterprise is started with the initial aim of self-sufficiency.

V. Mutual Help- The main motto of the co-operative society is of mutual help and to impart the training of honesty and co-operative among the members.

VI. Honorary- The directors of the co-operative society are elected from among its own members who work honorary in the society.

VII. Democratic Principle- One of the main characteristics of this enterprise is that it functions according to democratic principles. Its office-bearers are properly elected by its members.

VIII. Joint Benefits- Members are acquainted with each other and they work for a common end or joint benefit.

IX. Democratic Management- The management of co-operative organization vests in a managing committee which is elected by the member in the annual general meeting. The general body lays down the broad framework of policy within which the managing committee has to function.

X. Distribution of Surplus- Its profits are distributed in the form of dividend and bonus. After giving dividend on shares, and transferring a portion of profits to reserves, surplus profits are distributed by the way of bonus, such bonus is given in the proportion of the volume of business transacted by each member with the co-operative society. For example, in case of a consumer co-operative society, bonus is paid in the proportion of the purchase made by the member from the society. In case of producer co-operative, bonus is paid in the proportion of the good delivered for sale to the society.

XI. Economy- A co-operative society enterprise is started on economical basis. Investment is done up to a certain limit. Expenditure is incurred according to own financial resources.

Forms of Co-operative Society- The co-operative enterprise has different forms or kinds which are explained as below-

i. Co-operative Credit Society- These societies are formed to give financial and credit facilities. The members of the society deposit their savings with the society and takes loan from the society whenever the need arises.

ii. Producers Co-operative Society- When few persons with small capital form society to start their own business; it is called producers co-operative society. Generally, workers start such a society for small scale production.

iii. Consumer's Co-operative Society-The consumers of locality or a town join together, collect the necessary capital through shares and start a store. The co-operative store sells those goods which have common demand in the locality. These stores are called consumer co-operative stores. They

sell better quality goods at cheaper prices. Profit of the society is divided among its members at the end of the year.

- iv. **Marketing Co-operative-** To protect from exploitation by the middle men it marketing their products. To ensure a steady and favourable market for the output of its members.
- v. **Farming Co-operative** – When small farmers who want to cultivate their land collectively, pool together their land and capital it is called co-operative farming societies. Small farmers purchase raw material or input for agriculture, e.g. seeds fertiliser and other goods and sell their output. Every member of the society is paid profits according to his contribution of land and capital in the production.
- vi. **Multiple Co-operative Societies-** These societies are formed for multiple or various purpose for example, for providing for credit facilities to farmers, marketing of agricultural products, purchase of agricultural inputs and machines, etc. such societies are called Multiple Co-operative societies.

Merits of Co-operative Societies- A co-operative society has the following advantages-

- 1) **Less capital-** Persons or workers with small capital can start business under the co-operative enterprise.
- 2) **Saving-** It encourages saving among the members of the society, because they can make profit by investing their savings in the business.
- 3) **Training in Management-** It imparts training in management because the workers themselves manage the business.
- 4) **Less Scope of Manipulation-** The accounts of co-operative enterprises are checked by the auditors which reduces the chances of manipulation of the account.
- 5) **Reduction in Inequalities-** A co-operative enterprise helps in reducing the inequality of income and wealth in the country. It avoids exploitation as the profit is distributed among the share-holders.
- 6) **Incentive to Hard Work-** When workers start business on co-operative basis and get their due profit. They get an incentive for hard work.
- 7) **End of Class Conflict-** A co-operative enterprise abolishes the difference between the employers and the employees and there remains no chance of class conflict, because the workers themselves are the owners.
- 8) **Habit of Thrift-** It encourages thrift among the members. They do not do superfluous expenditure and save more to invest in the business.
- 9) **Use of Modern Techniques-** Adoption of the co-operative of the co-operative farming in cultivation facilitates the use of modern techniques, and modern agricultural implements. It raises the productivity as well as income of the members of the society.

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10) Democratic- A co-operative society is called as a friend of democracy because it is managed on democratic principle.

11) Less Expenditure- A co-operative enterprise involves less expenditure as its management is done by the directors on honorary basis.

12) Moral and Social Benefits- A co-operative enterprise is most useful from the moral and social point of view. It encourages the spirit of co-operative among the members of the society. They have a broader social outlook. The development of co-operative makes good citizens in the country.

Demerits of Co-operative Societies- A co-operative society has the following disadvantages-

1) Lack of Efficient Managers- It is not necessary that elected director may be efficient have complete knowledge of management. Generally, the efficient managers are rarely found in a co-operative society.

2) Lack of Interest- If the co-operative society fails to fulfil the requirements of its members; they lose faith in the society. They develop an indifferent attitude towards the enterprise.

3) Inability to Face Economic Crisis- A co-operative society has limited resources and thus is unable to face economic crisis.

4) Less Capital- A co-operative society is generally started by poor persons who lack capital. They face difficulty in collecting capital, if need arises. Therefore, the co-operative society is always discouraged due to the lack of capital.

5) Corruption- The directors of the society create corruption and favouritism in the working and the management of the enterprise by helping their relatives and friends.

6) Mutual distrust- The election of the co-operative society brings in the party system which results in the mutual distrust and disputes.

7) Unnecessary Criticism- Every member wants to have complete knowledge about management, because he has equal rights. After knowing it he starts criticising the director unnecessarily which creates difficulty in the management.

2.6 JOINT STOCK COMPANY: CONCEPT, OBJECTIVES, CHARACTERISTICS

The term 'company' implies an association of number of persons formed for some common object or objects. Joint Stock Company is one of the most important forms of business organization of the modern age. There are certain large-scale enterprises which cannot be operated on the basis of the individual proprietorship or partnership. To start such an enterprise a huge amount of capital is collected by

a joint stock company. It is an extended form of the partnership business. When a number of persons, who are unknown to each other, join together to invest their money in some common business, it is called the joint stock company.

According to Sec.3 (1)(1) of the Company Act 1956 “Company means a company formed and registered under this act or an existing company. An existing company means a company formed and registered under any of the previous companies act.

According to Chief Justice Marshall- “*A company is a person, artificial invisible intangible and existing only in the eyes of law. Being a mere creature of law. It possesses only those properties which the charter of its creation confers upon it, either expressly or as incidental to its very existence.*”

According to Lord Justice Lindley- “*By a company is meant an association of many persons who contribute money or money’s worth to a common stock and employs it in some trade or business, and who share the profit and loss arising therefore. The common stock so contributed is denoted. The persons who contribute it, or to who it belongs are called members. Their proportion of capital to which members are entitled is his share. Shares are always transferable although the right to transfer them is often more or less restricted.*”

According to Lord Haney- “*A company is an incorporated association which is an incorporated association which is an artificial person created by law, having a separated entity with a perpetual succession and a common seal.*”

From the above definitions, it is clear that a company has a corporate and legal personality. It is an artificial person and exists only in the eyes of law. It has an independent legal entity, a common seal and perpetual succession.

Formation of Joint Stock Company- A Joint Stock Company is formed according to the laws of the country. There should be at least 7 persons to form a joint stock company. In the beginning these seven persons, known as ‘Promoters’, prepare the plan of the company. After preparing the plan, they submit an application to the registrar of Joint Stock Companies seeking permission to establish such company along with two documents, such as:

- **Memorandum of Association-** The memorandum of association consists of the name, purpose, types of shares and amount of capital etc. of the company.
- **Articles of Association-** The second document consists the details of by-laws of the shareholders meeting, timing of meeting, procedure of election of officers among shareholders. Minor details regarding the rules and procedures or by laws of the company are also given in it.

These two documents are submitted to the Registrar to joint stock companies who grant permission to form such a company if the prescribed conditions according to the law are fulfilled. His orders are known as the ‘Certificate

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of Incorporation.' After obtaining certificate the company starts selling its shares and collects capital to establish the company. The shares of company can be various types.

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Features of Joint Stock Company- A joint stock company has following features-

I. An Artificial Person Created by Law- A Company is called an artificial person because it does not take birth like a natural person but forms in into existence through law. Being the creation of law, the company possesses only those properties which are, conferred upon it by memorandum of association. Within the limits of powers conferred by its memorandum of association it can do all acts as a natural person can do.

Like a natural person

- The company can enter into contracts.
- The company can enforce the contractual rights against others.
- The company can be used in its own name.
- The company can be owned and hold property in its own name.
- The company has nationality. The registration of a company in a country determines the nationality of that company to that country.

Unlike a natural person

- The company has no physical shape or form.
- The company cannot shake by hand.
- The company cannot marry.
- The company cannot take oath.
- The company cannot commit a crime.
- The company cannot be sent to jail

II. Legal Existence- A Joint Stock Company has legal existence. The company stands as an individual. The company is a legal person and it can be sued upon as an individual in the court of law for any wrong deed or action or it can sue any person.

III. Limited Liability- The liability of every shareholder is limited to the extent of his shares. If the company fails the share-holders or owners are liable to lose only what they have paid for their share. The creditors do not have any claim on the personal property of the shareholder.

IV. Democratic Management- A Joint Stock Company is managed by the Board of Directors which is elected by its shareholders through the democratic system of casting vote.

V. Collective Ownership- The Company is not owned by a single person but collectively by all the shareholders to the extent of their shares. A shareholder can neither withdraw his capital equivalent to his shares, nor can demand

his shares. The most he can do is that he can sell his share or shares to another person, who becomes the shareholder or a joint owner of the company. Shares have a ready market in terms of stock and exchange market where any number of share can be sold or purchased at the current price.

VI. Perpetual Existence-The term ‘perpetual existence’ means the continued existence. The death, insolvency or unsoundness of mind of its members or transfer of shares by its members does not any way affect the existence of the company. Members may come and members may go but the company goes on forever. Company can be compared with a flowing river where water (members) keeps on changing continuously still the identity of river (company) remains the same. The company continues to exist even if all its human members die. According to Gower, even a hydrogen bomb cannot destroy a company. Since it is created law, it can be brought to an end by the process of law.

VII. Common Seal- The term common seal means the official signature of the company. Since the company being an artificial person cannot sign itself are on a document, every company is required to have its common seal with its name engraved on the same. This seal acts as the official signature of the company. Any document bearing a common seal of the company and duly witnessed by at least two directors will be binding on the company.

Different Forms of Company:- Different types of company can be grouped as under

I. Companies on the basis of Control:-On the basis of control companies may be divided as follow:-

- **Government Company:-** According to Section 617 of the companies Act, a government company means any company in which at least 51 percent of the paid up share capital is held by the government
- **Non-government Company:-** A company which may not be termed as a government company as defined in section 617 is regarded as non-government company.

II. Companies on the basis of liabilities: On the basis of liabilities companies may be divided into the following three categories:

- **Company Limited by shares-** In this type of company liability of its members is limited by its memorandum to the amount unpaid on the shares respectively held by them. The company limited by shares may be either public companies or private companies.
- **Company Limited by Guarantee:-** A company limited by guarantee is company in which the liability of its members is limited by its memorandum to such amount as the members may respectively undertake to contribute to the assets of the company. Such company are formed

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for the promotion of commerce, art, science and other useful objects. The company limited by guarantee may be either public companies or private companies.

- **Unlimited company:** - Unlimited company is a company in which the liability of its members is not limited by its memorandum. In other words, there is no limit on the liability of members. Such company may also be either public companies or private companies.

III. Companies on the basis of Incorporation:- These company may be divided into the following categories-

- **Chartered Company-**A company is incorporated under a special charter granted by king or queen of England is called chartered company. This company is regulated by its charter and the company act is not apply on it. This type of company cannot be formed in India now.
- **Statutory Company:** Statutory company is created by a special Act of parliament of a state legislature. Such company need not memorandum of association
- **Registered or incorporate company:-** A registered company is one which is registered accordance with the provisions of Companies Act, 2013. A registered company may either be private company or a public company.

IV. Companies on the basis of Number of Members:- Companies on the basis of Number of Members may be divided into two parts-

- v **Private Company:-** According to section 3(1)(iii) of the company Act 1956, a private company means a company which has minimum paid up capital of Rs 1,00,000 or such higher paid up capital as may be prescribed and which by its Articles-
 - Restricted the right of transfer its shares if any.
 - Limited the number of its members to 50.
 - Prohibits any invitation or acceptance of deposits for persons other than its members.
- v **Public Company:-** According to section 3(1)(iv) of the company Act 1956, Public company means a company which is not a private company. A public company may be said to be an associated with-
 - Consists of atleast 7 members.
 - A company has a minimum paid up capital of Rs 5,00,000 or such higher paid up capital as may be prescribed.
 - Company does not restrict the right to transfer its shares,
 - Does not prohibit any invitation to subscribe for any shares in or debentures of the company.
 - Does not prohibit any invitation or acceptance of deposit.

V. Companies on the basis of Nationality:- On the basis of Nationality companies may be divided into two parts-

- **Domestic Company-** A company which cannot be termed, as foreign company under the provision of the Companies Act should be regarded as a domestic company.
- **Foreign Company:-** A foreign company means a company which is incorporated in a country outside India under the law of the country. After the establishment of business in India, the following documents must be filed with the Registrar of companies within 30 days from the establishment:
 - A certificate copy of the charter or statutes under which the company incorporated, or memorandum and articles of the company translated in English.
 - Full address of registered office of the company.
 - A list of directors and secretary of the company.
 - The name and address of any person resident of India who is authorised to accept, on behalf of company, service of legal process and any notice served on the company
 - Full address of the company's principal place of business in India.

VI. Companies on the basis of freedom:- On this basis company may be divided into three groups

- **Independent Company:-** These are those companies that are free from outside. These companies neither controlled by other company nor controlled and managed other companies. In many cases, independent company are sole proprietorship.
- **Holding company:-** When one company is in a position to control the management of another company the former is called a Holding Company.
- **Subsidiary Company** –According to section 4(1) of the company Act 1956, company becomes the subsidiary of another if-
 - That another company controls the composition of Board of Directors;
 - That another company holds more than half of the nominal value of its equity capital
 - where preference shareholders have equal voting rights with equity shareholder, controls more than half of the total voting power

Merits of a Company- The merits of Joint Stock Company are as follows:

- 1) **Limited Liability-** Having limited liability of the owners, the person who fears risk may also invest capital in the business. The shareholders are not liable to pay anything more than the face value of their shares. Therefore, the company can start the business which may have even greater risk.

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- 2) **Large Capital-** Unlike individual proprietorship or partnership a joint stock company can arrange capital in large quantity. It can obtain capital easily and even at a lower rate of interest by floating its shares in the market.
- 3) **Large Scale of Production-** The large-scale production can be established on the basis of the joint stock company. Thus, company can reap all the advantages of large scale production.
- 4) **Long Life-** The Company has long life or its of more permanent nature. It does not make any difference to the company if the death of a share-holder occurs or he sells his share to another person. The shareholders may change, but the company functions normally.
- 5) **Long Period Project-** A Joint Stock Company is the most suitable for the project which have a large gap between the investment and the production of goods. An individual proprietor or partnership firm never has the courage to invest in such a long period projects.
- 6) **Easy to Separate-** Unlike individual proprietorship or partnership, its shareholders can separate from the company by selling their shares to other.
- 7) **Benefits of Small saving-** One can invest his small saving of even Rs 100 by purchasing share of the company. In this way small saving can be utilised in the large-scale productions which build the strong base of the company.
- 8) **Easy to Increase Capital-** It is quite easy for a joint stock company to raise more capital whenever required, by floating new shares and selling debentures in the market.
- 9) **Spread of Risk-** The risk of a company is spread over a large number of shareholders. Risk is not limited to a few persons but is spread over all the owners of the company. One can diversify his risk by purchasing the share of different companies.
- 10) **Free Transferability of Shares-** The shares of the public company are freely transferable. Shareholders can sell their shares whenever they need cash or want to buy share of another more profitable company. Thus, free transferability of shares provides liquidity to member's investment.
- 11) **Public Confidence-** A company enjoys confidence and trust of the public since it is required to submit various documents, returns, resolutions and reports with the regular. The filed documents are available for public inspection in the registrar's office.
- 12) **Champion of Democracy-** The Company is managed or run on democratic system. The shareholders elect the 'Board of Directors.' They can change the directors if they are dissatisfied with their performance. They can make open criticism of the wrong and unsuitable policies of the board in their annual general meeting.

13) Service of Able Persons- Persons who do not have capital but are rich in managerial or business ability are appointed as managers, etc. Thus, a company can take advantage of the service of able and efficient persons.

14) Economic and Technical Development- The emergence of Joint Stock Companies has facilitated large scale production which has helped the economic and technical development. Having huge capital and more resources, it can spend them for research on new methods of production and modern type of machines.

Demerits of a Company- The demerits of Joint Stock Company are as follows-

- 1) Lengthy and Expensive Procedure for Formation-** Formation of a company (e.g. Memorandum of Association and Articles of Association and Statutory Declaration) is required to be prepared and filled. It is expensive in the sense that heavy fees for the preparation of required documents and for registration is required to be paid.
- 2) More Government Regulations-** A company is required to comply with various legal formalities at every stage of its working and to penalty for non-compliance of the legal requirement. It is required to spend considerable time and afford in complying with the various legal requirements.
- 3) Separation of Organization and Enterprise-** In the joint stock company, shareholders are the entrepreneurs and the paid managers are the organisers. This separation of organization and enterprise is harmful because the managers do not safeguard adequately the interest of the entrepreneurs.
- 4) Danger of Monopoly-** The joint stock company can create monopoly in the market. Sometimes a few companies producing similar goods form a union and create monopoly. They exploit the consumers by charging higher prices because of the monopoly.
- 5) Lack of Interest of the Share-holders-** The shares of the company are quite scattered and the transferability of shares kills the interest of shareholders in the company. They become indifferent towards the company affairs and leave all the functions to the directors, who usually promote their own interest at the cost of the company.
- 6) Inequalities –** The dividend of the company is distributed among the shareholders. Labourers, who are more in number, are paid fixed wages. Generally, a single person purchases a majority of shares and takes away a large part of the total dividend. It leads to the unequal distribution of wealth and income in the country.
- 7) Development of Capitalism-** The joint stock company facilitates large scale production which strengthens capitalism.

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8) Burden of Taxes- The owner has to bear a heavy burden of taxes in case of joint stock company. First, the company has to pay corporation tax on its dividend and secondly, shareholders have to pay again income tax on their income from shares.

9) Speculation- Limited liability and free transfer of shares give birth to speculation in the market. Economic activities are adversely affected due to the speculation or change in the value of shares.

10) Delay in Decision-Making and Action-For a company, decision making process is time consuming since all important decisions are taken by either the Board of Directors or shareholders in their meeting and it is difficult to arrange meeting all of sudden. The delay in decision making may result in loss of business opportunities.

11) Labour Disputes- In the joint stock company, there is no close contact between workers and the actual owners who are share-holders. The paid managers do not pay proper attention to get workers' co-operation. The owners do not have knowledge about the workers' problems. The grievances of the workers burst into labour disputes e.g. strike, lock-out and industrial disturbance etc. Labour form trade unions and fight collectively against the owners of the company.

12) Exploitation of the Shareholders- Generally, the common shareholders lack complete information and knowledge of the company's affairs. The directors of company then make exploitation of the innocent share-holders.

13) Corruption- Corruption, favouritism and biasness become the essentials of a joint stock company. The directors of the company encourage corruption at higher levels to change the economic policy of the country in the direction favourable to their company. In matters of high level appointments lies the secretary or the managing director, etc., their own relatives or known persons are appointed.

14) Disadvantages of Large Scale Production- In the joint stock company, production is undertaken on a large scale. Thus, internal and external diseconomies, defects of division of labour and demerits of use of machinery etc., are commonly found in the joint stock company.

Difference between joint stock company and partnership- A joint stock company is formed by a large number of shareholders, whereas in partnership only a few shareholders or partners join to run the business. There are many differences in them which are explained as under-

Table 2.1 Joint Stock Company Vs. Partnership

S.N	Basis	Joint Stock Company	Partnership
1	Minimum No. of Members	In Joint Stock Companies, Minimum number is two in a private company and seven in a public company.	Minimum number of members is two in a Partnership firm.
2	Maximum No. of Members	In a Joint Stock Company, maximum number of members is 50 in a private company and there is no maximum limit in public company.	In a Partnership firm, maximum number of members is 20 in general business and 10 in banking firms.
3	Registration	Registration of Joint Stock company is compulsory.	Registration of a Partnership firm is not compulsory.
4	Separate Legal Existence	Joint Stock Company has separate legal existence. It is an artificial person created by law.	Partnership firms have no separate legal existence. Partnership Firm and partners are the same.
5	Legislation	Joint Stock Company is regulated under the Companies Act, 2013.	Partnership firm is regulated under the Partnership Act, 1932.
6	Capital	There is possibility of securing huge capital in case of Joint Stock company.	Huge capital for partnership firm cannot be secured.
7	Liability	In a Joint Stock Company, liability of each shareholder is limited	In a Partnership firm, liability of each partner is unlimited, joint and several.
8	Transfer of Shares	In case of Joint Stock Company shares can be transferred freely.	Transfer of shares is not possible without the consent of all the partners in a partnership firm.
9	Management	In a Joint Stock Company, management will be in the hands of elected directors.	Partnership Firm is managed by the partners themselves, in general.
10	Audit of accounts	Audit of accounts of Joint Stock Company is compulsory.	Audit of accounts of Partnership firm is not necessary.
11	Flexibility	It is not so easy in case of a Joint Stock Company	The objects of the Partnership firm can be changed easily.
12	Perpetual succession	Joint Stock Company has continuous existence.	Partnership firm has no continuous existence.

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2.7 PUBLIC OR STATE UNDERTAKINGS: CONCEPT, OBJECTIVES, CHARACTERISTICS

Industrial and commercial undertakings owned and run by the government are known as public sector undertakings. Some of them are come under the category of public utilities such as railways, posts and telegraphs, hydroelectric projects, road transport, etc., others are run like Joint Stock Companies and aim at earning profits. Still others are quasi-public undertakings in which the government holds majority shares along with private share-holders.

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Merits of Public or State undertakings- The Public or State enterprises have assumed great importance in the modern times. They possess the following merits-

- 1) **Development of Backward areas-** Private enterprises cannot satisfy the development needs of the backward areas. Extension of public enterprise is essential for the economic reconstruction of the backward areas.
- 2) **Public welfare-** The aim of public enterprises is not to earn profits, but the social or public welfare which promotes national interest. The enterprises which do not give direct profit but are essential for the public welfare are run as the state enterprises, e.g. power projects or construction of dam and roads.
- 3) **End of Industrial Profit-** The growth of capitalism is checked by public enterprise. Wealth in the form of profit is not concentrated in few hands but it goes to the government which further spends it on the public welfare works.
- 4) **Development of Heavy and Basic Industries-** Private enterprise generally hesitate to participate in capital intensive investments. For instance, iron and steel plants, fertilizer plant, etc., therefore the public enterprise come to help in the development of heavy and basic industries.
- 5) **Facilities to workers-** Labour is also provided with more facilities by the public enterprise as compared to private enterprises.
- 6) **Reasonable Prices-** In the private sector, capitalists from monopolies charge higher prices but the public enterprises produce generally of better quality goods and sell them reasonable prices.
- 7) **Economic and Social Equality-** The state enterprise is most helpful in bringing the social and economic equality in the country. Income from the state enterprises does not go into private pockets but is spent on public welfare. Thus, the public enterprises reduce inequality in wealth and income distribution.
- 8) **Quality Products-** It is also admitted that the goods produced by public enterprises are superior to the goods produced by private sector.
- 9) **Easy Credit-** It is easy to collect more capital for the state enterprise as compared to private enterprise. Further, a lot of capital can be imported from foreign country for public enterprises. Therefore, public enterprises are more useful in countries lacking in capital as the government can easily arrange capital both internally and externally.
- 10) **Efficient workforces-** The state undertakings have the advantage to obtain service of more efficient, talented and able workforce.
- 11) **Research-** There is a greater possibility of intensive research in state enterprises as compared to the private enterprises. The state enterprises have sufficient funds at their disposal to utilise for research of new techniques

of production and new machines, etc. It increases the efficiency of state enterprises.

Demerits of Public or State undertakings- The above arguments support the case of state enterprises. But the supporters of private enterprises stress that state enterprises should be minimum in the country, due to certain demerits of this system. The demerits of state enterprises are as under-

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- 1) **Corruption-** Bribery, corruption and dishonesty are very common thing in state enterprises. The excess of these things converts the profit into the loss of enterprise.
- 2) **Political Favouritism-** Political favouritism and nepotism are the main disadvantages of the state enterprises. Every minister or political leader uses favouritism and nepotism in the recruitment and appointment of their near and dear. There is tyranny of the bureaucracy. The junior official behaves like a big boss and respectable citizen receives no courtesy. Political favouritism and bureaucratic machinery appoint inefficient person who adversely affect the working of state enterprises.
- 3) **Frequent and Sudden Transfer-** Very frequent and sudden transfers of the government employees at distant places with political motive adversely hit the normal functioning of the state enterprises. Such types of transfers result in the waste of expenditure, delay in work and inefficiency of enterprise.
- 4) **Wasteful Expenditure-** There is a great deal of waste in the expenditure. The government funds and property are used carelessly which result in small benefits at a greater cost. It increases the cost of production in state enterprises.
- 5) **Lack of Incentives-** The government servant does not have the same incentive to do their best as a man in private enterprise has. In the government service, promotion is awarded simply by seniority and not by merit. The workers are least concerned with the profit of the enterprise. Thus, they do not work with much incentive or initiative.
- 6) **Red Tapism-** Many decisions have to be taken in a state enterprise at different high level meetings. The file concerning these matters generally remains locked-up without any reason in different offices for a long time. Thus, red tapism is one of the main disadvantages of state undertaking.
- 7) **Unnecessary Interference-** There is general tendency of the ministers and the bureaucrats to interfere in the free working trade and commercial matters, especially in backward areas. Frequent transfers of the government employees from one place to another further put a hurdle in the daily administration of enterprise.

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Check Your Progress

3. State the main motto of the co-operative society.
4. Why is a company referred to as an artificial person?
5. How is the transfer of shares different in partnership and joint stock company?

2.8 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Unlimited liability in individual proprietorship means that the owner himself is responsible for the profit and loss. The benefit is that all aspects of the business belong to that person, including all assets.
2. The sharing of profits as a prima facie evidence and not a conclusive evidence of the existence of a partnership implies that, everyone who shares the profits of business need not necessarily be a partner of his remuneration but is simply an employee and not a partner.
3. The main motto of the co-operative society is of mutual help and to impart the training of honesty and co-operative among the members.
4. A company is called an artificial person because it does not take birth like a natural person but forms in into distance through law. Being the creation of law, the company possesses only those properties which are, conferred upon it by memorandum of association.
5. In case of Joint Stock Company shares can be transferred freely, whereas in a partnership the shares cannot be transferred without the consent of all the partners.

2.9 SUMMARY

- Firm can be defined as an organization. An organization is much wider term. It is a complex social system created by people to cooperate in the achievement of some goal. A firm makes up an organization.
- A firm is said to be an inter related part of an organization that work hand in hand to achieve the goal of the organization. There are several types of firms that differ from each other.
- Individual or Sole proprietorship is the oldest and simplest form of business organization. It is a form of private enterprises that is owned, managed and controlled by one person.

- Partnership is an association of persons who agree to combine their financial resources and managerial abilities to carry on a business and share the profits in an agreed ratio. Formation of partnership is very simple and easy.
- Co-operative organization is a voluntary association of person who come together to promote their common economic interest through the principle of self-help and mutual help. Minimum 10 persons required to form an Indian cooperative society.
- The company is one of the form of organizations. Company has no physical shape. It is an artificial person. It has independent legal entity, a common seal. The Shares of public company easily transferable. There are different forms of companies. Such as private company, public company, holding company, subsidiary company, company limited by share, limited by guarantee, unlimited company, foreign company, domestic company, etc.

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2.10 KEY WORDS

- **Firm:** It can be defined as an organization that employs productive resources to obtain products and/or services which are offered in the market with the aim of making a profit.
- **Sole proprietorship:** It is a form of private enterprise that is owned, managed and controlled by one person, and consequently, that person is liable for all costs and obligations.
- **Partnership:** When two or more than two persons join to start and run a business on the basis of their common and shared responsibility in the matter of profit or loss,
- **Cooperative:** It is ‘an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise’.
- **Company:** It refers to an association of number of persons formed for some common object or objects.
- **Public sector undertakings:** It refers to the industrial and commercial undertakings owned and run by the government are known as.

2.11 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. How are Joint Stock Companies formed?
2. What are the main features of partnership?

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3. What do you mean by Sleeping or Dormant Partner?
4. Who is a nominal partner?
5. List the different forms of Co-operative Society.
6. Define Memorandum of Association.
7. What are Articles of Association?
8. What do you understand by holding company?

Long Answer Questions

1. Examine the main features of individual proprietorship. Discuss the merit and demerits also.
2. What do you mean by partnership? Highlight different types of partnership and their characteristics.
3. What are the merits and demerits of partnership?
4. What is Joint Stock Company? How is it formed? Discuss its various features.
5. Explain the advantages and disadvantages of a Joint Stock Company.
6. Differentiate Partnership and Joint Stock Company.
7. What is a public sector undertaking? Discuss its merits and demerits.
8. Explain the concept of company and different types of company.

2.12 FURTHER READINGS

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UNIT 3 CLASSIFICATION OF INDUSTRIES

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Structure

- 3.0 Introduction
- 3.1 Objectives
- 3.2 Introduction to Classification of Industries
- 3.3 Large Scale Industries
- 3.4 Small Scale Industries
- 3.5 Micro Small and Medium Industries (MSMEs)
- 3.6 Answers to Check Your Progress Question
- 3.7 Summary
- 3.8 Key Words
- 3.9 Self Assessment Questions and Exercises
- 3.10 Further Readings

3.0 INTRODUCTION

An industry is a group of organizations involved in producing/manufacturing or handling the same type of product and service. Industries are part of the secondary activity. Secondary activities or manufacturing converts raw material into products of more value to people. Industrial systems are made up of input, processes, and output. The inputs are raw materials, labour, land, power, and other infrastructure. The process is the plan the manufacturer has of how to turn raw materials into finished products of value. And finally, the output is the end of the product from which the income is earned. In this unit, you will learn about the classification of industries and the features of small, medium and large scale industries.

3.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the concept of classification of industries
- Explain the importance and advantages of large scale industries
- Describe the problems of medium and large scale industries
- Examine the concept, performance and measures of small scale industries

3.2 INTRODUCTION TO CLASSIFICATION OF INDUSTRIES

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Industry refers to the economic activities concerned with the production of goods, extraction of services and provision of services. Hence we can say that Industries are concerned with:

- Production of good (steel energy)
- Extraction of minerals (coal mining)
- Provision for services (tourism)
- There are also Emerging Industries: ‘Sunrise Industries’

Industries can be classified on the following basis-

1. **Raw material**-Classification of industry on the basis of raw material is as under-
 - *Agro-based industries*: The industries which use agricultural product as input or based on agriculture are known *Agro-based industry*. These industries use plants and animal-based products as their raw materials. Examples, food processing, vegetable oil, cotton textile, dairy products, and leather industries.
 - *Mineral based industries*: Mineral-based industries are those which are based on mining and use ‘mineral ore’ as raw material. These industries also provide to other industries. They are used for heavy machinery and building materials.
 - *Marine-based industries*: The industries which use raw materials from sea or ocean are called Marine-based industries. Examples, fish oil.
 - *Forest-based industries*: These industries use raw materials from the forest like wood. The industries connected with forest are paper, pharmaceutical, and furniture.
2. **Ownership**-On the basis of Ownership industries are divided as under-
 - **Private sector**: Private industries are businesses that are owned and operated by an individual or group of individuals for profit motive.
 - **Public sector**: Public industries are owned and managed by the government. Example, Hindustan Aeronautics Limited (HAL)
 - **Joint sector industries**: These industries are jointly operated by the state and individuals.
 - **Cooperative sector industries**: Cooperative industries are operated by the suppliers, producers or workers of raw material.
3. **Size-**: Size of industries are measured by how much money is invested, employee count and goods produced. These are classified as under-

- *Small-scale industries:* In small scale industries less capital and technology is invested. In small scale industries work is done manually. For operation labour intensive technique is used in small scale industries. Example, Basket weaving, pottery, and handicrafts.
- *Large-scale industries:* Large-scale industries are the exact opposite of small-scale industries. Here the capital invested is large and advanced technology is in use here. Example, Automobiles and Heavy Machinery.

In the following sections, we will discuss, in detail, the concept of small and large scale industries.

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3.3 LARGE SCALE INDUSTRIES

Large scale industries are those industries which require huge infrastructure, manpower and have a influx of capital assets. Large scale industries are to those industries which require huge infrastructure, man power and a have influx of capital assets. In other words the industries which produce the goods in large amount by using the improved technology, efficient man power and more capital are known as medium and large scale industries. The term 'large scale industries' is a generic one including various types of industries in its purview. All the heavy industries of India like the Iron and steel industry, textile industry, automobile manufacturing industry fall under the large-scale industrial arena. However in recent years due to the IT boom and the huge amount of revenue generated by it the IT industry can also be included within the jurisdiction of the large- scale industrial sector. Last but not the least the telecom industry also forms and indispensable component of the large scale industrial sector of India.

Every country needs exploring of coal, iron and steel, exploring of oil and its purification, heavy machineries, heavy electrical equipments, heavy chemicals, ships and aeroplanes, industries of heavy and basic industries for its development. All these industries help to develop agriculture, transport, communication facilities and other industries. It means development of large scale industries is almost essential for the development of heavy and basic industries.

Importance of Large Industry- Indian economy is heavily dependent on large industries for its economic growth, generation of foreign currency and for providing job opportunities to millions of Indians. Large scale industries play a significant role in the overall economic development of a nation. The contribution of industrial sector to the total Gross Domestic Products (GDP) is only around 17%. However, the importance of industrial sector, in the process of overall economic development of the country is very remarkable. The importance of medium and large scale industries can be explained as the following points:

1. **Improvement in productivity:** In large scale industries, labour division and specialization technique is used. In large scale industries, work is distributed among the labour according to their efficiency which save time

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and improves the productivity. Huge and modern machines are used in these industries which raises productivity and reduces cost per head. It enables the consumer to get commodities at a cheaper rate.

- 2. Import substitution:-**Capital goods and consumer goods which are imported from the foreign countries can be produced inside the country through large scale industries. Our country depends upon foreign countries for certain heavy chemicals, heavy electricity, chemical fertilizers and other consumer goods, unless we develop large scale industries. Due to the development of large scale industries, all these commodities are produced inside the country and there is no need of import which is known as import substitution.
- 3. Export promotion:** In the old days, we exported skin, tea, jute, jute products, spices of different types, and cotton clothes to foreign countries. Large scale industries change the pattern of export. Due to the development of large scale industries, we are now able to export engineering products, heavy electric products and other industrial products. It means large scale industries have changed the pattern of export and increased the quantity of export.
- 4. Development of basic industries:** The industries producing the goods like iron, steel, copper, cement, etc are called basic industries. These industries help to establish and promote the other industries. Thus, the establishment of the large industries helps the development of basic industries.
- 5. Proper utilization of resources:** Large and medium industries are necessary for the scientific utilization of available natural resources such as forest, mineral, water and human resource.
- 6. Generate employment opportunities:** Development of large and medium scale industries help to remove the problem of unemployment by creating wide range of employment opportunities to unskilled, semi-skilled and skilled human resource.
- 7. Helps to modernize the agricultural sector:** For the modernization of agriculture, modern tools and technology are needed. The medium and large scale industries produce the modern machine, chemical fertilizers, material of irrigation and transportation. Thus, establishment, of agro-based medium and large scale industries helps to increase the agricultural production and productivity.
- 8. Improvement in living standard:** The employment and income opportunity of the people increases with the establishment and development of these industries. The regular income of the people from these industries help to raise the living standard of the people.
- 9. Sources of government revenue:** These industries produce huge amount of goods, generally expensive one. They are exported to foreign land and

Government earn tax, VAT, sales tax etc. which increases Government revenue.

10. Development of transportation and communication: The medium and large scale industries help to develop the transportation and communication, because these facilities are basic infrastructure of industrial development. The means of transportation are required to transport and distribute the industrial production to different places and the means of communication are required to have up to date market information.

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Advantages of large scale industries: Following are the advantages of large-scale industries:

1. There is greater scope for specialization in a large industry than in a small industry. Specialized personnel contribute to the quality and quantity of output. Any job is divided into several parts, each handled by a person who has specialized in it. By doing it repeatedly, he attains proficiency and greater degree of skill. In a small industry this is not possible. A job cannot be divided into parts because of the number of persons employed is limited and the capital invested is small.
2. In a large industry there is greater scope for specialized machinery. For example, where alpenes are manufactured in a large industry, there are, several machines which do different types of jobs before a complete alpine is turned out. In a small industry a single machine is enough to turn out complete alpenes. But the alpenes manufactured through the process indicated above in respect of large industry are definitely of superior quality.
3. A large industry can afford to have its own repair department and thus save costs. In a small industry if the machine fails or any part of it goes out of order for some reason, the proprietor has to send it to a repairing workshop which may be situated far away from the factory. Taking machine to the repairing workshop and then bringing it back involves wastage of much time, energy and money. This adds to the cost of the articles manufactured. In a large industry much time, energy and money can be saved by maintaining a repairing department in the premises of the industry itself.
4. A large industry enjoys the commercial advantage of buying and selling. Raw material is bought in large quantities for which advance contracts can be made. For the purpose of sale of manufactured articles agencies can be opened at different places in the country, and if possible, abroad.
5. A large industry is capable of standing adverse times. A good industrialist can foresee impending adverse times and can make arrangements in advance to face them. Raw material can be stored in large quantities if there is anticipated a possibility of its shortage in near future. The risk bearing capacity of the industrialist being greater, the manufactured articles can be stored if demand for them goes down and then gradually released manipulating the demand itself. All this is not possible in a small industry.

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Problems of Medium and Large Scale Industries: Medium and large scale industries suffer from various problems. One major problem is waste of resources. While economies of scale mean that larger industrial operations can produce more goods, the increased difficulties of co-ordinating production and the centralization of authority also results in larger scale waste. A bad butcher may make a few bad cuts, but one bad butchery machine can make thousands, if not millions, of them. In essence, this is a problem endemic of all large human organizations. Some major problems are as follows-

- 1. Lack of Raw-Material:** Medium and large scale industries require raw materials in large amount in regular way. But most of the raw materials in remote areas and their availability is not at right time. So, these industries can't manage raw materials easily which hampers productivity.
- 2. Lack of Energy:** Medium and large scale industries require the high level of power energy like coal, petrol, diesel, electricity, etc. But these energy requirements are not available in sufficient amount these industries regularly. Due to this reason, some of these industries are closing down.
- 3. Lack of Technical Knowledge:** High levels of technology and skilled man power are essential for establishment and operation of these industries. But country doesn't have sufficient technical manpower. Therefore, foreign experts have to be imported, who are comparatively expensive and often not available when required.
- 4. Lack of Capital:** Large amount of capital investment is required for the establishment and development of medium and large scale industries, but entrepreneurs don't have such sufficient amount to invest. Even the people who are able to invest are not interested to invest in these sectors due to the lack of favourable industrial policies.
- 5. Limited Market:** The medium and large scale industries produce large amount of goods. Therefore, the market for these goods should be also large. But the domestic market for industrial products is very limited due to the low purchasing power of the people.
- 6. Lack of Appropriate Government Policy:** Sound and stable industrial policy is needed for the industrial development of the country. But the policy changes frequency due to the unstable government. There is lack of proper coordination between political parties. Investors hesitate to invest their capital due to such unstable policies and uncertain environment.

There are other problems of medium and large scale industries such as lack of transportation and communication facilities, unable to compete with foreign goods, lack of industrial security, and lack of sufficient research.

Check Your Progress

1. Give some examples of small scale industries.
2. What is import substitution?

3.4 SMALL SCALE INDUSTRIES

Small scale industries constitute an important and crucial segment of the industrial sector. This sector is the second largest manpower employer, after agriculture, in our country. A wide range of products, from simple traditional crafts and consumer goods to highly sophisticated products like micro-processors, mini computers, electronic components, electro-medical devices, etc. are manufactured by small and medium enterprises. They make significant contribution in increasing exports, in addition to satisfying domestic demand for several commodities.

The small scale sector has grown steadily and occupied an important place in the economy. Contribution of the sector in terms of generation of employment, output and exports is quite significant. The number of registered units in SSI sector has increased from 89.71 in 1998 to 272.79 lakh in 2008. The Small Scale Industry sector accounts for 95 per cent of the industrial units; 40 per cent of output of the manufacturing sector, 35 per cent of the total exports and provides employment to around 17 million persons. This measure is important even today (ten years we both did it together), is estimated that the Total SSI sector comprises 1,05,21,190 units, spreading over the length and breadth of the country. The sector covers a wide spectrum of industries categorized under small, tiny and ancillary segments. In fact, it encompasses the continuum of the artisans, handicrafts units at one end and modern production units; with significant investments, on the other, producing a wide range of over 7,500 products. The sector acts as a nursery for the development of entrepreneurship talent. The SSI sector has been receiving special attention from the policy makers in addressing its requirements, be it audit, marketing, technology and entrepreneurship development, fiscal or infrastructural support.

Concept of Small Scale Industries

The small scale industries have worked as an engine of growth in both developed and developing countries. Despite the extraordinary synchronized global slump, small scale industries acted as a prime mover in slipping up industrial growth, enhancing poverty alleviation and bringing about sustainability. There has been an increasing realization of a need to introduce the concept of Small and Medium Enterprises (SMEs) in place of Small Scale Industries (SSIs). SMEs represent over 80 per cent of the industrial base of most of the developed countries and so most of these countries have a concept of SMEs rather than SSIs.

Importantly, there is a growing recognition world-wide that SMEs have an important role to play in the present context given their greater resource use efficiency, capacity for employment generation, technological innovations, promoting inter-sectoral linkages, raising exports and developing entrepreneurial skills. Historically, the small scale industries worked as an engine of growth in both developed and developing countries.

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All countries do not use the same definition for classifying their SME sector. Nor does universal definition appear to be necessary. The definition in use depends on the purpose these definitions are required to serve and the policies which govern the SME sector thus defined.

Table 3.1 Definition of SMEs in Asia and Other Countries

Country	Category of Industry	Criteria/ Country's Official Definition	Measure
North America USA	Very small Enterprise Small Enterprise Medium Enterprise	< 20 Employees 20–99 Employees 100–199 Employees	Employment
Canada	Manufacturing	Independent Firms having < 200 employees	Employment
Denmark	Manufacturing	<500 employees, production units with more than 5 employees	Employment
France	SME	10–199 Employees	Employment
Germany	SME	< 500 employees	Employment
Grece	Small Enterprises Medium Enterprises	< 50 employees 50–500 employees	Employment
Ireland	SME	< 500 employees	Employment
Italy	Small Enterprises	< 200 employees	Employment
Asia China	SME	Depends on product group usually < 100 employees, investment ceiling 30 million Yuan	Employment And investment
Indonesia	SME	< 100 employees	Employment
Japan	Manufacturing Wholesale Trade Retail Trade and Services	< 300 employees or asset capitalization < 100 million < 50 employees or asset capitalization < 30 million yen	Employment and Asset
Korea	Manufacturing Services	< 500 employees < 20 employees	Employment
Singapore	Manufacturing Services	< S\$ 12 million fixed assets < 100 employees	Fixed Assets Employment
Vietnam	SME	No fixed definition, generally < 200 employees	Employment

The three parameters generally applied by most countries, single or in combination are:

- (i) Capital investment in plant and machinery;
- (ii) Number of workers employed;
- (iii) Volume of production (turnover of business).

Definition of small-scale industries

The definition used by the Indian authorities is based on the level of investment in plant, machinery or other fixed assets whether held on an ownership, lease or hire purchase basis. It seeks to keep in view the socio-economic environment in India, where capital is scarce and labour is abundant. The Government of India notification dated December 10, 1947, classified a SSI unit as an undertaking with an

investment in fixed assets in plant and machinery upto ₹ 3 crore. Within the SSIs, units with investment in plant and machinery upto ₹ 25 lakh are termed as tiny industry. The ceiling on investment in plant and machinery was reached to ₹ 100 lakh with effect from December 24, 1999.

SSIs were first defined in 1950 on the basis of twin criteria of gross investment in fixed assets and work force. The workforce criteria was changed from a per day basis to a per shift basis in 1958, and finally dropped from the definition of SSIs in 1960. Since 1966, the original value of the plant and machinery has been revised periodically since 1966. The current limit of gross investment in plant and machinery for SSI units is ₹ 10 million. The cut off limits for preferential has been revised from time to time to accommodate the changes in the price indices, emerging needs of the industry for additional investments in machinery/ laboratory equipment, pollution control equipment, modernization, technology upgradation, products standardization etc. besides providing greater export thrust and other considerations of protection of SSIs.

In India, the definition of small scale industries is mainly in terms of investment ceilings, which have changed over the years to keep pace with economic development. Table 3.2 highlights the various capital limit for small-scale industries from 1950 till date.

Table 3.2 Different Capital Limits of Small-Scale Industries from 1950 till Date

years	Definition
1950	The government defined SSI as (i) those using power but employing less than 50 persons, (ii) those not using power but employing less than 100 persons, (iii) SSIs with capital investment of less than 25 lakhs
1966	SSIs with capital investment of less than Rs 75 lakh ancillaries with capital investment of Rs 10 lakh.
1975	SSI with capital investment of RS 10 lakhs and ancillaries with 20 lakhs.
1980	SSIs with capital investment of Rs 20 lakhs and ancillaries with 25 lakhs.
1985	SSI with capital investment of Rs 35 lakh and ancillaries with 45 lakhs.
1990	SSI with capital investment of Rs 60 laks and ancillaries with 75 lakhs.
1997	SSI with capital investment of RS 3Crores.
2000	SSIs with capital investment upto Rs n 1 Crores.
2006	SSIs with capital investment above 25 lakhs and upto 5 Crores.

Source: Economic Survey, Various Issues

The figure remains the same even in 2017-18 as confirmed by the Annual Report of the Ministry of MSME 2017-18.

Definition and difference between small scale and cottage industries

Cottage industries: - Cottage industries are those industries which are established with home labour and where the scale of production is small. They are able to satisfy the local demand. Feature of cottage industries are:-

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- (a) They are managed mostly by the labourers themselves.
- (b) Production is carried on by the members of the family.
- (c) There is no distinction between employer and employees.

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Small scale Industries:- Small scale Industries are those industries which operate mainly with hired labour and are concentrated in urban areas.

Difference between small and cottage industries: Difference between small and cottage industries are shown in following table.

Table 3.3 Difference between small and cottage industries

Small-scale industries	Cottage industries
1. These industries are mainly concentrated in urban areas.	1. These industries are largely located in the rural areas and provide supplementary employment of village people.
2. They are one which operated mainly with hired labour.	2. They are carried on wholly or primarily with the help of family members as a full time or part time occupation.
3. Small-scale industries include activities like garments manufacturing, electronics, manufacture of equipments etc.	3. They include activities like handloom, handicrafts, sericulture, coir, khadi etc.
4. Such industries use sophisticated methods of production and sell their products in local, national or even in international markets	4. Such industries mainly make use for local materials and largely cater to the needs of nearby markets. They are located in rural areas and use local resources and are therefore, called village industries.

Thus, the investment limit for small-scale industries and ancillary units is ₹ 1 crore. However to facilitate technology up gradation and enhance competitiveness, investment limit has been raised from ₹ 1 crore to ₹ 5 crore in respect of 69 items reserved or manufacturing in the small scale sector and for all items in the drugs and pharmaceutical sector.

Tiny /micro industries:- In addition to the small-scale and ancillary units, the government has also defined tiny unit. Prior to 1991, a tiny unit was defined as one having investment of less than ₹ 2 lakh. In 1991 this limit was raised to ₹ 5 lakh. Presently tiny units are called Micro enterprises and their limit goes upto ₹ 25 lakh.

3.5 MICRO SMALL AND MEDIUM INDUSTRIES (MSMEs)

Organization of the Development Commissioner (MSME) {earlier called Development Commissioner (SSI)} was established as Small Industries Development Organisation (SIDO) in 1954 on the basis of the recommendations of the Ford Foundation. Over the years, it has seen its role evolve into an agency for advocacy, hand holding and facilitation for the small industries sector. With the

enactment of the MSME Development Act 2006, the organization has been renamed as Micro, Small and Medium Enterprises-Development Organisation (MSME-DO) with the wider mandate of promotion and development of MSME sector. It has over 60 offices and 21 autonomous bodies under its management. These autonomous bodies include Tool Rooms, Training Institutions and Project-cum-Process Development Centres. MSME-DO provides a wide spectrum of services to the small industries sector, now enlarged to include all enterprises, excluding the larger ones. These include facilities for testing, tool making, and training for entrepreneurship development.

MSME play a key role in the industrialization of developing country. Micro Small Medium Enterprises as per MSME Development Act 2006 defined based on their new arrangement and classification of MSME. As per Micro, Small and Medium Enterprises Development Act 2006 In India the Enterprises are broadly classified into two categories:

- Manufacturing; and
- Those engaged in providing / rendering of services - Service Sector

Both categories of enterprises have been further classified into micro, small, medium and large enterprises based on their investment in plant and machinery (for manufacturing enterprises) or on equipments (in case of enterprises providing or rendering services).

Manufacturing Enterprises

- A Micro Enterprise, where the investment in plant and machinery does not exceed twenty five lakh rupees.
- A Small Enterprises, where the investment in plant and machinery is more than twenty five lakh rupees but does not exceed five crore rupees.
- A Medium Enterprises, where the investment in plant and machinery is more than five crore rupees but does not exceed ten crore rupees.

Service Enterprises

- A Micro Enterprise, where the investment in equipment does not exceed ten lakh rupees.
- A Small Enterprise, where the investment in equipment is more than ten lakh rupees but does not exceed two crore rupees.
- A Medium Enterprise, where the investment in equipment is more than two crore rupees but does not exceed five crore rupees.

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Table 3.4 Classification of industries on the Basis of Investments Classification

Enterprises	Investment Ceiling for Plant, Machinery or Equipments* @	
	Manufacturing Enterprises	Service Enterprises
Micro	Up to Rs 25 lakh	Less than ten lakh rupees.
Small	More than 25lakh less than five crore	More than ten lakh rupees less than two crore rupees.
Medium	More than five crore rupees less than ten crore rupees.	More than two crore rupees less than five crore rupees.

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Role of SSIs/MSMEs

Small scale and cottage industries now named as micro, medium and small enterprises have an important role in India's industrial and economic development. They hold out the promise of improving farmer's lot by providing them supplementary source of income, they assure increasingly larger avenues of employment to the unemployed persons, they ensure more economic use of scarce capital resources and they promote more equitable distribution of income and a balanced regional growth. Development of SSI/MSME is advocated in India on the following grounds:

- 1. Larger Employment Opportunities:** The employment argument is perhaps the strongest argument in favour of the development of cottage and small industries in India. This sector generates large employment opportunities. It is clear from table 1 the SSI sector employed 229.1 lakh people in 1999-2000 and this number has consistently risen to 659.35 lakh people in 2008-09 and 11.10 crore jobs (360.41 lakh in Manufacturing, 387.18 lakh in Trade and 362.82 lakh in Other Services and 0.07 lakh in Non-captive Electricity Generation and Transmission) in the 2017-18 in rural and the urban areas across the country. This sector contributes about four-fifth of manufacturing employment in India. These industries are believed to be labour intensive, they use more labour with the given amount of capital in comparison to large-scale industrial units. Thus with the limited availability of capital in India, the cottage and small industries hold promise of creating greater employment opportunities than the big industries. Since India has large number of unemployed persons therefore we must go in for development of small industries which have a huge employment potential.
- 2. Economy In The Use Of Capital:** The Indian economy is characterized by relative abundance of labour and acute scarcity of capital. Capital is a crucial factor in economic development and smaller availability of capital due to low rate of capital formation had kept our economy in perpetual backward backwardness in pre-independence era. Of course we have been able to achieve considerable success in increasing the rate of capital formation over the past few decades, but still availability of capital remains far short of

the requirement of rapid development of the country. Therefore, there is a great need for using these scarce resources most economically to produce large volume of output and faster rate of growth. The cottage and small industries are less capital intensive, they require relatively smaller amount of capital to produce commodity. They have a lower capital output ratio. Where capital is scarce and labour are abundance SSI is best suited to bring about industrial development and minimize the capital output ratio. The small industries lead to an economy in the use of capital because the same amount of capital used in the large industries would have given lower output due to high capital output ratio in the that industrial sector.

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- 3. More Equitable Distribution of Income:** Development of cottage and small-scale industries helps to reduce income inequalities and secure more equitable pattern of income distribution. The large industrial units are established by big industrial houses while small-scale industries are setup by people of modest means. The ownership of small-scale industries thus widely differs and income is therefore dispersed over a much larger number of people. Thus distribution of income and wealth becomes more equitable in the small scale sector as against concentration of income and assets among a few big industries. Since small industries are labour intensive and employ large number of people, the share of labour in total production is bigger than that of the employers. And this big share of production is widely distributed among large number of workers in the form of wages. Hence, there is less inequality of income between employers and employees. Equitable pattern of distribution reduces the gulf between the rich and the poor.
- 4. Use Of Latent Resources:** In an underdeveloped country like India many resources lie unused, untapped and idle due to lack of opportunities and incentives for their utilization. Such unused and untapped idle and hidden resources are called latent resources. These resources consists disguised unemployed labour, unutilized skill of artisans, and hoarded wealth etc. Development of SSI in the rural areas would lead to utilization of hoarded wealth, surplus rural manpower and local entrepreneurship. Spread of cottage industries will help in use of such latent resources to a significant extent. Therefore, there is a need to strengthen the programmes of development of village and small industries all over the country more particularly in rural areas to tap and make effective use of such latent resources and then contribute to overall development of the economy.
- 5. Large Export Potential:** Micro and Small Enterprises (MSEs) is contributing an estimated 39 per cent of industrial production and 34 per cent of total exports. With the establishment of large number of modern small-scale industries in the post-independence period, the contribution of the small-scale sector in export earnings has increased by leaps and bounds. It is observed that the bulk of the exports of the small-scale industries consist

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of such non-traditional items like readymade garments, sports-goods, finish leather, leather goods woolen garments processed foods and large number of engineering goods. The total exports of the small-sector industry products increased from ₹ 155 crore during 1971-72 to ₹ 202017 crore in 2007-08. This meant an increase in the share of the small-scale industries in the total export of the country from 9.6 per cent to 35 per cent in 2007-08. The share of the small-scale sector in manufacturing export is about 45 per cent. As per the Annual Report of MSME 2017-18, the MSME sector accounts for about 45% of the manufacturing output and around 40% of the total exports of the country. Thus this sector is contributing a significant share of our export earning and hold promise to further expand our export trade. With a view to expanding our exports and earning more of precious foreign exchange, it is necessary that urgent steps are taken to improve our traditional crafts and enhance quality and increase production of such goods which are now widely appreciated in the western markets.

- 6. Less Industrial Dispute:** A number of supporters of small-scale and cottage industries have argued that as compared with large-scale units, these units have less industrial dispute. There are frequent strikes and lock outs in large industries, small industries do not face such problems therefore there is no loss of output in small scale and cottage industries.
- 7. A Source of Rural Prosperity:** As we know, agriculture is the main occupation of the rural population; but agriculture is a seasonal activity. Rural people may be employed during the busy seasons but most of them remain idle during the off-season. To such seasonal unemployed people gainful employment can be provided through the set up of village and cottage industries in rural areas. Development of village and cottage industries can make a substantial contribution to incomes, living standards and welfare of the rural people. And they can thus, earn more and supplement their agriculture income to lead a more prosperous life.
- 8. Check on Rural-Urban Migration:** In the past decades, there has been growing migration of people from rural areas to the urban industrial and commercial centers. Growth of industries and trade centers in urban areas has acted as great pull on the rural employed and underemployed persons. High rate of migration from rural to urban areas has given rise to various problems, like housing shortage, breakdown of civic services, growth of slums etc. And further the growth of trade and industries has not been rapid enough to absorb all the migrate people. Thus unemployment become rampant in urban areas giving rise to social problems like theft, robberies etc. Development of small-scale and cottage industries in village and then provide work to them near their homes is the best way to check this migration.

9. Industrial Decentralization: Development of small and cottage industries leads to industrial decentralization. It prevents concentration of industries at only a few places as it disperses them all over the country. Such dispersal of industries helps in achieving a balanced regional development. The big industries tend to concentrate in only few industrial centers. Therefore some areas become industrially well developed with more employment and income to people while region may remain industrially backward and economically depressed. Development of small industries in those areas which are not been able to attract large industries can lead to a balanced regional growth.

10. Mobilization of Capital And Entrepreneurial Skill: The small-scale industries are at a distinct advantage as far as the mobilization of capital and entrepreneurial skill is concerned. The large industries cannot utilize them as effectively as the small-scale and village industries distributed over the entire length and breadth of the country. In the post independence period the rapid development of small-scale industries is a proof that given the necessary credit, power and technical knowledge and a large quantity of latent resources of the economy can be mobilized for purpose of industrial development. Now a number of entrepreneurs are spread over small towns and villages of the country.

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Performance of MSME Sector in India

The MSME have worked as an engine of growth in both developed and developing countries. MSMEs have play an important role in the present context given their greatest resource use efficiency, manufacturing output, capacity for employment generation, technological innovation, promoting inter–sectoral linkages, raising exports and developing entrepreneurship skills. Their locational flexibility is an important advantage in reducing regional imbalances.

This sector has consistently registered higher growth rate than the rest of the industrial segment. There are 6000 products ranging from conventional to high tech, which are being manufactured by the MSMEs in India. The MSME sector contributes significantly to the manufacturing output, employment and exports of the country. The MSME constitute over 90% of total enterprises in most of the economies and are attributed with generating the highest rate of employment growth and account for a major share production and exports. In India MSME play a vital role in the overall industrial economy of the country. It is estimated that in terms of value the sector accounts for about 39 per cent of manufacturing output and around 33per cent of the total exports of the country. Further, in recent year the MSME sector has consistently registered higher growth rate of the compared to the overall industrial sector. The major advantage of the sector its employment potential at low capita cost. As mentioned earlier, MSME sector has been creating 11.10 crore jobs in the rural and the urban areas across the country. The growth of small scale industries sector is shown in table.

Table 3.5 Growth pattern of Employees in MSME Sector in India Year

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	Units (Lakh nos.)	Employment (Lakh nos.)	production		Export (Rs crore)
			At constant price (1993-94)	At current price	
1999-00	97.2	229.1	170379	233760	54200
2000-01	101.1	238.7	184401	261297	69797
2001-02	105.2	249.3	195613	282270	71244
2002-03	109.5	260.2	210636	311993	86013
2003-04	114	271.4	228730	357733	97644
2004-05	118.6	282.6	251511	418263	1244717
2005-06	123.42	294.91	275581	71244	150242
2006-07	261.01	594.61	NA	709398	182538
2007-08	272.79	626.34	NA	790759	202017
2008-09	285.16	659.35	NA	880805	NA

Source: Annual Report 2009-10, ministry of micro, small, and medium enterprises

Thus it is clear from above table that SSI have recorded tremendous progress during the last fifty years. The performance and contribution of SSIs and now MSMEs in India economy is clear from the following :

1. As per latest fourth census with reference year 2006-07 there were 261 lakh units providing employment to about 595 lakh persons. The anticipated subsequent figure for the year 2008-09 was 285 lakh enterprises generating employment for about 659 lakh persons. Thus employments offered by MSMEs have also shown a tremendous rise
2. The table depicted that the number of MSME has increased gradually in India. The estimated number of MSME units in the country increased from 73.51 lakh units in 1992-93 to 123 lakh units in 2005-06 and further it increase to 285 lakh enterprises in 2008-09.
3. Total production of the MSEs was estimated at ₹ 71244 crore at current prices and ₹ 275581 crore at constant (2001-02) prices in the year of 2005-06. it further increased to at ₹ 880805 crore at current price.
4. MSME contributed 8 per cent of the country's GDP and 45 per cent of manufactured output .
5. In the early years of independence, SSIs were producing simple consumer goods. Today MSMEs have captivated a dominant position in manufacturing sophisticated items. MSMEs supply large amount of producer, consumer and complementary goods. They help in increasing the standard of living of people and improving their quality of life. Goods include paper, readymade garments, engineering goods, jewellery etc.

6. The labour–capital ratio in MSME is higher than in large industries.
7. MSMEs produce articles of craft and art which protect the rich heritage of India.
8. The value of export from the small scale industries sector has been increasing from year (1999-2009) small scale industries play a most important responsibility in India’s current export performance. In Export from the small industry has enlarged from ₹ 54200 crore in 1999-2000 to 202017 crores in 2007-08. Micro and Small Enterprises (MSEs) represent a vibrant and dynamic segment of the Indian economy, contributing an estimated 39 per cent of industrial production and 34per cent of total exports. it is observed that the bulk of export of the small-scale industries consists of such non-traditional item silk readymade garments, sport goods finished leather goods, wollen garments large number of engineering good chemical and allied products etc
9. One of the main arguments put forward in support of the small scale and cottage industries is that they ensure a more equitable distribution of national income and wealth. These industries possess much larger employment potential as compared to the large scale industries.
10. The small scale industries are at a distinct advantage as far as the mobilization of capital and entrepreneurial skill is concerned. A number of entrepreneurs are spread over small town and villages of the country.

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As per the Annual Report of MSME 2017-18, the growth of MSME sector can be seen as (figures in lakhs):

Table 3.6

Parameter	NSS 73rd Round*, 2015-16	Fourth All India Census of MSMEs, 2006-07	Annual Compound Growth Rate (%)
No. of MSMEs (Total)	633.88	361.76	6.43
Manufacturing	196.65	115.00	6.14
Services	437.23	246.76	6.56
Employment (Total)	1109.89	805.24	3.63
Manufacturing	360.42	320.03	1.33
Services	749.47	485.21	4.95

* Service includes Trade, Electricity & Other Services.

As per the National Sample Survey (NSS) 73rd round conducted during the period 2015-16, MSME sector has been creating 11.10 crore jobs (360.41 lakh in Manufacturing, 387.18 lakh in Trade and 362.82 lakh in Other Services and 0.07 lakh in Non-captive Electricity Generation and Transmission) in the rural and the urban areas across the country.

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Check Your Progress

3. Name the element for whom the small scale industry acts like a nursery for.
4. List the basis on which small scale industries defined.
5. What is a medium enterprise?

3.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Some examples of small scale industries are basket weaving, pottery and handicrafts industries.
2. Import substitution means that the capital goods and consumer goods which are imported from the foreign countries is produced inside the country through large scale industries.
3. Small scale industry acts a nursery for the development of entrepreneurship talent.
4. Small scale industries are defined on the basis of:
 - (i) Capital investment in plant and machinery;
 - (ii) Number of workers employed;
 - (iii) Volume of production (turnover of business)
5. A Medium Enterprise is an enterprise where the investment in equipment is more than two crore rupees but does not exceed five crore rupees.

3.7 SUMMARY

- An industry is a group of organizations involved in producing/manufacturing or handling the same type of product and service.
- Industry refers to economic activities concerned with the production of goods, extraction of services and provision or services. Industries can be classified on the different basis such as- on raw material base, on control based on the base of size.
- The contribution of industrial sector to the total Gross Domestic Product is only 17 percent. However the importance of the industrial sector , in the process of of overall economic development of the country is remarkable. Large scale industries are to those industries which require huge infrastructure, man power and a have influx of capital assets.
- The development of large scale industries is almost essential for the development of heavy and basic industries. Labour division and specialization is possible in large industry.

- Small scale industries constitute an important and crucial segment of the industrial sector. This sector is the second largest manpower employer, after agriculture, in our country.
- The small scale sector has grown steadily and occupied an important place in the economy. Contribution of the sector in terms of generation of employment, output and exports is quite significant.
- In India MSME play a vital role in the over all industrial economy of the country. It is estimated that in terms of value the sector accounts for about 39 per cent of manufacturing output and around 33 per cent of the total exports of the country. Further, in recent year the MSME sector has consistently registered higher growth rate of the compared to the overall industrial sector. As per available statistics this sector employs an estimated 31 million person spread over 12.8 million enterprises and the labour intensity in the MSE sector is estimated to be almost four times higher than the large enterprises.
- The micro and small enterprises in India suffer from a number of handicaps and face many problems some of which are is from small and uneconomic operation marketing financial and technological difficulties.

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3.8 KEY WORDS

- **Industry:** It is a group of organizations involved in producing/manufacturing or handling the same type of product and service.
- **Large scale industries:** It refers to those industries which require huge infrastructure, manpower and have an influx of capital assets.
- **Small scale Industries:** It refers to those industries which operate mainly with hired labour and are concentrated in urban areas.

3.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Define large scale industries.
2. Briefly state the classification of industries.
3. Give any two disadvantages of large industry.
4. What is small-scale industry?
5. What do you mean by tiny industry?

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Long Answer Questions

1. Discuss the importance of Large Industry.
2. Describe the problems of large industries.
3. What is the role played by small-scale sector in India? What measures have been adopted by the government to help this sector?
4. Give a brief account of policies adopted for promotion and protection of small and cottage industries in India.
5. Explain briefly the importance of small-scale industries in India.
6. What are the main features of new industrial policy 1991 with regard to small-scale sector?

3.10 FURTHER READINGS

Clarke, Roger. 1985. *Industrial Economics*. New York: Basil Blackwell.

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BLOCK - II
THEORIES OF INDUSTRIES AND LOCATION

NOTES

**UNIT 4 THEORIES OF INDUSTRIAL
GROWTH**

Structure

- 4.0 Introduction
- 4.1 Objectives
- 4.2 Hoffmann's Industrial Growth Theory
 - 4.2.1 Stages of Industrialisation
 - 4.2.2 Criticism of Hoffmann's Patterns
- 4.3 Chenery's Pattern of Industrial Growth
- 4.4 Gerschenkron's Great Spurt Theory
- 4.5 Answers to Check Your Progress Questions
- 4.6 Summary
- 4.7 Key Words
- 4.8 Self Assessment Questions and Exercises
- 4.9 Further Readings

4.0 INTRODUCTION

There has been a lot of research about the pattern of industrialization. The aim of the research is to find out if there is a standard pattern. A standard pattern is to be discovered in the areas of distribution of labour force between sectors, distribution of outputs in between producer's and consumer's goods, and industrial production and its organization. Another area where research has been done is the degree of industrialization and the per capita income. If a standard pattern is found then the argument that industrialization ensures higher income in underdeveloped countries will become stronger. But there are also chances that the industrial growth in underdeveloped country may also follow a different pattern. Recognizing the pattern of industrialization for the country is important for economic policymaking. In this unit, you will learn about the different theories of industrial growth.

4.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain Hoffmann's Industrial Growth theory
- Examine Chenary's pattern of Industrial growth
- Describe Gerchenkron's Great spurt Theory

4.2 HOFFMANN'S INDUSTRIAL GROWTH THEORY

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One pioneer study concerns the division of industrial output between consumer and capital goods. It was made by Walter Hoffmann in his book *The Growth of Industrial Economics*, in which he states: Our main argument is as follows: whatever the relative amounts of the factors of production, whatever the location factors, whatever the state of technology, the structure of the manufacturing sector of the economy has always followed a uniform pattern.

W.G. Hoffman in his pioneering study of industrial growth stated that as the process of industrial growth proceeds, the ratio of value added by consumer goods to capital goods industries decreases. In that study, Industries are classified as producing consumer goods and capital goods. According to above classification criterion, Hoffman included in consumer goods the following sectors: food, beverages, and tobacco, textiles, apparel, furniture and leather. These industries always develop first during the process of industrialisation. The capital goods included chemical, machinery, transportation, equipment, and metalworking industries. The consumer goods industries continually decline as compared with the net output of the capital-goods industries. This, Hoffman argues, is a gradual process but in his analysis he divides it into a number of stages which, he says 'can be identified for all free economic.'

4.2.1 Stages of Industrialisation

The theory of industrialisation W.G. Hoffman described the industrial growth pattern in terms of the ratio of consumer goods output to that capital goods output. As mentioned earlier, Hoffmann classified all industrial output into two categories, consumer goods and capital goods and classified four stages in terms of the ratio of consumer goods output to that capital goods output.

- In the first stage the ratio of consumer goods output to capital goods output is 5 to 1;
- In second stages the ratio of consumer goods output to capital goods output is 2.5 to 1;
- In the third stage a ratio of 1 to 1 ;

So in all these stages the output of capital goods, starting from a much smaller base rises faster than consumer-goods output until in the fourth stage consumer goods output is lesser than capital-goods output.

The theory of industrialisation is divided into four stages –by W.G. Hoffman. In Hoffman's frame work the pattern of industrial growth is as follows:

Stage I: In the first stage, the consumer goods industries are overwhelming importance their output being on the average 5 times as large as that of capital goods industries. There is domination of consumer goods industries in the country.

Stage II: This stage of industrialization is characterised by the fact that the industrial goods gains importance and the output matches almost half of that as consumer goods.

Stages III: At this stage of industrialization, it is observed that the balance of consumer goods industries and that of capital goods industries is changes in the favour of capital goods, in fact it surpasses it at this stage. The ratio of declining consumer goods in also seen in other countries. Industrialization is known for the increasing role of capital goods.

Hoffman has observed that by the end of 19th centuries, many old industrial countries like France, Great Britain, Switzerland, Belgium and Japan, crossed the first stage of industrialization. Other countries like Mexico, Chile, Argentina, New Zealand and India passed this stage between 1906 and 1948. The second stage of industrialization was reached by the end of 19th century by countries like France, Switzerland, USA, Germany, Belgium, and Great Britain. By 1940, other countries also reached this stage. By the middle of the 20th century, countries like Great Britain, Denmark, Belgium, Switzerland, France, USA, Sweden and South Africa reached third stage of industrialization. There has been differences in the speed of industrialization and the ratio of capital goods and consumer goods.

There has been identified three groups of countries by Hoffman:

1. Countries with sharp rate of decline (Germany and Japan)
2. Countries with medium rate of decline (France, Belgium, Britain, Australia and South Africa)
3. Countries with low rate of decline (Argentina, Canada, USA and Denmark)

Hoffman also observed that particular industries have been dominant in different stages of industrialization. For example, in the first two stages of development, food and textile industries have been dominant, and iron, steel and engineering industries have been dominant in the third stage. But it has also been observed that in some countries textile industries have had a dominant presence even in the third stage of industrialization.

4.2.2 Criticism of Hoffmann's Patterns

1. It is understood that there is no necessity for developing countries to follow the Hoffmann's pattern of industrialization in the early years.
2. There are certain limitations of the data which Hoffmann uses for his research. Firstly, industrial statistics are mostly inadequate for early years; secondly, they are also not common or similar from country to country making it difficult for comparisons. We have seen that Hoffmann is forced to estimate net output from employment figures.
3. The fact that the output ratio between capital goods and consumer goods is given the utmost importance in categorising its level of industrialization is

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problematic. This is because a higher proportion does not necessarily mean higher total industrial output.

4. The notion of stages as suggested by Hoffman is also a little difficult to define. He defines the stages as values of proportion between capital goods and consumer goods. These values are arbitrary and other critics believe that the categorizations could have been more or less to better define the stages of industrialization.
5. Many critics also question Hoffman's inclusion of industries in the industrial sectors. Some also question the manner in which some are discussed in detail and the fact that certain industries, which are hardest to classify are left out altogether.
6. Also peculiar to notice is that fact in Hoffmann's analysis, China seems to have passed through all of the stages in a single decade.
7. There is also the criticism that Hoffmann's research area of industrial production is way to wide to be of help to the policy makers who are looking for ways to industrialize their economy.
8. Hoffmann's theory also seems to suggest that if there is no particular policy of industrialization put in place by the governments, consumer goods will develop first and faster than capital goods. In the long run however, the rate of growth of output of capital goods will be higher. The research does not guide the policy makers as to whether it is prudent to skip over these natural progressions to deliberately launch plans to reduce the output ratio between the two goods by establishing more capital goods in the economy.

Some also question the operational usefulness of Hoffmann's pattern of industrial planning which might be corrected through finer sectoral categorizations.

Check Your Progress

1. Mention the stage at which manufacturing industries are included in the industrial growth.
2. How does Karl Marx describe economic and industrial growth?
3. List some other names for the take off stage.
4. How does Hoffmann classify industrial output?

4.3 CHENERY'S PATTERN OF INDUSTRIAL GROWTH

This is one of the most important studies of pattern of industrial growth. These patterns were established by Chenery and Taylor and by the UN Department of Economic and Social Affairs. These studies use cross-section regression analysis

of the output of various industrial sectors for a large number of countries as a function of the number of independent variables.

Chenery has identified three important transitions in the economic structure within the process of industrialisation:

- Change in production techniques and sources of supply for individual commodities.
- A growth in the comparative importance of manufacturing industries
- A transition in the composition of industrial input.

Chenery estimates a linear logarithmic regression equation in his study in which the per capita value added depends upon per capita income and upon population. The characteristic feature of this pattern is that with the rise in income levels there is seen a growth in share of industrial output. The share of primary production declines and that of transportation and communication double over this range. This regression analysis holds true for Kuznets conclusion that the proportion of service sector in the national product does not change majorly with the level of per capita income.

But it is also true that most of the countries deviate from this pattern of growth even though there is comparatively high coefficients of determination. But this level of determination is restricted within 50 per cent from the level to be expected as a result of the regression on the level of income per head in terms of value added per head in industry. If per capita grows at 1.5 percent a year in a steadily growing economy, industrial output will increase by this amount over a period of twenty years. In these terms, there is no country in which industrial development is either advanced or retarded by much more than twenty years.

Chenery and Taylor later utilised a much complex regression equation to explain the contribution of industry in the national product. The difference was that in the earlier studies only income per head and population was used but in the newer studies, additional factors were taken into account including the share of gross fixed capital formation in Gross National Product (GNP), the share of primary exports in Gross National Product and the share of manufactured exports in Gross National Product. Further, the equation consists of one non-linear term which, allows for the decline in elasticities with rising income noticed in most industrial sectors and eliminates the necessity of dividing the sample by income level. Even then there are considerable differences in the relationship between the growths of total output. Chenery, in his 1960s study, then classifies industries according to their nature of demand for their products, to determine normal output levels. These are:

- Investment and related products
- Intermediate goods
- Consumer goods.

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Chenery in comparison to Hoffmann, uses a more acceptable division of industries through such a classification.

Chenery's Observations:- The variance in the rate of growth elasticities between investment goods and consumer goods is similar to the difference between agriculture and industry. This observation adds nothing new but is a statistical reaffirmation of the conclusion of Kuznets about changing economic structure and also echoes Hoffmann's arguments about altering the relative output of investment and consumption goods.

The original conclusions are found in the two further sections of Chenery's 1960 analysis: (i) the causes of industrialisation (ii) on the detailed composition of output between industries within the manufacturing sector, and also in Chenery and Taylor's division of countries into size category.

'Cause of industrialisation', as per Chenery refers to three sources of demand for industrial products:

- Growth in final use of industrial products;
- Growth of intermediate demand stemming from 1 and 2;
- The substitution of domestic production for imports

Chenery further explains 70 percent of industrial growth through the regression on levels of income per head. He concludes that out of other factors at play, scale in terms of sizes of different countries and the resources they have also are very crucial to influencing the industrial growth. Further, in Chenery and Taylor's studies, these two factors are given more importance as is evident from their classification of sample countries into the following three groups:

- Large
- Small Industry Oriented; and
- Small Primary Oriented;

This division makes for a much more discriminating cross section regression analysis from which Chenery and Taylor get three quite distinct patterns of growth.

In case of a large country, the share of industrial sector in the national product first rises at a great speed and then levels off to reach at its peak position. Ofcourse, in case of some countries the deviation is at a significantly lower rate while others have a higher share.

Another point to note here is that this pattern of growth in the context of levels of income is also seen in small industry oriented country. But other factors like composition of export have a different effect in the regression equation, for instance, in case of small countries changes in the exports between primary and manufactured groups has a significantly different effect on the total output composition. But again, share of investment is similar, since most capital goods are imported.

In the study including the three groups of countries, there is also a depiction of relationship between per capita income and the share of manufacturing industries in the GNP. There is a common feature in such comparisons and this is that the individual industries show a slower rate of rise and fall in the share after the high level of income is reached in large countries.

This pattern is not very significant in smaller countries, even though there are but a few countries which have high levels of income. It is also seen that in almost all of the small primary oriented countries, at higher levels of income, their output share of all industrial sectors increases rapidly. In fact, for all the categories of countries, at high levels of income the differences in the share of national output from all industries is very close than at lower levels of income. This is because, in case of small industry oriented countries, there will be seen more specialization at lower levels of income and when the income levels rise, the share of some industrial sectors in the national products increase, while that of others fall.

Chenery's conclusions were considered helpful in the sense that for policy makers the detailed analysis of the sectors and industries was more helpful in comparison to the broader patterns which were suggested earlier. But most of the developing countries have the aim of raising income levels fast and the causes for increasing these levels was not explained by Chenery. Even so, he was of the opinion, growth was related with the anticipation of changes that could be delivered through the use of resources and which get hampered by government related interventions.

Final Remarks on Chenery's Theory:- Chenery has propounded the following as most significant for policy and for source allocation:

1. One of the significant factors for industrial production is the economies of scale as regional grouping are conducive to industrial growth for all but the largest of developing countries.
2. The pattern of growth remains fairly defined and deviates the lowest in the case of primary and tertiary sectors and the most in manufactured consumer goods.
3. There has been observed a considerable variation in industrial growth in the 20th century compared with that in the 19th century when export markets were more easily available to industrialising countries. Now, the situation makes import substitution overwhelmingly significant.
4. Lagging sectors in a country where the industrial structure deviates from the normal pattern are likely to grow more quickly to catch up.
5. The divergences are greatest in machinery, transport and intermediate goods where resources endowment and economies of scale are most clearly reflected in variation in the proportion of imports and domestic production; but for these sectors the disaggregated Chenery and Taylor study produces more consistent pattern.

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6. Although Chenery's study concentrates on similarities, it also reveals the substantial variation that exists and the need to separate particular from universal factors. An analysis of the part played by comparative advantage and other particular factors in a given country must therefore be added to knowledge of general growth patterns to arrive at the best allocation of resources.

4.4 GERSCHENKRON'S GREAT SPURT THEORY

An economic historian, Alexander Gerschenkron examined the traditional economies of Europe as they attempted to achieve industrialisation. He looked for similar characteristics and differences among countries and analysed the process of change in each. Consequently, he described some common stages through which underdeveloped countries must pass on the way to economic development. Gerschenkron revealed that all nations were backward once. To move from traditional level of economic backwardness to a modern industrial economy required a sharp break with the past, or *great spurt* of industrialisation. Many western countries like the Germany, France, Great Britain, and United States experienced changes at roughly the same time and achieved partial industrialisation during the first half of the 19th century.

Generalisation:- Number of changes take place in the process of backward to industrial development. Gerschenkron summed up these changes into the following generalisations-

1. The more backward a country, the less likely was its agriculture to play an active role by offering to the growing industries the advantages of an expanding industrial market based in turn on the rising productivity of agricultural labours.
2. The more backward a country's economy, the more likely was its industrialisation to start discontinuously as a sudden great spurt proceeding at a relatively high rate of growth of manufacturing output.
3. The more backward country's economy, the heavier was the pressure upon the levels of consumption of the population.
4. The more backward a country's economy, the more pronounced was the stress in its industrialisation on bigness of both plant and enterprise.
5. The more backward a country's economy, the great was the stress upon producers' goods as against consumers' goods.
6. The more backward a country's economy, the greater was the part played by special institutional factors designed to increase supply on capital to the nascent industries, and in addition, to provide them with less decentralised and better informed entrepreneurial guidance; the more backward the country the more pronounced was the coerciveness and comprehensiveness of these factors.

According to Gerschenkron, the differences in the levels of economic developing among European countries in the 19th century were sufficiently large so as to arrange them along a scale of increasing degrees of backwardness. By marking off two points on that scale, three groups of countries could be traced: advanced, moderately backward and very backward.

Common Characteristics of Nation:- Three common features are present in countries who are on the brink of industrialization as per Gerschenkron-

1. A large number of population has now understood the potential benefits of industrialisation. They are actively seeking new opportunities for greater prosperity.
2. There are no major scarcities or obstacles in the resources on which production are based. The development is not seriously obstructed on account of supply of resources.
3. There can be found tension between two camps namely the existing economic institutions and the group which wants a progressive and newer institutions to be adopted. This is most frequently seen in countries who start on their path of development really late. This is simply because the existing economic relations in these countries are pretty dated in comparison to developed nations.

How to Introduce the Great Spurt?- The big spurt of industrial development in cases of severe differences between economically backward and developing countries can take many different directions. Rostow was of the opinion that industrialization demand certain pre-requisites, but Gerschenkron was opposed to his view. This was because of the following observations:

- (i) The preconditions for industrialisation that were present in England were either absent in the backward countries of Europe or existed on a very small scale;
- (ii) A big spurt of industrialisation occurred even in those countries where such preconditions were not present.

In support of his argument, he presented the example of Italy. Italy's economy was pretty backward in comparison to Europe's advanced industrial economies before 1880. Even though there are several factors which can be used for comparison like density of rail network, labour skill in industries, number of persons employed in industry, or productivity in different branches of industry or technological equipment or literacy rates, there are no common prerequisites of industrialisation.

Gerschenkron takes into account the degree of economic backwardness to categorise countries into three groups:

1. Advanced countries

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2. Moderately backward countries and
3. Very backward countries

There can be seen a difference in the focus in the first stage of development in different countries, for example, in advanced nations, private firms take the organizational lead; banks feature first in the moderately backward nations and governments take the initiative in very backward countries. However, these preconditions are not rigid and industrialization is not solely dependent on these preconditions. These are created and changed with the changes in the level of industrialization as well.

Gerschenkron uses the example of England here with the argument that in England, capital was invested from previously accumulated wealth or from gradually ploughing back of profits. But this was done in extremely backward countries through the actions of banks and governments.

Soviet Russia is cited by Gerschenkron as an example of extreme backwardness compared to the industrialised Europe. Industrial development in Soviet Russia started in late in the 19th century as compared with central Europe. Further, capital accumulation was more difficult a problem in Russia than in Europe. To solve the issue the Russian government proactively played a major role in comparison to the lead taken on by the banks in Europe. The Russian solution required sacrifices from the Russian population. This meant that the incomes were to be used for capital investment rather than for consumption. Small family plots had to be consolidated into larger and more efficient farms. Workers had to move from rural areas into cities nearer factory jobs. This was only possible with the lead of the Russian government.

Leaving aside Soviet Russia which developed into a command economy, Gerschenkron provided two reasons for the growing role of the state in industrialization. According to him the greater the degree of backwardness, the greater the role of the state in the spurt towards industrialisation.

1. Incomes are very low in extremely backward country and so is the demand for consumer goods. This, in turn, restricts the derived demand for capital goods. When there is negligible motive for profit, the state has to play a major role towards industrialisation.
2. Sources of capital like foreign capital, capital markets, banks, etc., are lacking in backward countries and therefore the State has to create certain financial institutions to start the process of investing in industries.

Gerschenkron also emphasised on the importance of the adoption of capital-intensive techniques in order to initiate the great spurt in industrialization. There are major technological gaps between developed and developing countries.

Gerschenkron utilised index numbers to measure economic development in his study. He reached the conclusion that the series aggregated by pre-industrialisation weights grow much faster than the series aggregated by weights in post-industrialisation. There is an upward bias in his explanation of quantity index, in binary comparison of pre and post industrialisation weight with base year price, and this refers to as the Gerschenkron effect. The divergence between the base-year weighted quantity index and the current year weighted index would be greater, and this would result in greater extent of the opposite movements of relative quantities and prices during industrialisation.

Finally, as per Gerschenkron the greater spurt in industrialisation may occur if following five pre-requisites were fulfilled-

1. Either there must be an abolishment of the old framework in agricultural organisation or there must be an increase in the productivity of agricultural sector.
2. Modern elite who exercise influence should be created which is in favour of economic changes in the economy.
3. There should be provision for material social overhead capital.
4. The value system must favour changes in the economy.
5. There should be an availability of an effective entrepreneurship.

There is only one similarity between Gerschenkron and Rostowis that the 'great spurt' of Gerschenkron is closely related to Rostow's 'take-off'. Both elements stress the elements of specific discontinuity in economic development. Great spurts are however, restricted to the area of manufacturing and mining whereas take-offs refer to national output.

Despite this, Rostow's approach to industrialisation is very narrow. According to him every country irrespective of the degree of its economic backwardness, must pass through the same sequence of stages during its process of industrialisation. To Gerschenkron on the other hand the process of industrialisation was different in different countries depending on their degree of backwardness. In this sense, Gerschenkron's approach is more realistic and has wider applicability to the present day underdeveloped countries.

Check Your Progress

5. State the characteristic feature of Chenery's pattern of industrial growth.
6. How does Gerschenkron categorise companies taking into account their economic backwardness?

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4.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

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1. It is the third stage of industrial growth where such industries are included which was manufacturing capital goods and machines, through which further activities of production could be completed.
2. Karl Marx has described four stages of economic and industrial growth: (1) landlord, (2) Capitalism (3) Socialism and (4) Communism.
3. The 'Take off' stage of industrial growth is also known the 'Stage of Fight' or 'Stage of Well- Planned Growth'.
4. Hoffmann classified all industrial output into two categories, consumer goods and capital goods and classified four stages in terms of the ratio of consumer goods output to that capital goods output.
5. The characteristic feature of Chenery's pattern is that with the rise in income levels there is seen a growth in share of industrial output. The share of primary production declines and that of transportation and communication double over this range.
6. Gerschenkron takes into account the degree of economic backwardness to categorise countries into three groups:
 - Advanced countries
 - Moderately backward countries and
 - Very backward countries

4.6 SUMMARY

- Walter Hoffmann in the book *The Growth of industrial economies*, undertakes a pioneering study concerning the division of industrial output between consumer and capital goods. The main argument here is that: irrespective of the relative amounts of the factors of production, the location of factors, the state of technology, there is a uniform pattern of growth of the manufacturing sector of the economy.
- Consumer goods industry including the food, textile, leather, furniture, always develop first during the process of industrialisation. But the metal working, vehicle building engineering and chemical industries the capital goods industries in the consumer goods industries continually decline as compared with the net output of the capital goods industries.
- Chenery research focuses on three major changes in economic structure in the process of industrialisation: a growth in the relative importance of manufacturing industries, a development of production techniques and change in the sources supply for individual commodities. A linear logarithmic

regression equation is used by Chenery in his study in which per capita value added depends upon per capita income and upon population.

- Alexander Gerschenkron, in his study used the traditional economies of Europe as they became industrialized. He was of the opinion that in order to become a modern industrial economy, a sharp break with the past or a great-spurt of industrialisation was very important. Five pre-requisites were important for this: the abolishing of old framework in agricultural organisation or increase in the productivity of agricultural sector increased; creation of influential modern elite who were in favour of economic changes in the economy; there should be provision for material social overhead capital; presence of a value system which favours economic changes and availability of effective entrepreneurship.

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4.7 KEY WORDS

- **Take-off stage:** In the stages of industrial growth, it refers to such time in which the rate of investment increases and actual per capita production increases.
- **Mass consumption stage:** This is the final and last stage of industrial and economic growth where the citizens of the country not only substantially make use of goods of necessity but also of luxurious goods.
- **Regression equation:** It is a measure of the extent to which researchers can predict one variable from another, specifically how the dependent variable typically acts when one of the independent variables is changed.
- **Great Spurt:** As per Gerschenkron's theory, it refers to a backward economy's sharp break with the past in order to move from traditional level of economic backwardness to a modern industrial economy.

4.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. According to W.G. Hoffman what are the stages of industrialisation?
2. What are the groups of countries identified by Hoffman?
3. What do you mean by great spurt?
4. Write the common characteristics of nation as given by Gerschenkron.

Long Answer Questions

1. Critically evaluate the stages of industrialisation given by Hoffman.

2. Summarise the generalisation of Gerschenkron.
3. Explain the Chenery's pattern of industrial growth.

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4.9 FURTHER READINGS

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UNIT 5 THEORIES OF INDUSTRIAL LOCATION

NOTES

Structure

- 5.0 Introduction
- 5.1 Objectives
- 5.2 Alfred Weber's Theory of Industrial Location
- 5.3 Sargant Florence's Theory of Industrial Location
- 5.4 Factors Influencing the Location of Industries
- 5.5 Answers to Check Your Progress Questions
- 5.6 Summary
- 5.7 Key Words
- 5.8 Self Assessment Questions and Exercises
- 5.9 Further Readings

5.0 INTRODUCTION

One of the important problems in launching an industrial enterprise is the choice of suitable location which helps in the minimization of production costs and maximization of profit. In setting up a factory, a manufacturer has to take three interrelated decisions: (1) The scale of operation; (2) The technique to be adopted which involves the selection of the appropriate combination of the factors of production; and (3) The location of the factory. The conventional theory of the firm provides the rules and norms for taking the first two types of decisions but it ignores the third one. A separate branch of economics bordering with the discipline of geography is known as industrial location. Location analysis deals with the elements of the locational or spatial decision-making. The task of decision making is not simple. A manufacturer has to consider several technical, economic and institutional factors for this. The location pattern of an industry depends on a large number of individual decisions of the firm. In this unit, we will learn about the concept and theories of industrial location.

5.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain Weber's theory of industrial location
- Examine Sargant Florence's theory of industrial location
- Discuss the factors affecting industrial location

5.2 ALFRED WEBER'S THEORY OF INDUSTRIAL LOCATION

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Alfred Weber, a German economist, was the first economist who gave scientific exposition to the theory of location and thus filled a theoretical gap created by classical economists. He gave his ideas in his *Theory of Location of Industries* which was first published in German language in 1909 and translated into English in 1929. His theory, which is also known as 'Pure Theory' has analytical approach to the problem. He propounded this theory by inventing and analysing the cause of industrialisation. He used cost-analysis for this purpose.

- Weber's theory is divided into two parts: Pure theory and Realistic theory.
- Its foundation is based on the deductive method and it incorporates all those general factors which attract industries to localize in some areas or regions and ultimately decide the basic location structure of these industries.

Weber while using the method of cost analysis discovered that some cost factors were directly affected by geographical location which influenced the total cost of production. Since geographical factors are distinctive, they vary from region to region. He also found out that certain costs remained unchanged in the total cost of production. These included interest and depreciation. On the basis of cost analysis Alfred Weber divided the factors of localisation into two parts-

- Primary or Regional Factors
- Auxiliary or Secondary Factors

The details regarding these factors are as follows:

- 1. Primary or Regional Factors-** Such factors are included in primary or regional cost which are helpful in getting the raw materials and labour for production and in the distribution of products of industries. According to Alfred Weber, 'The production cost of different industries are different in different localities but the industries will be located at that place where the cost of production will be minimum.' Generally, industries will have a tendency to localize at a place where material and fuel are not difficult to obtain. From this point of view, According to Weber there are two general regional factors which affect cost of production- (i) Transportation cost, and (ii) Labour costs.

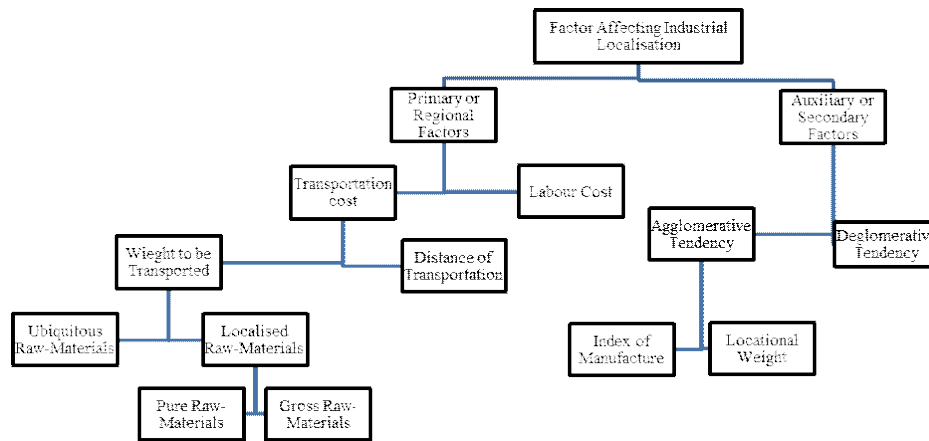


Fig. 5.1 Weber's Theory of Factors Affecting Industrial Location

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I. Transportation costs-Transportation costs play an important part in the location of an industry. Any industry bears the transportation cost to achieve raw-materials and to distribute finished goods. Each industry will try to find location at a place where transportation charges are the minimum, both in terms of availability of resources and place of consumption. Transportation cost is determined by two factors-

- (i) Weight to be transported and
- (ii) Distance of Transportation

i. Weight to be Transported- All raw-materials which are bought to the factory are not of equal weight. Therefore, the weight to be transported depends upon the nature of raw-material. Alfred Weber has divided raw-material into following two parts ubiquitous Raw-material and Localised Raw-material

- **Ubiquitous Raw-material-** These raw materials are found at all places in sufficient quantity, e.g. water, soil, bricks, sand and stones etc. Industrial localisation is not affected by these types of raw-materials.
- **Localised Raw-material-** These raw-materials are available only on specific place, such as coal, minerals etc. Therefore, these affect location to a certain extent. Alfred Weber has divided these types of raw-material further into two parts- Pure Raw-material and Gross Raw-materials.
 - o **Pure Raw-material-** Pure raw material is one which does not lose its weight in transferring and during production process, Such as- jute, cotton, silk etc. These types of pure raw materials do not affect the industrial location.
 - o **Gross Raw-material-** The weight of gross raw-materials reduce in transferring and manufacturing process, such as coal,

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sugarcane, minerals etc. These types of gross raw-materials affect the industrial localisation.

- ii. Distance of Transportation-** There will be no significance of distance of transportation, if the locality of acquiring raw-materials and market are in the straight line, but in other situation the distance of transportation will affect gross raw-materials. Thus the industrial units should be established near the centre providing raw-materials so that production cost may be minimised.

Weber used the 'location triangle' to find the place of minimum transport cost. He assumed a simple spatial situation in which there is only one consumption centre (c) and two fixed supply centres (M1 and M2) for two most important raw materials.

There may be other consumption points and raw material supply centres but Weber did not consider all of them together. According to Weber, the least cost point will be located within the triangle C,M1,M2 such as one shown by P. The three corner points of the triangle will be pulling the located point (P) towards themselves. The position of the point will depend on the balance of the pulls exercised by them. If the pull of any one corner is greater than the sum of the pulls of the other corners, production will be located at the point or corner of origin of the dominant force. The force exerted by each corner on production point is in the form of ton-mile weight to be moved from that point (M1 and M2) and to the point (C). Let x and y be the requirements of materials M1 and M2 in tones per ton of output and let one unit output, i.e. finished product be transported from point P to C. The distances of the corner points from the production point P are unknown. Let them be a, b and c between P and M1, M2 and C points respectively. The total ton- mile of transport per unit output would then be $ax+by+c$. This is to be minimised in order to find the position of point P, i.e. the location of production. The distance a, b and c and hence the point P are easy to be found by applying the theorem of parallelogram of forces in geometry.

An industry may be material-oriented to market-oriented from location point of view. Weber used the material Index for identifying such nature of the industry.

Material Index- From material index Weber understood the portion of the weight of localised material to the weight of the product According to Alfred Weber, the higher the Material Index higher is the tendency of industrial localisation to go towards the centres of raw-material contrary to it, the less Material Index, the industrial localisation will be closed the market. Material Index Number can be calculated by the following formula-

$$\text{Material index} = \frac{\text{Weight of Localized Raw - Material}}{\text{Weight of finished commodity}} \times 100$$

$$M.I = \frac{W.R.M.}{W.F.M} \times 100$$

Here

M.I= Material index

W.R.M=Weight of localised Raw-Material

W.F.M= Weight of Finished Commodity

If the material index number is greater than unity, industries will have a tendency to localize at the place of raw materials; in case of it being less than unity, they will get located near the places of consumption or markets. In case of unity, industries may get located at any of the places of raw material or markets depending upon discretion of the entrepreneur and his convenience. We can explain material Index by the following example-

Example-

Industry	A	B	C
Weight of Raw-Materials	100 tonnes	100 tonnes	100 tonnes
Weight of Finished Goods	80 tonnes	60 tonnes	50 tonnes
Material Index	125	167	200

From the above table, it is clear that the product C has maximum Material Index and Product A has minimum Material Index Number. Therefore the Industry of product C will be comparatively closer to the centre of raw-material and industry A will be comparatively closer to the market.

II. Labour Cost- According to Weber the labour cost is unequal in various locations. Labour is cheaply available in some localities but that is not so mobile. Therefore, the labour cost is important in affecting the industrial localisation.

Weber was faced with a serious problem namely why the industries deviate from the centre of least transport costs. One such reason could be differences in the labour costs. This labour cost can be cheap either because of differing levels of efficiency and of wages of labour or because of differing levels of efficiency in the organisation and the technical equipment which the labour is required to use. Labour cost can go up and come down due to distribution of population as well. According to Weber's theory if the behaviour of each industry in respect of labour cost is to be measured than it is necessary to calculate the proportion of labour costs per ton of weight to be moved.

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According to Prof Kuchhal, deviation 'will be possible only when the additional cost of transportation at the new centre is more than compensated by a saving in labour costs... When the labour costs are varied, an industry deviates from its transport locations in proportion to the size of its labour co-efficient.'

2. Auxiliary or Secondary Factors- Weber has also discussed secondary causes responsible for industrial location. He has taken into account agglomerative and deglomerative factors.

I. Agglomerative Tendency- All the factors encouraging the tendency to centralise the industry at a specific place is called the factors of agglomerative tendency. An agglomerative factor, according to him, is a factor which provides an advantage in production or marketing a commodity simply because industry is located at one place. Banking, insurance, marketing facilities, etc., and the possibilities to achieve external economy are included in it. This agglomerative tendency is affected by following two factors-

- o **Index of Manufacture-** The ratio of manufacturing cost to the total weight of manufacturing is called Index of Manufacture.
- o **Locational Weight-** The meaning of locational weight is the total weight of transportation in the whole process of manufacturing.

Alfred Weber has used co-efficient of manufacture to measure the quantity of agglomeration. Co-efficient of manufacture is the ratio locational weight to manufacturing cost. According to Weber, agglomeration is encouraged with high co-efficient. With the increase in the co-efficient of manufacture, the industrial centralisation also increases. Contrary on it, on the decrease in co-efficient of manufacture, the tendency of industrial decentralisation is found.

II. Deglomerative Tendency- Deglomerative factor is one which gives such advantage because of decentralisation of production. Deglomerative factors include land values and taxes and lead to decentralisation. After the excessive agglomeration of industries, the benefit of agglomeration begins to reduce because of increased local tax and the price of land begins to increase, labour cost is increased and the competition is found in the demand of raw materials. Consequently, the deglomeration tendency gets encouragement.

Besides above, Alfred Weber has also discussed the following concepts to industrial localisation-

1. Split in location- When an industry is located at many places instead of one particular place, it is known as split in location. It is possible only in that situation when various activities of an industry can be performed independently at different places. Split is to occur in two stages. In the first stage it is elimination of waste and in the second working up of pure material.

For example, gross raw-material is used in a process of industry and pure raw-material is used in other process of that industry, then there will be split localisation industry. Such industry in which industrial units will consume gross raw materials then these industrial units will be established near the centre of raw materials and industry in which industrial units will consume pure raw-materials, such industrial units will be established near industrial centres.

2. **Locational coupling-** Locational coupling means to centralise various types of industrial units at one particular place. This coupling can be possible either due to economic or technical reasons. It is also possible due to connection through material This condition comes into existence in the industries of by-products. In other words, if finished and semi-finished goods of any industry are used as raw-materials of other industry, both the industries are locationally coupled.

Criticism of Alfred Weber's Theory of Industrial Localisation – The main critics of the Alfred Weber's Theory of Industrial Localisation are Debison, Sargant Florence, Andrej Prindal and Robinson. Main criticism of Alfred Weber's Theory of Industrial Localisation are as follows-

1. **Based on Unrealistic Assumptions-** According to critics of this theory, Weber has unrealistically over-simplified the theory of industrial location. Many assumptions in the theory are unrealistic. Weber's theory is based on the following three assumptions-
 - The transportation rates are equal in all localities;
 - Raw-material cost is equal at all places but distribution is unequal
 - Consumption centres are fixed and labour is available in unlimited numbers and at fixed cost in fixed labour localities.

All the three assumptions are imaginary and impractical.

2. **No importance to Other Factors of Localisation-** In this theory Alfred Weber has laid emphasis on only two factors of industrial localisation. One is transport cost and other is labour cost. He has ignored all the other factors e.g. capital, source of power, peace, security and insurance etc. which affect the industrial localisation. Weber has not given any importance to non-economic factors—historical, social and political.
3. **Inadequate analysis of transportation costs-** Weber considers only two factors in transportation costs— the weight to be transported and the distances to be covered. According to critics Weber has taken only two elements for determining the cost of transportation namely weight and distance. There are some other factors such as quality of goods, type of transport topography character of region, etc., which also influence transportation costs. Weber has not given any consideration to these points. Also, Weber has taken transportation cost on the basis of tone-mileage, and not on physical cost basis.

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4. **Based on Deductive Method-** The explanation of Weber's principle is based on deductive method whereas minute reality cannot be clarified on the basis of deductive method. Alfred Weber has also accepted that in the modern capitalist system, industrial localisation cannot be clarified on the basis of deductive method.
5. **Defective classification of Raw-material-** Weber has tried to classify material into ubiquitous and localised raw-material. Again the division is arbitrary. This division is not practical. According to Robinson who does not know that in actual practice materials are drawn from a large number of alternative fixed points and they are different in nature.
6. **Overburdened with Technical Considerations-** The maximum use of co-efficient made this theory more technical and mathematical. Dennison is of the view that Weber's theory is heavily over burdened with technical considerations. It has not laid due stress on costs and prices and has overstressed technical coefficients. According to him, 'The most important criticism about Weber's analysis is that it is lamentably removed from all considerations of costs and prices and it is formulated mainly in terms of technical coefficients.'

Suggestions for Alfred Weber's Theory of Industrial Localisation

In spite of above criticism, it can be said that Alfred Weber's theory of Industrial localisation is the only one extensive deductive principle and more practical form can be given to it through the following alterations-

- The transportation cost should be on freight rate table in place of weight and distance.
- Calculation should be done in the form of costs and prices.
- Labour centres go on changing and their supply is also not unlimited. Therefore, assumption regarding the particular labour centre should be modified.
- The consumption centres should be taken as broader concepts.

Check Your Progress

1. What are ubiquitous raw materials?
2. List the categorisation of factors of localisation as per Weber.

5.3 SARGANT FLORENCE'S THEORY OF INDUSTRIAL LOCATION

Professor Sargent has followed the inductive method in formulating his theory of location. Sargent's theory is more practical and realistic than that given by Weber.

After Alfred Weber's theory of Industrial localisation, Sargent Florence has given his theory about industrial location, which has become popular. He started with the idea that some of Alfred Weber's assumptions are not realistic. According to S.Florence, geographical location of an industry is not as important, as the distribution of occupied population. His main consideration is that occupational distribution of population should be the main and primary factor for taking into consideration the location of an industry.

After properly analysing statistical data, Sargent tried to ascertain the tendency of location of industries. On the basis of production census he has tried to find out the statistical measures of location and has not accepted the traditional view of the geographical context, not the region or area as such but the working population in that area is more important. While explaining location factor of an industry Sargent has used two new concepts:

- Location factor and
- Coefficient of localization.
- **Location factor**-Location factor indicates the centralization. It is an index of the degree of concentration of an industry in a particular region. Location factor can be calculated by the following formula-

$$L = \frac{A \times 100}{\frac{B}{C \times 100} \times D}$$

Where

L= Location Factor

A= Number of workers employed in a particular industry in the particular area.

B= Number of workers employed in the particular industry in the entire country.

C= Total industrial labour force in the particular area.

D= Total industrial labour force in the country.

We can explain this formula by the help of following example-

	Labour	Particular area	Entire country
1.	Number of workers employed in a particular industry	40,000 (A)	2,00,000 (B)
2.	Total industrial labour force in the country.	1,00,000(C)	10,00,000 (D)

$$L = \frac{40,000 \times 100}{\frac{2,00,000}{1,00,000 \times 100} \times 10,00,000}$$

$$\frac{20}{10} = 2$$

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- If the location factor index is greater than unity, there is a tendency of centralization;
- on the other hand, if it is less than unity, there is no tendency of centralization;
- In case of unity, a state of evenness exists this indicates that there is neither centralization nor decentralization.

According to Saviyya and Dass, “This index is calculated by taking into consideration two ratios, namely, the percentage of workers of the industry in question found in the region under consideration and the percentage of all industrial workers in the country. In calculating index to find out the location factor the first one is divided by the second and if the quotient is one, the location factor is said to unity and it can be said that the industry is evenly distributed over the whole country. If quotient is above unity, then the conclusion can be that the region under reference has higher share of industry. On the other hand if it is below unity, then it can be presumed that it has less share than its due.”

Co-Efficient of Localisation-By this Florence meant propensity of an industry for concentration. It indicates an industry’s tendency for localisation anywhere in the country. It is primarily concerned with a particular industry and not a particular region. It will thus be a single figure for the industry and also for the country as a whole. Co-efficient of localisation can be found with the help of following formula:

Co – efficient of Localisation

$$= \frac{\frac{\text{Total No.of workers in Particular industry in a region}}{\text{Total No.of workers engaged in a particular industry}} \times 100}{\frac{\text{Total No.of workers in the region}}{\text{Total No.of workers in all over the country}} \times 100}$$

It can be explain with the help of the following example-

Total No. of Workers all over the Country	40,000
Total No. of Workers engaged in Cotton Textile Industry	4,000
Total No. of Workers in Gujarat	16,000
Total No. of Workers engaged in Cotton Textile Industry in Gujarat	2,000

$$Co - efficient of Localisation = \frac{\frac{2,000}{4,000} \times 100}{\frac{16,000}{40,000} \times 100}$$

Co-Efficient of Localisation = 1.25

From the above calculation of Co-efficient of Localisation, it is clear that the cotton industry has higher share of industry in Gujarat Region. On the basis of coefficients it becomes possible to divide the industries into three categories namely high, medium and low. Thus coefficient helps in classifying industries according to their dispersion or concentration.

While discussing the advantage of this method Professor S.C.Kuchhal says, “Thus the location significance of industries is shown and the problem of investigation becomes easier. Industries with low- coefficient of localisation can thrive in different regions and are thus dispersed. Industries which show a high coefficient of localisation.... are centralised in particular regions.”

Criticism of Sargant Florence’s Theory of Industrial Localisation

Main criticisms of Sargant Florence’s Theory of Industrial Localisation are as follows-

- 1. Investigation of Status quo** - The theory is not in a position to explain the causes responsible for the choice of location of an industry. It can only help in finding out the existing state of industrial distribution in a country. It is said that the theory is only the investigation of status quo and nothing beyond that.
- 2. Economic Region rather than Political Region to be considered-** While finding out coefficient of localisation, the unit is political region, which it is said cannot be much justified in discussing an economic theory. Therefore, the unit should be economic region.
- 3. Calculation of Localisation is based on Labourers only-** This theory has taken into account mainly the number of labourers and has ignored labour efficiency and quantity of production. According to this theory number of workers is the only one factor as the indicator of concentration of an industry, but there is no logic in choosing this one factor alone for finding out concentration of an industry.
- 4. Only Partial Explanation-** While formulating his theory, he has not given due place and consideration to various forces of concentration which have direct bearing on the location of industrial units namely the role of external economies or tax incentives etc.
5. According to Florence co-efficient of location for all the countries is the same. But it cannot be the same because distribution of workers in each country varies according to local conditions.

Value of the Theory:- Like Weber’s theory, this theory also suffers from some defects, about which a mention has already been made. But the theory has its advantages too. The theory is of considerable use for studying location dynamics in any country. These indices help in guiding the trends of industrial development in

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a country. Then another advantage is that coefficient of localisation helps in deciding the types of industries that may be dispersed under a scheme of regionalism. It then becomes possible to diversify industries with a medium coefficient of localisation over a wide area, according to factor equipment in each area.

Combination of the two Theories:- Weber has given a pure theory about the location of an industry, whereas Florence's theory is based on indices. Both theories have their own values and advantages. At the same time both have their drawbacks as well, it is therefore, essential to have some balanced approach. Such an approach can help in finding out proper system and basis for location of an industry. Now-a-days, industrial location is not taken in limited economic series but in the wider perspective taking into consideration social and strategically aspect. In industrial location today maximum care is taken to see that location can secure maximum efficiency of production and distribution. In the past while locating an industry was considered that what was in the best interest of the industrialist was also the best interest of the community. Now attitude has changed, there is always need some kind of regional planning of industry. Such a planning should combine maximum efficiency with optimum distribution of industrial activity based on broader economic, social and strategical consideration. The best objective can be achieved by combining both theories. Weber's theory can be employed for the investigation of practical problems whereas Florence's theory can help for analysis for an existing location.

5.4 FACTORS INFLUENCING THE LOCATION OF INDUSTRIES

It is observed often times that the factor which influences the decision of where the industries should be located are economic considerations. Although, it is also true that the opposite may also happen. The twin related factors of maximum of profit and minimum costs are the top factors considered for deciding the location of the industry. Of course, there are also many different factors which attract an industry at a particular location.

Labour, market conditions, power availability, access to raw material and water along with ease of transport are the factors which constitute as geographical factors influencing the location of an industry. But with the advancement of technology, in today's time the influence of certain geographical factors are becoming less important. For example, electricity availability is mostly a non-issue now-a-days with the electricity coverage in most of the places. Similarly with scientific innovations, raw materials are becoming increasingly substitutable. Labour, too can now move to other places with the betterment of transport facilities. As far as modern industries are concerned, the location of industries is now being ruled by non-geographical factors including the likes of historical, economic, political and social factors having a dominant bearing. Let's look at the combination of all these factors in detail.

- 1. Raw Materials:** The cost of the raw materials forms a major part of the total cost of products for many industries. This is why the access to good quality raw material at a low cost is an important factor for deciding the location of an industry. This is because when the cost of transportation is low the cost of the raw material in the total cost of production becomes low. In modern industries, this is slight difficult a consideration since a lot of raw materials may constitute a single product.

Another important factor related to raw materials is the fact the finished product of one industry might be the raw material for other industries. This is the case with many iron and smelting industries. Further, those industries which utilize heavy raw materials are usually located near the source of these raw materials. Examples include sugar and coal industries located near agriculturally rich location of sugarcane like in UP, coal industries near coal reserves in Jharkhand and Bihar and jute industries in West Bengal

Raw materials are also classified into two types pure and gross based on whether they lose any weight in the transformation or production process. Pure raw materials include sugar and wool while gross raw materials are coal and iron. It is prudent for industries using gross raw materials to situate their facilities near the source of these raw materials.

- 2. Power and Fuel-** For the industries to function properly, fuel and power is imperative. The power sources may be conventional or non-conventional. Some of the crucial conventional sources of power are coal, hydro-electricity and mineral oil. The transportation of these conventional sources were difficult in the initial days of industrialization and therefore many industries chose to open industries in regions from where the sources of power came. But with the improvement of technology and better coverage, the power can be called to have become more mobile. This is why industries no longer have to strictly place themselves near such sources.

Another factor which is important to discuss in the context of power and fuel is that these are also related to the weight of the raw materials. For example, steel industries require cooking coal which are bulky and loose weight in the production process. This is also why electro-metallurgical and electro-chemical industries who are dependent on hydro-electricity are located near these regions. Examples of industries considering location of raw material and power include fertilizer industries at Nangal, aluminium producing industries at Korba, or copper smelting industries near Khetri (Rajasthan).

- 3. Climatic Conditions:** Climatic conditions of a region is very crucial for deciding the location of the industry because it affects not only the manufacturing activity but also the people involved in the industry and

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living near them. This is probably why the north-western belt of India is not the best for industries given its harsh climate of both hot and dry and cold and dry weather. In contrast, the coastal region of western India is much more conducive to the development of industries. It has been scientifically understood that colder climate is better for higher productivity.

Additionally, the raw materials too get affected by the climate of region. For example, cotton industry requires humid conditions as drier weather breaks the thread in the textile production.

Another climatic factor which is important is that hilly and rockier regions may increase transportation costs. Similarly, regions which are more prone to natural disasters are avoided as preferred locations.

- 4. Availability of Manpower:** The availability of labour force is a crucial factor for the location of industries. This comes forth in a number of ways. Firstly, if the required labour is in great numbers in the region, the region is already an attractive location. Secondly, some industries require specific skill sets in the workers. This is true for textile industries and other such. Thirdly, the presence of training institutes is also important as it will make the labour present there learn the required skill sets. Fourth, but a very important factor is the labour relations in the region. Fifth factor related to manpower availability is the labour rates in the region. Another factor crucial to the location of industries is the nature of labour whether urban or rural.

In countries like ours, the requirement of manpower despite mechanisation is still very high. This is why entrepreneurs must consider all the factors to really decide upon the location of industries.

- 5. Proximity to the Market-** For every manufacturing unit, it is important that the finished products reach the market at the right time. Quick disposal of manufactured goods will only be possible if industries are located near the markets. The entrepreneur must consider factors like transport costs, nature of goods whether perishable or not, etc. Further, if the market for the goods is not concentrated in a particular region, it is important that the industries consider the place with the lowest distribution costs. For export industries, the distance of the processing units is a crucial factor. Examples include Export Promotion Zones.
- 6. Supply of Capital-** The infrastructural facility which impacts the location of industries in a deciding way is the supply of capital or finance. Every entrepreneur looks forward to sources from where they can get maximum funds at lower interest rates. Even though capital may seem like a mobile factor not relevant to industries, it is not entirely true. For example, there are several State Financial Corporations which incentivize companies for opening their industrial units at certain locations. This is

also true for special industrial zones in specific regions. Further, the opening up of smart cities as well as technocrats look for places where finance will be easily available for them to sustain a financial stable industry.

7. **Competition-** Competitive environment also to a crucial extent affect the location of industries. For example, in case of retail industries, they must aware of the locations where there is a best match of good strength of customers who want their products along with having less competitors selling the same product line. This is also true for newer industries. They might not be able to survive or get customers in regions with established units already operating. However, they might do very well in newer locations where there are no previously functioning giant hogging up the market.
8. **Infrastructural Facilities-** Of course, the degree of dependency upon infrastructural facilities may vary from industry to industry, yet there is no denying of the fact that availability of infrastructural facilities plays a deciding role in the location selection of an industry. The infrastructural facilities include power, transport and communication, water, banking, etc.
 - For the assembly of raw materials and for the marketing of the finished products, transport is crucial. It is also important to ensure that the conditions of reasonable rates and easy availability is met while selecting the location. The junction points of waterways, roadways and railways have the tendency to become industrial centers because of this reason only.
 - India has several examples of places where because of the development of railways connecting the port towns with hinterland has determined the location of many industries around Kolkata, Mumbai and Chennai. The transport facilities too develop because of the industrial development. Some examples where transport becomes crucial are sea food industries whose location near the seas is imperative. Similarly, jute industry near Hoogly has been a dominant decisional factor for plant location.
 - If power contributes substantially to your inputs costs and it is difficult to break even partly using your own standby source, entrepreneur may essentially have to locate his/her enterprise in lower surplus areas such as Maharashtra or Rajasthan.
 - Leather, rayon, chemical, and food industries are all dependent on regions with ample water supply at lowest costs.
 - Establishment of industries involves daily exchange of crores of rupees which is possible through banking facilities only. So the areas with better banking facilities are better suited to the establishment of

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industries. There are also constant fears of damage to machine and man in industries for which insurance facilities are badly needed.

- Communication services play a decisional role in the location of industrial units. Information as regards raw materials, finished goods and market price which can be made available only when there are communication facilities are very important for every type of business units. This is perhaps why rural or remote regions of the country are not considered the most attractive locations because of the sketchy transport and communication facilities.

9. Site- The site itself in a particular region is important for the location of the industries. The industrialists look for sites which are generally flat, well spaced out, with easy accessibility for transport facilities. Rural areas are sometime chosen for their vast spaces available at lower costs.

10. External Economies- External economies in the form of facilities like warehousing, transportation, banking, processing are all very important factors which make certain regions more attractive than others. The concentrated availability of these factors drastically brings down the costs involved making the location an attractive opportunity for entrepreneurs to set up even more units.

11. Industrial Inertia- Industrial inertia is another factor which affects the location of industries. This means that industries develop in a good fashion at the location where it is originally establish. The original causes might not even be present at the location anymore. But this industrial inertia helps more industries develop at the same location.

12. Personal Factors- Apart from the external factors which have a bearing on the decisions regarding the location of industries, personal factors also influence these decisions. The industrialist might have personal preferences or even biases regarding different places. For example, the car manufacturing giant Ford motors was started in Detroit because it was the hometown of its founder.

13. Government Policy- Location of industries is affected by the nature of government policies. This could be negative or positive for the industrialists. For example, governments might make it difficult for industrialists to open up factories in already congested regions by placing stricter licensing policies and approvals like environmental sanctions. Similarly, in tune with their own policy outlook to promote the development of certain backward regions, they might offer several incentives like tax holidays, better interest rates for loans, remission of sales duty, easier land acquisition laws, price concessions for transport and electricity, etc.

14. Local Laws, Regulations and Taxes- Laws and taxes are govern the decisions of the industrialists to open up factories. For example, in certain situations the Law itself prohibits companies from opening industries in certain ecologically sensitive areas while in order situations tax rates affect the decision of the industrialists who have to take into account their production costs.

15. Legal Environment- The location of industries also gets affected by the legal environment of the region. There are several examples from our countries like the fact that tanneries in Kanpur were ordered shut by the Supreme Court and similarly iron industries near Agra for the reason that they were polluting river Ganga and discolouring the marble of Taj Mahal. No industrialist is interest in opening their units at a location where the law and order situation is troublesome. Nano factories were also shifted from Bengal to Gujarat after a lot of protests.

16. Political Conditions- Industrial growth is heavily dependent on political stability of a region. Any kind of political upheaval becomes a barrier in the industrial activity but when there is a stable political environment, there is a support for the proper functioning of the industry. A major reason for this is the kind of confidence that is lent to the industrial activity. Newer entrepreneurs also get attracted to investing and joining the industry. Also related to the political stability is the law and order situation of the region. For example, industrialists generally avoid risk laden Naxalite, terrorism stricken or even regions where there might be communal tensions.

We may conclude by noting that the traditional explanation of a location of industry at a geographically favourable point is no longer true. Location of oil refinery at Mathura, coach factory at Kapurthala and fertiliser plant at Jagdishpur are some of the results of government policies.

Check Your Progress

3. What is location factor in Florence's theory?
4. List some of the non-geographical factors affecting the location of industries.

5.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Alfred Weber divided the factors of localisation into two parts-
 - Primary or Regional Factors
 - Auxiliary or Secondary Factors

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2. Weber's theory is based on the following three assumptions-
 - The transportation rates are equal in all localities;
 - Raw-material cost is equal at all places but distribution is unequal
 - Consumption centres are fixed and labour is available in unlimited numbers and at fixed cost in fixed labour localities.
3. Location factor in Florence's theory indicates the centralization. It is an index of the degree of concentration of an industry in a particular region.
4. The non-geographical factors which affect the localization of industries include factors like historical, economic, political and social factors.

5.6 SUMMARY

- Alfred Weber a German economist was the first economist who gave scientific exposition to the theory of location and thus filled a theoretical gap created by classical economists. He propounded this theory by inventing and analysing the cause of industrialisation. He used cost analysis for this purpose.
- According to Alfred Weber, the production cost of different industries are different in different localities According to him there are two general regional factors which affect 'cost of production that are Transportation cost, and Labour costs.
- Professor Sargant has followed the inductive method in formulating his theory of location. Sargant's theory is more practical and realistic than that given by Weber.
- According to S.Florence geographical location of an industry is not as important, as the distribution of occupied population. His main consideration is that occupational distribution of population should be the main and primary factor for taking into consideration the location of an industry.

5.7 KEY WORDS

- **Cost-analysis:** It is a systematic approach to estimating the strengths and weaknesses of alternatives; it is used to determine options that provide the best approach to achieve benefits while preserving savings
- **Inductive method:** It is a method of reasoning in which the premises are viewed as supplying some evidence for the truth of the conclusion (in contrast to deductive reasoning and abductive reasoning).
- **Co-Efficient of Localisation:** As per Florence's theory, it indicates an industry's tendency for localisation anywhere in the country.

5.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Define Labour Cost.
2. What is Material Index?
3. What do you mean co-efficient of localisation?
4. What is Location factor?
5. According to Alfred Weber, what are the factors that affect industrial localisation?

Long Answer Questions

1. Critically examine Alfred Weber's Theory of Industrial Localisation
2. Discuss critically Sargant Florence's inductive theory of industrial localisation
3. Define the term industrial localisation. Explain the factors which influence the location of Industries.

5.9 FURTHER READINGS

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BLOCK - III
INDUSTRIAL ECONOMICS
AND MARKET STRUCTURE

UNIT 6 MARKET STRUCTURE

Structure

- 6.0 Introduction
- 6.1 Objectives
- 6.2 Meaning and Characteristics of Market
- 6.3 Structures of Market
- 6.4 Industrial Concentration, Market Concentration and Sellers Concentration
- 6.5 Answers to Check Your Progress Questions
- 6.6 Summary
- 6.7 Key Words
- 6.8 Self Assessment Questions and Exercises
- 6.9 Further Readings

6.0 INTRODUCTION

A critical factor that plays an important role in a firm's choice of price and output is the market structure. The term 'market structure' refers to the organizational features of an industry that influence the firm's behaviour in its choice of price and output. Market structure is an economically significant feature of the market. It affects the behaviour of firms in respect of their production and pricing behaviour. It is classified on the basis of organizational features of the industry, more specifically, on the basis of degree of competition among firms. In general, the organizational features include the number of firms, distinctiveness of their products, elasticity of demand and the degree of control over the price of the product.

In contrast to perfect competition, monopoly is the extreme opposite form of a product market. In case of perfect competition, the number of sellers is so large that no one has any power whatsoever to influence the market price. A monopoly firm, on the other hand, has the sole power to influence the market price. While, under perfect competition no seller can afford to discriminate between the buyers of different categories, the monopolists practice price discrimination as a matter of policy. In this unit, you will understand about the concept of market, its characteristics and structures.

6.1 OBJECTIVES

After going through this unit, you will be able to:

- Elucidate the degrees of competition and market structure
- Explain the features of perfect competition
- Define the sources and features of monopoly
- Identify the meaning and characteristics of an oligopoly
- Discuss industrial, market and sellers concentration

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6.2 MEANING AND CHARACTERISTICS OF MARKET

It is important to distinguish between markets that are competitive and those that are imperfectly competitive. A *competitive market* is characterized by price rivalry, ultimately resulting in only one market-established price. Three conditions characterize a competitive product market: (a) Entry into and exit from the market by individual firms is easy, (b) all firms in the industry sell a homogenous or a standardized product, and (c) the number of firms is so large that no individual producer is able to influence the market price of the product.

If a firm has the ability to influence the market price of a product, an *imperfectly competitive market* condition is said to prevail. Imperfect competition or price control is characterized by: (a) barriers to entry and exit in the market; (b) products that are not perfectly identical, but rather are unique or differentiated in some way; or (c) a small number of firms, enabling each producer to influence product price. Because this situation is common in the real world, imperfectly competitive markets receive considerable attention from economists.

Many experts regard barriers to entry into an industry as a major reason of the existence of market power in an economy. Monopoly requires complete barriers to entry, and partial entry barriers can lead to varying degrees of partial monopoly as found in monopolistic competition or oligopoly.

In some instances, barriers to entry to an industry are the result of scale economies. Where technology is conducive to large size relative to total market demand, a firm's long-run average cost schedule declines over a wide range of output, as we know. If firms are to achieve lower unit costs, they must be large-scale producers. New small firms that attempt to enter such an industry are not likely to survive unless they can achieve the size and market needed to allow scale economies in production. Survival and achieving a given size also will be more difficult if financial requirements are prohibitive. The automobile, steel, aluminium, and electronic computer industries all typify situations in which high financial requirements, large size, and scale economies are important; thus, it is not surprising

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that a few firms dominate these markets. Barriers to entry into an industry may also result from patent rights being granted to inventors for exclusive processes.

Another type of entry barrier may result from control of essential raw material. Initially control of this kind was significant in the development of the aluminium and copper industries. In order to discourage entry, existing firms in an industry may also follow cutthroat competitive policies in the short run. Policies of this type represent an entry barrier that can discourage potential competitors and drive existing firms out of the industry as well. Finally, there are economic benefits derived from being in the industry, which may strengthen entry barriers. Superior access to capital markets can be important, and large and more secure firms often possess this advantage.

Check Your Progress

1. What is a competitive market?
2. List the three conditions that characterize a competitive product market.

6.3 STRUCTURES OF MARKET

Let us understand the structures of market in detail in the following section.

Characteristics of Perfect Competitive Market

Perfect market is a market in which there are large number producers, none of whom has any influence at all on the price at which he sells. Under this competition, each individual producer produces such an insignificant part of the total market production that he assumes that his actions will have no effect on the market price.

The following are the characteristics of perfectly competitive market:

- **Large number of producers:** We can only say that there must be a large enough number of firms so that each firm (because it is such a small part of the market) believes that it cannot affect the market price by producing more or less by itself in the market. We are not able to say whether 100 firms or 10,000 firms meet the requirement of ‘a large number of sellers.’
- **Homogenous good:** If the products of the various firms are differentiated enough so that customers prefer one seller’s product over another’s, then a firm can affect the price by changing the quantity it produces, and we will not have perfect competition. This requirement for perfect competition is met only when the products are so homogeneous that buyers are indifferent as to which seller’s products they purchase.
- **No artificial restrictions:** There are no artificial restrictions on the free movement of prices or the quantity of output in a competitive market situation. Competition cannot exist under government price setting, or agreements among competitors as to prices or the quantities to be sold.

- **Easy entry and exit:** Producers should be free to enter and to leave a purely competitive industry, and an entering firm must be able to sell its product as easily as a long-established firm can. The existence of barriers to entry would reduce competition and thus exert an upward influence on price.

The hallmark of a competitive market is that every participant in it is a price taker. That is, everyone in it takes it for granted that he cannot affect the prices at which he buys or sells, so does the best he can in the light of those prices. For this situation to hold, there must be a large number of suppliers in the market, tolerably equal in size, so that no one firm can have an appreciable effect on the price or aggregate supply of the commodity, and so that no one firm's actions significantly influence the fortunes of any other firm. It must also be true that consumers do not care much, if at all, which firm they buy from, so that they respond readily to small differences in the prices charged by different firms if any should arise.

The simplistic grandeur of the competitive-market model can be helpful as well as misleading. The competitive model of markets is helpful in two ways: It establishes an explanatory framework for an economic system which is loosely competitive in certain respects, and it provides a useful basis for identifying resource misallocation. However, this model can be dangerous if the ways in which it diverges from reality are not fully appreciated. Whether reputable economists ever thought pure competition was a full explanation of the economic organization of any society is doubtful. The fact is, today pure competition does not correspond to the real world.

Imperfect Competition

Both monopolistic competition and oligopoly are forms of imperfect product markets that are quite typical of firms in the economy. Examples of imperfectly competitive markets are the aluminium industry, automobile manufacturing, petroleum and steel production. In markets characterized by *monopolistic competition*, a large number of firms exist, and no firm can fully control price. Monopolistic competition is typically characterized by differentiated products, relatively easy entry into the industry, and absence of collusion between producers. On the other hand, *oligopolistic markets* are those dominated by a few firms supplying nearly all of the output in an industry. Oligopolistic firms are dependent upon the acts and decisions of other oligopolists and may, therefore, behave in such a way as to anticipate the actions of their rivals. Oligopolistic markets may be characterized by either uniform or differentiated products, but entry into the industry is restricted. Barriers to entry sometimes arise, for example, when a firm acquires a technological advantage. Oligopolistic firms often engage in collusion by setting a common price, as well as by dividing up markets.

Concern over imperfect competition results from the ease with which imperfectly competitive firms may avoid the controlling forces of competition that lead to the efficient allocation of limited economic resources. The absence of rivalry

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among producers results in less output than the maximum possible with a given stock of resources and technology. Imperfections in product markets can also lead to a different composition of output from that which might be desired by society. Furthermore, imperfect competition may result in raising existing entry barriers into an industry. In comparison to pure competition, imperfectly competitive firms generally charge higher prices and earn economic profits, while producing less output—although these outcomes are not guaranteed by any means.

Characteristics of Imperfect Competition

There are four general characteristics of imperfect competition: product differentiation, product promotion, entry and exit barriers, and price control by firms.

- 1. Product differentiation:** One characteristic of imperfect competition is the existence of a differentiated product. Sometimes the differentiation is real and at other times it is contrived in the eyes of the buyer. *Differentiation of products* means that producers distinguish the brand, quality, or ingredients of their products. Product differentiation correctly implies that the product or service of each firm is unique in certain ways, and that the products of other firms are not perfect substitutes. Differentiation thus allows producers to have an individual price policy. Consequently, the firm may be in a position to make either a price or a quantity decision—not just the latter, as was true in the purely competitive model.
- 2. Product promotion:** Firms in an imperfect market also distinguish their output in part through promotional expenditures on qualitative differences. Depending upon the degree and character of the imperfect market, producers engage in advertising to promote alleged and real qualitative differences in hopes of convincing consumers that their product is unique from and superior in one way or another to the products of other firms. If it is successful, product promotion tends to make the demand curve for each firm become more inelastic and increase or shift rightward. That is, a higher price can be charged for each possible quantity depicted for an imperfectly competitive firm.
- 3. Entry barriers:** Imperfect competition also may be typified by the existence of barriers which make it difficult or impossible for other firms to enter the industry. Large financial requirements, highly technical capital resources, patent laws, and exclusive ownership or control of limited supplies of raw materials are different types of entry barriers. When they are combined with product differentiation and product promotion, entry barriers help insulate an imperfectly competitive firm from competition.
- 4. Price control:** The above three characteristics of imperfect competition are complemented by the existence of limited numbers of firms in relation to market size. Although, the differences between one firm (monopoly), a ‘few’

firms (oligopoly), and many firms (monopolistic competition) are important, there are common characteristics here also. The important feature of imperfect competition is not the absolute number of firms, but rather the extent or degree to which firms can control or influence market price through their decisions. A small, localized market serviced by four or five medium-sized grocery stores, for example, may not appear to be a form of imperfect competition, but such firms may very well behave in ways comparable to the few large steel or automobile corporations. In pure competition, firms are so numerous that one firm cannot affect the market price, whereas in monopoly the firm has perfect control over price, since it is the only supplier for the market. Oligopoly and monopolistic competition involve less price control by the firm. The crucial consequence of imperfect competition as a general form of market structure is price control—demand is not perfectly elastic to such firms, as it is in pure competition.

Monopolistic Competition

Monopolistic competition is the form of market organization in which there are many sellers of a heterogeneous or differentiated product, and entry into and exit from the industry is rather easy in the long run. Differentiated products are those which are similar, but not identical and satisfy the same basic need. Examples are the numerous brands of breakfast cereals, toothpaste, cigarettes, detergents, cold medicines, etc. The differentiation may be real (for example, the various breakfast cereals may have greatly different nutritional and sugar contents) or imaginary (for example, all brands of aspirin contain the same basic ingredients). Product differentiation may also be based on a more convenient location and/or more courteous service.

As the name implies, monopolistic competition is a blend of competition and monopoly. The competitive element results from the fact that in a monopolistically competitive market (as in a perfectly competitive market), there are many sellers of the differentiated product, each too small to affect others. The monopoly element arises from product differentiation (i.e., from the product sold by any other seller. The resulting monopoly power is severely limited, however, by the availability of many close substitutes. Thus, if the seller of a particular brand of aspirin increased its price even moderately, it would stand to lose a great deal of its sales.

Monopolistic competition is most common in the retail and service sectors of our economy. Clothing, cotton textiles, and food processing are the industries that come close to monopolistic competition at the national level. At the local level, the best examples of monopolistic competition are fast-food outlets, shoe stores, gasoline stations, beauty salons, drug stores, and pizza parlours, all located in close proximity to one another. Firms in each of these businesses have some monopoly power over their competitors based on the uniqueness of their product, better location, better service, greater range of product varieties, slightly lower

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prices, etc., but their market power is severely limited by the availability of many close substitutes.

Since, each firm sells a somewhat different product under monopolistic competition, we cannot derive the market demand curve and the market supply curve of the product as we did under perfect competition, and we do not have a single equilibrium price for the differentiated products but a cluster of prices. Our analysis must, therefore, necessarily be confined to that of the 'typical' or 'representative' firm. The graphical analysis will also be greatly simplified by assuming (with Edward Chamberlin, the originator of the monopolistically competitive model that all firms selling similar products face identical demand and cost curves. This is unrealistic, since, the production of differentiated products is likely to lead to somewhat different demand and cost curves. Making such an assumption, however, will greatly simplify the analysis.

As contrasted to a perfectly competitive firm, a monopolistically competitive firm can determine the characteristics of the products, the amount of selling expenses (such as advertising) to incur, as well as the price and quantity of the product.

Oligopoly

Oligopoly is the form of market organization in which there are few sellers of a homogeneous or differentiated product. If there are only two sellers, we have a duopoly. If the product is homogeneous, we have a pure oligopoly. If the product is differentiated, we have, a differentiated oligopoly. While, entry into an oligopolistic industry is possible, it is not easy (as evidenced by the fact that there are only a few firms in the industry).

Oligopoly is the most prevalent form of market organization in the manufacturing sector of industrial nations, including the United States. Some oligopolistic industries in the United States are automobiles, primary aluminium, steel, electrical equipment, glass, breakfast cereals, cigarettes, soaps and detergents, and many others. Some of these products (such as steel and aluminium) are homogeneous, while others (such as automobiles, cigarettes, breakfast cereals, soaps and detergents) are differentiated. Oligopoly exists also when transportation costs limit the market area. For example, even though there are many cement producers in the United States, competition is limited to the few local producers in a particular area.

Since, there are only a few firms selling a homogeneous or differentiated product in oligopolistic markets, the action of each firm affects the other firms in the industry and vice versa. For example, when General Motors introduced price rebates in the sale of its automobiles, Ford and Chrysler immediately followed with price rebates of their own. Furthermore, since price competition can lead to ruinous price wars, oligopolists usually prefer to compete on the basis of product differentiation, advertising and service. These are referred to as non-price competition. Yet, even here, if GM mounts a major advertising campaign, Ford and Chrysler are likely to soon respond in kind. When Pepsi mounted a major

advertising campaign in the early 1980s, Coca-Cola responded with a large advertising campaign of its own.

From what has been said, it is clear that the distinguishing characteristic of oligopoly is the interdependence or rivalry among firms in the industry. This is the natural result of fewness. Since, an oligopolist knows that its own actions will have a significant impact on the other oligopolists in the industry, each oligopolist must consider the possible reaction of competitors in deciding its pricing policies, the degree of product differentiation to introduce, the level of advertising to undertake, the amount of service to provide, etc. Since, competitors can react in many different ways (depending on the nature of the industry, the type of product, etc.), we do not leave a single oligopoly model but many—each based on the particular behavioural response of competitors to the actions of the first. Because of this interdependence, managerial decision making is much more complex under oligopoly than under other forms of market structure.

The sources of oligopoly are generally the same as for monopoly. They are as follows:

- Economies of scale may operate over a sufficiently large range of outputs as to leave only a few firms supplying the entire market.
- Huge capital investments and specialized inputs are usually required to enter an oligopolistic industry (say, automobiles, aluminium, steel and similar industries), and this acts as an important natural barrier to entry.
- A few firms may own a patent for the exclusive right to produce a commodity or to use a particular production process.
- Established firms may have a loyal following of customers based on product quality and service that new firms would find very difficult to match.
- A few firms may own or control the entire supply of a raw material required in the production of the product, and
- The government may give a franchise to only a few firms to operate in the market.

The above are not only the sources of oligopoly, but also represent the barriers to other firms entering the market in the long run. If entry were not so restricted, the industry could not remain oligopolistic in the long run. A further barrier to entry is provided by limit pricing, whereby existing firms charge a price low enough to discourage entry into the industry. By doing so, they voluntarily sacrifice short-run profits in order to maximize long-run profits.

Check Your Progress

3. What are the characteristics of perfectly competitive market?
4. Give examples of imperfectly competitive markets.
5. Mention the four general characteristics of imperfect competition.

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6.4 INDUSTRIAL CONCENTRATION, MARKET CONCENTRATION AND SELLERS CONCENTRATION

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Market concentration or more specifically, 'the degree of sellers' in the market is an important element of the market structure which plays dominant role in determining the behaviour of the firm in the market. In the context of industrial economics, however, the implication of market concentration are far wider. By market concentration we mean the situation when an industry or market is controlled by a smaller number of leading producers who are exclusively engaged in that industry. In other words in a market some big firms have dominance over production and sales. The limit of this type of concentration determine two variables- (i) The number of the firms in industry (ii) their relative size distribution.

If in a market number of firms is limited, the size of the firms will be relatively big and big firm will have the control over a large portion of total supply. This situation is known high quantity of seller concentration. High class industrial concentration depends upon the market power of every firm. Market power means capacity of firm or seller to influence the price of product. In the perfect competitive market, market power is zero. Which means seller concentration is Zero.

Market concentration is a feature of the imperfect competition where few firms dominate the entire industry. To understand the mechanism by which market concentration determines the economic behaviour of such firms/sellers vis-a-vis that of other in the industry, there are some theoretical models which will, of course, be integral parts of microeconomic theories of oligopolistic and monopoly market.

In the Situation of Homogeneous Products with uniform Single Price

Example:- Let us assume that there are few large firms along with many small firms selling a homogeneous product at a uniform single price. This will be called as **homogeneous oligopoly**. The large firm will be having interdependence among themselves in the sense that variations in the price or supply of any one of them will have significant effect on the market supply, equilibrium market price and revenue of other firms. This is certainly a situation of market concentration affecting the firm. It can be explained with the help of the following mathematical derivation:

Let the total supply for the product be specified as Q units and the market demand function be:

$$P = f(Q) = f(q_1 + q_2 \dots \dots \dots + q_i \dots \dots \dots + q_n) \quad (6.1)$$

Where P= product price q_i = output of i^{th} firm

$$i = 1, \dots, n \text{ and } \sum q_i = Q$$

The revenue function for the i th firm is given by

$$R_i = Pq_i \quad (6.2)$$

Differentiating equation 6.2 with respect to q_i , the marginal revenue for the i th firm will be as,

$$\frac{\delta R_i}{\delta q_i} = P + q_i \frac{\delta P}{\delta Q} \cdot \frac{\delta Q}{\delta q_i} \quad (6.3)$$

Where $\frac{\delta Q}{\delta q_i} = 1$, since an increase of one unit of output by i th firms means one unit increase in the total market supply.

Equation 6.3 can be rewritten as,

$$\frac{\delta R_i}{\delta q_i} = P \left[1 + \frac{q_i}{Q} \cdot \frac{Q}{P} \cdot \frac{dP}{dQ} \right] \quad (6.4)$$

Where q_i/Q is market share of the i th firm.

We have assumed uniform price for the industry which changes if output of any big firm changes. Let us define 'the market quantity elasticity of price' (e_Q) as the percentage change in market price with a marginal per cent change in the market quantity supplied, that is,

$$(e_Q) = \frac{\delta P}{\delta Q} \cdot \frac{Q}{P} \quad (6.5)$$

Substituting equation (6.5) in equation (6.4), we get

$$\frac{\delta R_i}{\delta q_i} = P \left[1 + \frac{q_i}{Q} \cdot e_Q \right], (i = 1, \dots, n) \quad (6.6)$$

The equation shows that marginal revenue for the i th firm depends on product price, market share in output for the firm and quantity-elasticity of price. If the firms are of uneven sizes then average marginal revenue from the firm in the industry be written as,

$$MR = \frac{q_1}{Q} (MR_1) + \frac{q_2}{Q} (MR_2) + \dots + \frac{q_n}{Q} (MR_n) \quad (6.7)$$

Market shares of the firms are being taken as weights to compute the average marginal revenue (MR). Making the substitution for MR_1, MR_2, \dots, MR_n from the equation 6.6 and simplifying we get

$$MR = P \left[1 + \sum_{i=1}^n \left(\frac{q_i}{Q} \right) 2 \cdot e_Q \right] \quad (6.8)$$

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or

$$MR = P[1 + H \cdot e_Q] \quad (6.9)$$

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Where H is the Herfindahl index of concentration. This equation says that average marginal revenue depends on products price (P), concentration index (H) and the elasticity coefficient e_Q . If all firms are of equal size then $H=1/n$ which tends to zero as n becomes greater and greater as in competitive situation. If so, the marginal revenue will be almost equal to price. This is the familiar result for the competitive market. There is only one firm then $H=1$, and so we get the monopoly extreme of the market structure which is the most concentrated situation. Between these limit of H we get the various degrees of market concentration, and the marginal revenue for the firms varies in direct proportion of that. Remember e_Q is negative the marginal revenue cannot therefore be greater than product price. Marginal revenue will be positive when e_Q is less than one which is the situation where the price elasticity is greater than one. The deviation of marginal revenue from the price is a direct consequence of the monopoly power prevailing in the market due to market concentration.

In The Situation of Differentiated Products With Different Price

Let us now examine the situation when firms are selling differentiated products with different prices. If a large firm makes changes in the price and/or quantity of its product, it will affect the market shares of all other firms in the market. How the number of firms and their relative size are relevant in this situation is the question before us to answer. To analyse this situation A simple approach is provided by Bishop. For this purpose he used price and cross elasticity. According him, when a firm makes changes in its product price, all other prices remaining same, the quantity of output supplied by the firm as well as by other firms will change. The responsiveness of the changes in quantity of output as a result of the price change in given by the price elasticity of demand for the firm and the cross elasticity of demand for the other firms. We can write it as:

$$e_{ii} = \text{own elasticity} = \frac{\delta q_i}{\delta p_i} \cdot \frac{p_i}{q_i}$$

And (6.10)

$$e_{ji} = \text{cross elasticity} = \frac{\delta q_j}{\delta p_i} \cdot \frac{p_i}{q_j}$$

Where j stands for remaining n-1 firm Let e_{ii} be -5. When total market demand for the close substitute good is constant, increase in the supply of any one variety means a decrease in the total supply of all other varieties by the same

magnitude. Thus when the firm gets 5 per cent increase in its sales, it means 5 per cent reduction in the sales of other firms. And if there are $n-1$ remaining firms so each one will get $5/(n-1)$ per cent decrease in the sales by one per cent decrease in the price of the i th firm. This means $e_p = -5(n-1)$. This shows the relationship between own elasticity and cross elasticity as:

$$e_{ji} = \frac{e_{ii}}{n-1} \quad (6.11)$$

Where n is the number of firm assumed to be equal in size. If n is very large, e_{ii} will be very low tending towards zero. The impact on other firms becomes negligible. However for a small group of firms i.e. concentrated industries e_{ji} will be considerably high. It means, if we write equation 6.11 as,

$$n-1 = \frac{e_{ii}}{e_{ji}} \quad (6.12)$$

The ratio of the two elasticity coefficient is giving us the number of forms in the market which is one aspect of the market concentration. If the firms are not equal in size still this ratio may be used as a ‘number equivalent’ to show the concentration as Bishop argued. In such situation the cross elasticity will have to be averaged by taking appropriate weight for the size differences of the firms.

Inequality in the size distribution of the firms is a crucial factor for market concentration. In the case of larger firms fluctuations in their output or prices will affect the output and prices of all other firms in the industry but there may not be any such effect of a small firm changes its output or price. Since larger firm decisions affect the industry as a whole, they therefore, face counter policies from the rivals and so are interdependent on each other in this respect. This is an important feature of the concentrated industries. A small firm however, acts more or less independently since its policies are not going to affect the other firms significantly. The size distribution of the firms in an industry or market thus has important implication for market concentration independent of the number of firms.

There are some other effect of the number and size distribution of the firms on business conduct. One of them is the ability of each firm in the market keep watch over the activities of the other firms. For this a firm has to devote considerable managerial efforts to collect the information about various aspects of the rival firms’ activities such as prices, products, sale activities, investment etc. The cost of such information gathering increases with the increase in the number of firms of equal size. However, if the market is concentrated then only large firms are watched for this purpose.

There is another important aspect of the concentrated market. If the market is having some price variation across the firms because of product differentiation or something else, the customers would then search for the lowest price supplier.

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If the number of supplier is large enough, the search cost for the consumer may be quite high, more than the expected price reduction gain by the search. In the case of concentrated market, since there will be few large firms domination the market it will be possible for the customer to initiate the search at a lower cost for the lowest price supplier, he has to collect only few price quotations in this situation. The oligopolistic firms would be knowing this fact well, they may therefore, keep their prices almost at the same level to protect their individual interest. This may be one of the reasons for the price-stickiness in such a market.

Measurement of Market Concentration: Various quantitative index have been suggested for the measurement of market concentration. Some of them are used to measure the monopoly power and some for market concentration. These two terms monopoly power and market concentration are closely interrelated and cannot be separated from each other in the measurement process. The measures for monopoly power would be more appropriate at firm level. They indicate the actual monopoly power in the market or industry as a whole. Some measures are as under –

- 1. The Concentration Ratio:-** The most popular and perhaps simplest index for measurement of market concentration or monopoly power of the few firms is the use of the concentration ratio, that is, the share of the market or industry held by some of the largest firms. The market share of such firms may be taken either in production, sales or employment or any magnitude of the market. Symbolically it may be written as-

$$C = \sum_{i=1}^m p_{i,m=4,8,10,12,\dots,20,\dots}$$

Where p_i market share of i th firm in descending order. The normal practice is to take four firms ($m=4$) concentration ratio but if the total number of firms operating in the market is large enough then one has to compute the 8-firms or even 20 firms concentration ratio to assess the situation. The higher the concentration ratio the greater the monopoly power or market concentration existing in the industry.

There are some limitations of this index. (i) The concentration ratio depend to a great extent on how the market is defined. A broad market would tend to reduce the computed concentration ratio whereas a narrow one would usually have the opposite effect. (ii) The ratios do not reflect the presence or absence of potential entry of firms. (iii) The ratios may give conflicting picture of the concentration with the use of different variables for size of the firms.

In spite of limitations, the ratios are widely used in industrial economics. They are simple to compute, readily available for the manufacturing sectors and capable of measuring market concentration with a finer classification of the industries

2. **The Hirschman-Herfindahl Index:-** It is a sum of the squares of the relative sizes of the firms in the market, where the relative sizes are expressed as proportions of the total size of the market. We can write it symbolically as-

$$\text{Herfindahl Index (H)} = \sum_{i=1}^m (p_i)^2$$

Where $p_i = q_i/Q$, q_i is output of i th firm and Q is total output of all the firms in the market and n is the total numbers of the firms. This index takes account of all firms in the market. Their market shares are weighted by the market share itself. The larger the firm, more will be its weight in the index.

3. **The Rosenbluth index:-** This index is based on rank of each firm in the market and its market share. It gives more weight to the number of the firm and importance of small firm. It is computed as-

$$R = \frac{1}{[(2\sum_{i=1}^n i \cdot p_i) - 1]}; \frac{1}{n} \leq R \leq 1$$

Where n is number of firms p_i = market share of i th firm. this index has the apparent properties as the H index but it is rarely used in practice.

4. **The Entropy index:-** This index has been suggested by Hart to measure the degree of market concentration. Symbolically we can write it as-

$$E = \sum_{i=1}^n p_i \ln \frac{1}{p_i}; 0 \leq E \leq 1 \ln n$$

Where E is defined as Entropy Coefficient, p_i is the market share of i th firm and n the number of firms. This coefficient in fact measures the degree of market uncertainty faced by a firm in relation to given customer. This will be situation when number of firms is large enough i.e. market is not concentrated. For a monopoly firm $n=1$ the entropy coefficient takes the value of zero which means no uncertainty and maximum concentration. Thus we find opposite relationship between the entropy coefficient E and the degree of market concentration.

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The entropy coefficient is a useful measure of market concentration in the sense that the population of the firm for which the entropy coefficient is to be computed can be decomposed or disaggregated into several groups, say, on the basis of product, sizes, region, classification of industry etc., to compute separate entropy coefficients for them a weighted sum of such coefficient would then give the overall entropy coefficient. Such decomposition is not possible in the case of other indexes of market concentration.

- 5. The Horvath Index:-** This is what Horvath calls as a comprehensive concentration index (CCI) in the sense that it takes into account the share of the largest firm in the market in discrete manner and of the other firm 'market shares on a weighted form conforming with other summary measures of the concentration. The formula Horvath has suggested is as under-

$$CCI = p_i + \sum_{j=2}^n P_j^2 [1 + (1 - p_j)], i = 1, j = 2, \dots, n$$

The upper limit for the CCI is unit when there is only one firm and the lowest limit is $(3n^2 - 3n + 1) / n^3$ provided $n \neq 2$. For $n=2$ i.e. for a duopoly, CCI comes out to be equal to 0.875, p_i is the discrete part of the concentration and remaining portion of the formula is the summary part. This index is not popular in use as it does not provide either theoretical or computational advantages over the other index.

- 6. The Lerner Index:-** Some index are mainly used to measure monopoly power of the firm while some can applied to the market as a whole with little modification or by simply reinterpreting the variables concerned. The Lerner index is the best known of them. It can be expressed as-

$$I = \frac{\text{Price} - \text{Marginal Cost}}{\text{Price}}$$

We know under perfect competition price will be equal marginal cost. If there is a difference between the two such that price > marginal cost; this is because of market imperfection or what we call as the monopoly power of the firm. Greater the deviation between price and marginal cost, higher monopoly power of the firm. The steps to derive the index are straightforward. Writing expression for marginal revenue (MR) for monopoly firm we get-

$$MR = P \left(1 + \frac{1}{e_p} \right)$$

e_p = Price elasticity of demand and for profit maximisation we have the familiar condition

$$MR=MC$$

From these two equations we get the Lerner Index as

$$\frac{P - MC}{P} = \frac{1}{e_p} = I$$

That is, the index is inverse of the price elasticity of demand. Remember

$$e_p < 0, \text{ so } -\frac{1}{e_p} > 0$$

A monopoly firm operates only in the elastic Zone of its demand curve which mean $e_p \geq 1$. Therefore, the monopoly power of the firm will be 1 when $e_p = 1$ and will be zero when $e_p = \infty$. suppose there are more than one firm in the market. The Lerner index of monopoly power for firm i will be,

$$\frac{P - MC_i}{P} = \frac{S_i}{e_p}$$

Where S_i is the market share of the i th firm. The greater a firm's market share the greater will be its market power other things being equal.

The role of market concentration is define by the equation is $MR=P(1+H \cdot e_Q)$ where H is the Herfindahl index of concentration and $e_Q = 1/e_p$ = quantity elasticity of price, MR = average marginal revenue for the market and P = average price similarly, let MC be average marginal cost for the market, we thus get the Lerner index for the market as

$$\frac{P - MC_i}{P} = -H \cdot e_Q = -\frac{H}{e_p}$$

$$e_p < 0, \text{ so } -\frac{H}{e_p} > 0$$

For one- firm industry $H=1$ this coverage to the conventional Lerner index shown by equation. The greater the market concentration the greater will be average Lerner index for the firms, ceteris paribus. Lerner index is based upon static price theory.

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7. The Dispersion Measures :- These measures take into account the dispersion of the market share across the firms in the industry. This is expressed as-

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$$V = \frac{\sigma}{P} = n \times \sqrt{\frac{1}{n} \sum_{i=1}^n \left(P_i - \frac{1}{n} \right)^2}$$

where

$P = \frac{\sum_{i=1}^n p_i}{n} = \frac{1}{n}$ is the average market share of the firms,

σ = Standard deviation of the market shares,

P_i = share of i th firm (in proportion),

n = number of the firms

The coefficient varies between 0 and $\sqrt{n-1}$. Greater the coefficient of variation, more will be the inequality in distribution of the market shares and hence more concentration.

Another index which is based on inequality and hence dispersion in the size of firms in a market can be derived from the Lorenz curve. The Lorenz curve shows the variation in cumulative percentage distribution of market share with cumulative percentage distribution of firms from smallest to largest in the market. If firms are cumulated from largest to smallest then the curve would look like the concentration curve.

If the firms are equal in size the Lorenz curve would then be a straight line. If there is inequality in the distribution of the market share the Lorenz curve would then bend away from the diagonal towards the X-axis. A coefficient which may be called the Lorenz coefficient or 'Ginni coefficient' as is commonly known is computed by dividing the area bounded between the Lorenz curve and the diagonal line OO' by the area of the triangle under the diagonal. The coefficient varies between 0 to 1 as the degree of inequality in the distribution increases. Thus it is used as an index to measure the concentration.

The index has limitations as well as advantages. The first problem is that sufficient and accurate data about the market share of every firm in the market may not be available. In fact the coefficient does not represent the unique distribution. The advantage of the index is that it takes into account all firms in the industry unlike the concentration ratios.

8. The Elasticity Index :- As we have shown in equation 4.10 and 4.11 the ratio of own elasticity of demand and cross elasticity of demand for a firm could be used as a measure of monopoly power or market concentration in term of number-equivalent i.e.

$$e_{ji} = \frac{e_{ii}}{n-1} \quad \text{or} \quad n-1 = -\frac{e_{ii}}{e_{ji}}$$

Where e_{ii} is own elasticity of demand and e_{ji} = cross elasticity of demand

An increase in the ratio means lesser number of firms in the market and a decrease means higher number. In the context of measuring the monopoly power, sometimes only cross elasticity is used as index. This is because under pure monopoly the cross elasticity will be zero. Greater number of firms and products higher will be the cross elasticity. There is difficulty with this index as cross-elasticity may be zero for monopoly and its antithesis, perfect competition since no single perfect competitor is able to influence the overall market quantity. In practice there are numerous difficulties in estimating the cross elasticity so they are rarely used.

9. The Profit Ratio:- This measurement is suggested by Bain. According to him when a firm persistently earns excess profit for a long period of time, then it should be attributed to its monopoly power. The monopoly power and profit rate are assumed to be linked positively. The profit rate is defined as “that rate which when used in discounting the future rents of the enterprise, equate their capital value to the cost of those assets which would be held by firm if it produced its present output in competitive equilibrium. This rate of profit then compared with the normal rate of profit to assess the monopoly power of the firm. The profit rate index for monopoly power is thus weak proposition. It is unsatisfactory as well as unreliable.

The extensive work has done in this direction and the progress in search for comprehensive index of market power or concentration which has been quite satisfactory. There is no recent development in this direction except a few extensions or generalisation of some above indices. For present the Herfindahl index the concentration ratio and the lerner index are comparatively better than other indexes.

Causes for market concentration:- One would naturally be interested in knowing the factor that are responsible for market concentration. The factor, in the monopoly market form, concentrate the market is “barriers to entry” these barriers are generally categorise as-

1. Absolute cost advantage
2. Product differentiation advantage
3. Scale economy barriers

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1. Absolute cost advantage:- Absolute cost advantage arise due to following reason-

- i. Control of superior production techniques by the established firms maintained either by patents, or by secrecy;
- ii. Exclusive ownership by established firms of superior deposits of resources required in production;
- iii. Inability of entrant firms to acquire necessary factors of production on term of as favourable as those enjoyed by established firm;
- iv. Less favoured access of entrant firms to liquid funds for investment reflecting a higher effective interest cost or in simple unavailability of funds in the required amount

2. Product differentiation advantage:- Product differentiation advantage arise from-

- i. Patent control of superior product designs by established firm
- ii. The possible accumulated preference of buyers for established firms' products and their reputation;
- iii. Ownership or contractual control of favourable distributive outlet by established firms
- iv. Advertisement, marketing strategies, R&D and other conditions favourable to the established firms

3. Scale Economy Barriers:- Scale Economy Barriers arises due to following reasons-

- i. The real economies of scale accrue to the established firms by virtue of their having attained the minimum efficient size absolutely and in relative term to the size of the market, and
- ii. The pecuniary benefits accruing to the established firms as compared to new one. If economies of the scale are large enough then the established firms are likely to have larger market shares and be able to inflict penalties on the newcomers and small firms.

Further there are some other factors like collusive activities of the established oligopolistic firms, pricing policies such limit pricing tactics, merger activities and poor or inefficient economic administration by the government etc., which may perpetuate market concentration.

As mention above, the barriers to entry cause market concentration which is further reinforced by some barriers to exit. In principle business units are free to leave the market, i.e. close down. However as seen in reality, there might be some market obstacles which restricted the option of the firms to close down. Sunk cost, compensation to workers and other staff members, loss of goodwill in the market, social pressure of employment maintenance, are few such factors which we call as barriers to exit.

The smaller firm may leave the market because of lesser impact of the barrier to exit but larger firms will remain in the market in spite of the loss. The result is that the market concentration will go up when smaller firms leave the market but larger firms do not. Instead of closing down large firm prefers to be taken over by other firms or improve their market position by other way such through diversification, R&D, changes in organisation and so on.

Concentration and market performance:- There are many behavioural hypotheses about the concentration and market performance.

- 1. Concentration and profit:-** A firm derives market power or monopoly power in the situation of concentration. such market power via market conduct activities leads to an increase in the profitability of the firm. It frequently assumed the persistency of high rates of profits over a long period is the consequences of high degree of intra-industry concentration. Concentration have strong correlation with profitability.
- 2. Concentration and price cost margin:-** Price cost margin is another way to define profitability. This a short run view of profitability based on current sales and cost figures. Say, the average price cost margin is jus a ratio of these two magnitudes.
- 3. Concentration and growth of the firm;-** According to one view the firm with the market power, as a consequence of concentration may prefer to maintain high rate of profit by restricting the output and charging high price. If it grows it has to sacrifice some profit margin and lower price which may not be in its interest. Moreover there will be all kinds of restrictions imposed by the government to stop further growth of such firms.
- 4. The second view about the concentration and growth of the firm and hence the market is a positive one.** In order to maximise the long term profit, firms may like to grow over time even under market concentration. They may prefer to create excess capacity to meet the future growing demand and to discourage new entry in the market. They may have some short term sacrifice of profit in order to stimulate long term profit.
- 5. Concentration and Technology:-** Concentrated industries are the most research oriented and technically progressive. It is true that the few firms who enjoy monopoly power in a concentrated industry will be large enough. They will be having stability, financial resources and ability to initiate the process of Research and design(R&D) and gain the benefits from them.

Check Your Progress

6. Mention the variables which can be determined by the limit of market concentration.
7. Name the index which is based on rank of each firm in the market and its market share.

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6.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

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1. A competitive market is characterized by price rivalry, ultimately resulting in only one market-established price.
2. Three conditions characterize a competitive product market: (a) Entry into and exit from the market by individual firms is easy, (b) all firms in the industry sell a homogenous or a standardized product, and (c) the number of firms is so large that no individual producer is able to influence the market price of the product.
3. The characteristics of perfectly competitive market are as follows:
 - (i) A large number of producers,
 - (ii) A homogeneous good,
 - (iii) No artificial restrictions placed upon price or quantity, and
 - (iv) Easy entry and exit.
4. Examples of imperfectly competitive markets are the aluminium industry, automobile manufacturing, petroleum and steel production.
5. There are four general characteristics of imperfect competition: product differentiation, product promotion, entry and exit barriers, and price control by firms.
6. The limit of market concentration determine two variables- (i) The number of the firms in industry (ii) their relative size distribution.
7. The Rosenbluth index is the index which is based on rank of each firm in the market and its market share.

6.6 SUMMARY

- A competitive market is characterized by price rivalry, ultimately resulting in only one market-established price.
- If a firm has the ability to influence the market price of a product, an imperfectly competitive market condition is said to prevail.
- Many experts regard barriers to entry into an industry as a major reason of the existence of market power in an economy. Monopoly requires complete barriers to entry, and partial entry barriers can lead to varying degrees of partial monopoly as found in monopolistic competition or oligopoly.
- Perfect market is a market in which there are large number producers, none of whom has any influence at all on the price at which he sells.
- The hallmark of a competitive market is that every participant in it is a price taker. That is, everyone in it takes it for granted that he cannot affect the

prices at which he buys or sells, so does the best he can in the light of those prices.

- Both monopolistic competition and oligopoly are forms of imperfect product markets that are quite typical of firms in the economy.
- In markets characterized by monopolistic competition, a large number of firms exist, and no firm can fully control price.
- One characteristic of imperfect competition is the existence of a differentiated product. Sometimes the differentiation is real and at other times it is contrived in the eyes of the buyer.
- Monopolistic competition is the form of market organization in which there are many sellers of a heterogeneous or differentiated product, and entry into and exit from the industry is rather easy in the long run.
- Differentiated products are those which are similar, but not identical and satisfy the same basic need.
- Monopolistic competition is most common in the retail and service sectors of our economy. Clothing, cotton textiles, and food processing are the industries that come close to monopolistic competition at the national level.
- At the local level, the best examples of monopolistic competition are fast-food outlets, shoe stores, gasoline stations, beauty salons, drug stores, and pizza parlours, all located in close proximity to one another.
- Oligopoly is the form of market organization in which there are few sellers of a homogeneous or differentiated product. If there are only two sellers, we have a duopoly.
- Market concentration, or more specially, 'the degree of sellers' in the market is an important element of the market structure which plays a dominant role in determining the behaviour of the firm in the market.
- By market concentration we mean the situation when an industry or market is controlled by a smaller number of leading producers who are exclusively engaged in that industry.
- Various quantitative index have been suggested for the measurement of market concentration. Some of them are used to measure the monopoly power and some for market concentration.

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6.7 KEY WORDS

- **Perfect Market:** It is a market in which there are large number producers, none of whom has any influence at all on the price at which he sells.
- **Homogeneous Product:** It is a product that cannot be distinguished from competing products from different suppliers.

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- **Differentiation of Products:** It means that producers distinguish the brand, quality, or ingredients of their products.
- **Monopolistic Competition:** It is the form of market organization in which there are many sellers of a heterogeneous or differentiated product, and entry into and exit from the industry is rather easy in the long run.
- **Oligopoly:** It is the form of market organization in which there are few sellers of a homogeneous or differentiated product.
- **Rebate:** A rebate is an amount paid by way of reduction, return, or refund on what has already been paid or contributed. It is a type of sales promotion that marketers use primarily as incentives or supplements to product sales.

6.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Distinguish between perfect and pure competition.
2. What is monopoly? What are the sources of monopoly?
3. How is oligopoly different from monopolistic competition?
4. Define market structure.
5. What do you mean by seller concentration/market concentration?
6. Define the profit ratio.

Long Answer Questions

1. Describe the characteristics of imperfect competition.
2. What are the characteristics of perfect competition?
3. Illustrate seller concentration with the help of examples.
4. What do you mean by sellers concentration/monopoly power? How can we measure this.
5. Define market concentration and discuss the factors which are responsible for market concentration.

6.9 FURTHER READINGS

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UNIT 7 PRODUCT DIFFERENTIATION

NOTES

Structure

- 7.0 Introduction
- 7.1 Objectives
- 7.2 Meaning of Product
- 7.3 Product Classification
- 7.4 Differentiation
- 7.5 Entry Conditions or Barriers to Entry
- 7.6 Answers to Check Your Progress Questions
- 7.7 Summary
- 7.8 Key Words
- 7.9 Self Assessment Questions and Exercises
- 7.10 Further Readings

7.0 INTRODUCTION

People think that product is a tangible offering. But product can be more than that. A product is anything that can be offered in the market to satisfy the wants and need of the people in the society. Products that are marketed include goods and services experiences, event, persons, place, properties, information and idea. A product can be a service. Every product is made at a cost and each product is sold at a price. The price that can be charged depends on the market, the quality, the marketing skill and the segment that is targeted.

Product is one of the important elements of marketing mix. A marketer can satisfy consumer needs and wants through product. A product consists of both goods and services. Decisions on all other elements of marketing mix depend on product. Therefore, product has a major role in determining overall success of marketing efforts.

The increased competition has divided the demand among different players in the market. This has made it very important for businesses to make their customers understand what different they have to offer. product differentiation (or simply differentiation) is the process of distinguishing a product or service from others, to make it more attractive to a particular target market. Product differentiation can be as simple as packaging the goods in a creative way. Successful product differentiation creates a competitive advantage for the product's seller, as customers view these products as being unique or superior. In this unit, you will learn about the concept of product differentiation, meaning and characteristics of product and the entry conditions.

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7.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the meaning and characteristics of a product
- Describe the concept of product classification
- Explain the types, factors and advantages of product differentiation
- Examine the entry conditions

7.2 MEANING OF PRODUCT

A product is something that is produced for sale and purchased in a large quantity. Product is as a result of a manufacturing process. In the market product is anything which can be offered to a market that might satisfy the wants and needs of customer. In retailing, products are called merchandise. In manufacturing, products are bought as raw material and after some processing sold as finished goods. A service is another common product type. The word used for products are good, commodity, service, article or object. In the marketing product has comprehensive meaning.

Definitions of Product-Many marketers and economists have defined the term product. Some important definitions are as under-

Philip Kotler- “Product is anything that can be offered to someone to satisfy a need or a want.”

William Stanton-“Product is complex of tangible and intangible attributes, including packaging, colour, price, prestige, and services that satisfy needs and wants of people.”

W. Alderson-“Product is a bundle of utilities, consisting of various product features and accompanying services.”

In other words-“Product is a bundle of benefits-physical and psychological- that marketer wants to offer, or a bundle of expectations that consumers want to fulfill. Marketer can satisfy needs and wants of target consumers by products. Product includes both good and service. Normally, product is taken as a tangible object, such as a pen, television set, bread, book, vehicle, table, etc. But, tangible product is a package of services or benefits.”

Essentials for the products:- Marketers should consider product benefits and services, instead of product itself. Its importance lies in the service rendered by the product, and not tangible object itself. People are not interested in just possessing the products, but also in the services rendered by the products. We do not buy a car, but transportation service, we do not buy a pen, but writing service. Just owning product is not enough. It must serve our needs and wants. Thus, a physical product is just a medium that offer services, benefits and satisfaction to us. Essential characteristics of the products are as follows:

- A product should be relevant. The users must have an immediate use for it.
- A product needs to be functionally able to do what it is supposed to, and do it with a good quality. The product should be able to satisfy the requirement of customers.
- A product should have a name that people remember and relate to. A product with a name becomes a brand.
- A product needs to be communicated. Users and potential users must know why they are using it, what the benefits from it are and what it does difference. Is it branded or individual is attracted to the product through advertising?
- A product should be adaptable with trends, time and changes in segments of the product.

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Magnitudes of Product- Different people see products differently and their expectations are also different. The magnitude of products is three dimensional, as stated below:

- 1. Social Dimension-** For the society the product is a source of long-term welfare of people. Expectation of society remains a high standard of living, safety, protection of environment, and peace in society.
- 2. Consumer Dimension-** Consumers consider a product is source of expectations or satisfaction. For consumer, total benefits received from product are important.
- 3. Managerial Dimension-** According to management, a product is the total product which includes all those tangible and non-tangible aspects that management wants to offer. Managerial dimension of product covers mainly product-related features, and product-related services.

Characteristics of Product- The concept of product reveals the following characteristics:

1. Product is a base for entire marketing programme.
2. Product includes both good and service.
3. Product is the very important element of marketing mix.
4. Product is a medium of satisfaction to consumers.
5. Different people perceive it differently. Management, society, and consumers have different expectations.
6. Product may be tangible and intangible.
7. The goal of marketer is producing, selling, improving, and modifying the product.
8. In marketing terminology, product means a complete product that can be sold to consumers. The product constitutes branding, labelling, colouring, services, etc.

9. Product includes total offers, including main qualities, features, and services.

Product level- In its market offering the marketer needs to address five product levels which are shown in following figure-

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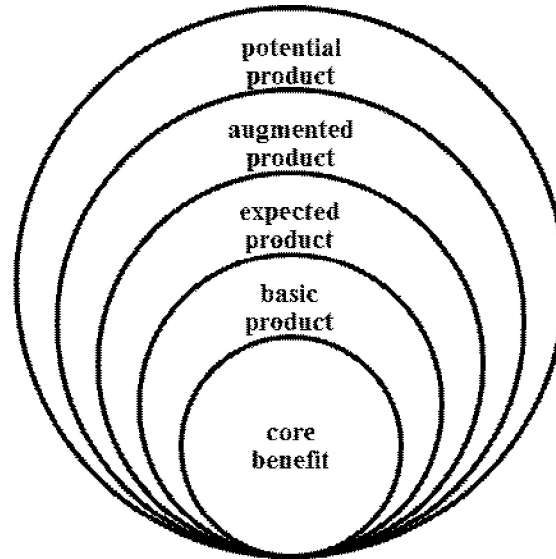


Fig. 7.1 Product Levels and Customer Value

Each level adds more customer value, and the five constitute a customer value hierarchy.

- 1. Core benefit** –It is a fundamental level. This level refers to the actual reason why the customer buys the service and the benefit which he acquires from the product. For example, the mechanic/ electrician buys a drill machine, but in reality, they purchase ‘holes’ which will be made by this drill machine.
- 2. Basic product**- At the second level, the marketer has turned the core benefit into a basic product. For example, in the initial days, mobiles were used only for talking but marketers have added so many functions/ features in this product such as watch, camera, FM, Music, that now we can watch movies in mobile.
- 3. Expected Product**- At the third level, the marketer prepares an expected product. He adds some features and conditions that buyers normally expect when they purchase this product.
- 4. Amplified Product**- At the fourth level, the marketer prepares an amplified product that exceeds customer expectations. In developed countries brand positioning and competition take place at this level. In developing countries and emerging markets such as China and India, however, competition takes place mostly at the expected product level.

Due to amplification of product differentiation arises. At this level the competition is not between what companies produce in their factories but

between what they add to their factory output in the form of delivery arrangements, financing, packaging services, advertising, and customer advice, warehousing and other things people value.

- 5. Potential Product-** At fifth level stands the potential product, which include all the possible augmentations and transformations the product or offering might undergo in the future. For instance, in an era when customers are demanding ever-faster internet and wireless connections.

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Check Your Progress

1. What are some words used for products?
2. State the customer dimension of a product.
3. What is the expected product in customer value hierarchy?

7.3 PRODUCT CLASSIFICATION

Marketers have traditionally classified products on the basis of characteristics- durability, tangibility and use (consumer or industrial). Each product type has an appropriate marketing mix strategy.

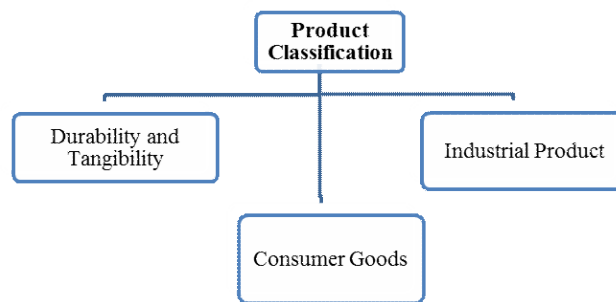


Fig. 7.2 Product Classification

- 1. Durability and Tangibility-** Products can be classified into three groups according to durability and tangibility;

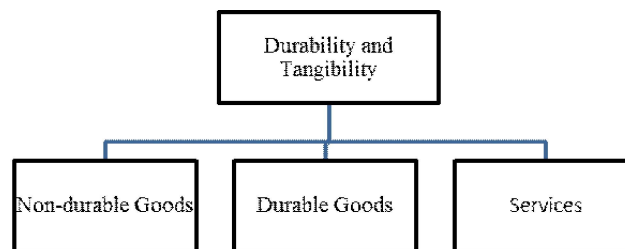


Fig. 7.3 Product Classification According to Durability and Tangibility

- i. Non-durable Products-** These are perishable goods normally consumed in one or few uses, like milk, vegetables and soap.

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ii. Durable Products - These are tangible goods. Durable products can last for a longer period and can be repeatedly used by one or more persons. Television, computer, refrigerator, fans, electric irons, vehicles, etc., are examples of durable products.

iii. Services- Intangibility, changeability, inseparability, etc., are main features of services. Services make our life safe and comfortable. Trust, regularity, reliability, costs, and timing are important issues. The police, the post office, the hospital, the banks and insurance companies, the transportation facilities, can be included in services. All marketing fundamental are equally applicable to services. ‘Marketing of services’ is the emerging aspect of modern marketing.

2. Consumer Products - Consumer products are those items which are aimed at satisfying personal and family needs and desires. There is no need for further commercial and engineering processes in these products. Consumer products can be further divided into following parts-

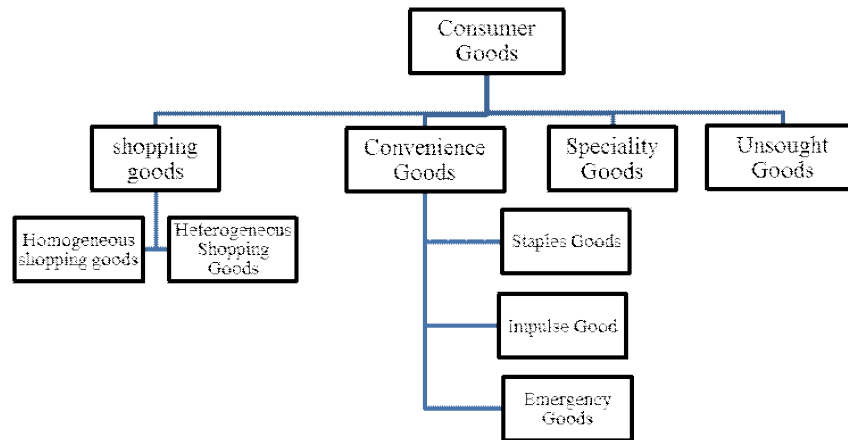


Fig. 7.4 Product Classification of Consumer Goods

i. Shopping Products - Shopping products focus on durable or semi-durable items that have relatively long life span. Shopping products include such products as clothing, TV, Camera, Car, washing Machine etc. Shopping products can be further classified into two parts -

- **Homogeneous shopping Products** - Homogeneous products are those products that tend to be similar to each other in the term of performance, benefits and pricing. For example, most washing machines can be considered as Homogeneous products. They tend to have similar wash loads, wash similar types of clothes and have similar speed setting. However, brand differentiates themselves from the others within the marketplace.
- **Heterogeneous Shopping Products** - Heterogeneous products tends to be non-standard products where features, benefits and image tends to outweigh the price. In this case

individuals' personal behavioural factors tend to influence their purchasing decisions. Goods such as handmade or handcrafted, diamond rings and bracelets are designed to appeal to individual tastes.

To buy shopping products consumers might devote significant time to collect a range of comparative information covering such points of feature, performance, delivery, and guarantee and after sale service. Brand awareness can be a critical factor here. Companies may engage in high profile promotional strategies that assist in creating strong brand awareness in the mind of consumers. Therefore, consumer may be influenced to consider one brand over another.

ii. Convenience Products- These are the basic frequently purchased items. There is no need for preplanning or preparation while purchasing these items. They are used in a day-to-day life. Soaps, biscuits, toothpaste, razors etc. are the example of this type of goods. Convenience goods can be further divided into following three parts-

- **Staples Products** – These are the products that are generally consumed on a regular basis not daily basis. Tea, bread coffee and fruits are included in staple products.
- **Impulse Products** – These are the products purchased as a result of spur of the moment decisions to purchase. In this category low cost confectionery, magazines, newspapers are included.
- **Emergency Products** – These goods are purchased when the need is particularly urgent for instance, umbrella during a sudden rainstorm.

Recently most of consumers tended to buy convenience products at retail outlet near their home. However, with increasingly long working hours, and retail outlets such as supermarket, Big Bazaar opening tills late at night some consumers shop near their offices.

iii. Speciality Products- Speciality products have one or more special or unique features. Like shopping products consumers normally buy them infrequently. Consumers seeking speciality products normally devote significant time, and often resources to obtaining the product of their choice. They will not seek out alternative and make comparisons, nor will they accept substitutes. Additionally, they are prepared to pay a premium price for the prestige associated with the particular product or service. A Mercedes is a speciality good because interested buyers will travel far to buy one.

iv. Unsought Products- Unsought products are those that consumer had not considered purchasing until they were made aware of the need or benefits available. This can be further divided into three parts-

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- **To resolve a problem.** For example, following a robbery someone might need to have a pane of glass, door locks or even door replaced. He will look to use a glazier, locksmith or carpenter, but only to deal with the problem, assuming he had not previously been planning to replace the glass, have new locks or a door fitted. The need is result purely of actions beyond the individual's own control.
- **Hard sell techniques.** While many of these techniques are illegal in several countries, they still exist in others. The classic examples of the hard sell tactics of life insurance, especially in the UK in relation to pension provision. Consumer legislation has reduced the impact of hard selling techniques with the imposition of cooling of periods which allow consumers time to consider whether they want to proceeds with the transaction. Additionally, companies have been prosecuted and fined for using such tactics.
- Consumers must also consider that unsought products can satisfy a need.

3. Industrial Product Classification- Industrial products are generally purchased on the basis of the company's overall goals and objectives. These are used as the inputs by manufacturing firms for further processing. Some products are both industrial as well as consumer products. Machinery, components, certain chemicals, supplies and services, etc., are some industrial products. Industrial products can be classified under the following categories- (i) Materials and parts (ii) Capital items and (iii) supplies and business services.

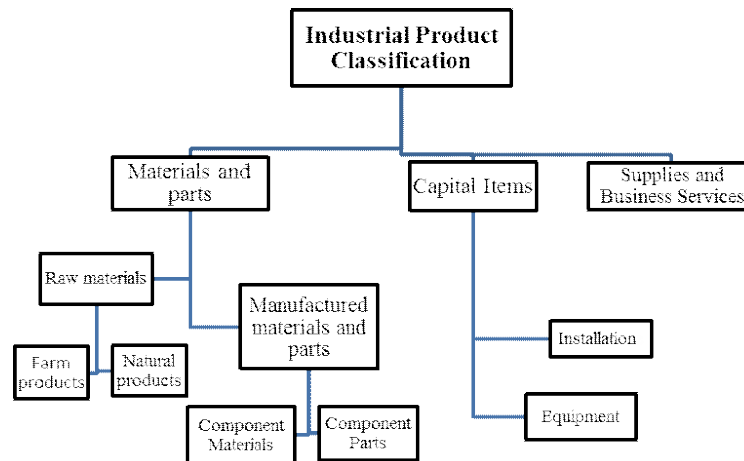


Fig. 7.5 Product Classification of Industrial Products

i. Materials and parts- Materials and parts are goods that enter the manufacture's product completely. They fall into two classes- raw-materials and manufactured materials and parts.

- **Raw materials:** These are the basic materials that contribute to the manufacturing process. These are further divided into two groups- Farms product e.g. wheat, cotton, livestock, fruits and vegetable etc., and natural products e.g. fish, crude petroleum, iron ore.
 - **Farm products-** are supplied by many producers, who turn them over to marketing intermediaries, who provides assembly, grading, storage, transportation and selling services. Their perishable and seasonal nature gives rise to special marketing practices. Their commodity character results in relatively little advertising and promotional activity with some exceptions. At times commodity groups will launch campaigns to promote their product –potatoes, cheese and beef. Some producers brand their product-Dole salads, Mott’s apples and Chiquita bananas.
 - **Natural products-** are limited in supply. They usually have great bulk and low unit value and must be moved from producers to users. Few and larger producers often market them directly to industrial users. Because the users depend on these materials, long time supply contracts are common. The homogeneity of natural materials limits the amount of demand creation activity. Price and delivery reliability are the major factors influencing the selection of suppliers. e.g. fish, crude petroleum, iron ore
- **Manufactured materials and parts-** These are, materials that have processed in one form or another before sold for use in production processes. They may not be readily identifiable to the end user. Lubricants, filters and plastics steel sheet are the examples. Manufactured materials and parts fall into two categories- component materials and component parts
 - **Component Materials-** Component materials are usually fabricated further-pig iron is made into steel, and yarn is woven into cloth. Iron, yarn, cement, and wires are the examples of component materials.
 - **Component Parts-** These are identifiable and distinguishable components that form component parts of a finished product. For example, a major car manufacturer does not produce all the components that go into the finished car. The vast majority are made by approved suppliers which are often themselves well known brand name. A large part of a car engine comprises component parts. When one of these parts fails either the local garage mechanic or the owner buys and replacement part Most manufactures materials and parts are sold directly to industrial users. Price and service are major marketing considerations and branding and advertising tend to be less important.

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ii. Capital Items: Capital items are long lasting goods that facilitates developing or managing the finished product. These are major items of plants and equipment/machinery that are needed to produce the finished products. Include two groups- installed and equipment.

- **Installations:** consist of buildings (factories, offices) and heavy equipment (generators, drill presses, mainframe computers, elevators) installations are major purchases. Companies that need to installation facilities will consider the following-
 - o The long term viability of the equipment. The often significantly high levels of investment mean that the company will seek to maximise its return on investment. As technology develops so the obsolescence lead time often decreases. this can place additional burden on a company whose cash flow may be under pressure.
- **Equipment:** Equipment have shorter life than installations but a longer life than operating supplies. The organisation will probably engage in a widespread search for alternative equipment that it believes will meet its needs both now and in the future. It may be determined by the payment terms, the quality of the equipment, features and performance of the equipment, or the cost of operating the equipment.

iii. Supplies and Business Services -These are suppliers that facilitate operation and production, but are not strictly part of the finished product. Within an office environment they include pens, paper, and pencil photocopying cartridges. Within an operation and production environment they include gloves, safety glasses, uniform etc. Generally, the products are homogeneous and therefore companies may use several suppliers. By using several competing suppliers, they might gain competitive pricing and delivery times.

Business Services: Business services are tangible services that companies and organisations used to achieve their overall business objectives. They include legal, financial, accounting, training catering, market research, printing, management consulting advertising security. For the company, the decision is whether to develop internal services or employ external agencies. Business advisory services are usually purchased on the basis of the supplier's reputation and staff.

Check Your Progress

4. What are heterogenous shopping products?
5. Which type of products are purchased as a result of spur of the moment decision?

7.4 DIFFERENTIATION

In most of the economic conditions the various firms produce different products which are close substitutes of each other. Differentiation may be based upon quality, design, colour, style, shape, trade names, peculiarities of the package, and exclusive patented features. It may also exist with respect to the conditions surrounding its sales.

Meaning of Product Differentiation- Product differentiation involves differentiating it from competitors products as well as own products. Product differentiation is the process of distinguishing a product or service from others. It makes the product more attractive in a particular targeted market.

The concept of differentiation was proposed by Edward Chamberlin in 1933 in the *Theory of Monopolistic Competition*. Chamberlin has defined product differentiation in the following words—A general class of product is differentiated if any significant basis exists for distinguishing the goods (or services) of one seller from those of others. Such basis may be real or fancied, so long it is of any importance whatever to buyers, and leads to a preference for one variety of the product over another differentiation may be based upon certain characteristics of the product itself, such as exclusive patented features, trademarks, trade names peculiarities of the package or container, if any, or singularly in quality, design colour or style. It may also exist with respect to the conditions surrounding its sales. In retail trade these conditions include such factors as the convenience of the seller's location, the general tone or character of his establishment, his way of doing business, his reputation for fair dealing, courtesy, efficiency and all the personal links which attach his customers either to himself or to those employed by him. So far as these and other tangible and intangible factors create consumers' preference for one product to over the other, the products are virtually differentiated.

Thus, differentiation is primarily intended to make consumers distinguish the product of one producer from that of the other producers in the industry. When the consumers are able to distinguish one product from the others they may develop a preference or brand loyalty for one product over the others. Successful product differentiation creates a competitive advantage for the product's seller as customers view these products as being unique or superior. Product differentiation can be as simple as packaging the goods in a creative way or as elaborate as incorporating new functional features. Sometime differentiation does not involve changing the product at all, but creating a new advertising campaign or other sales promotions instead.

Importance of Product Differentiation

The increased competition has divided the demand among different players in the market. This has made it very important for businesses to make their customers understand what different they have to offer.

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Product differentiation determines what sets one product separate from other similar products, and it uses that difference to drive consumer interest. Product differentiation is often subjective, aiming primarily at changing customer viewpoint on one item when compared to another, even if the actual differences are minute or entirely aesthetic. Generally, it demonstrates that the product cannot only does everything the product of competitor also import can, but that there is an additional benefit, such as additional features, higher quality or a lower cost.

Besides making the product survive in the market, product differentiation is important for the following reasons-

1. Product differentiation increases brand loyalty and builds brand equity. Attribute-based differentiation is important for the brand to protect their price from levelling down to the bottom part of the price range.
2. Product differentiation interprets the product feature into benefits.
3. Product differentiation gives a reason to the consumers that why to purchase the brand's product and repeat the purchase.
4. Product differentiation increases the recollect value of the product.
5. It answers the biggest question of the consumers what's in for me? It tells the desirability of consumers

Types of Product Differentiation- Differentiation depends on customer awareness. It's not how brand sees its product it is how the customer recognises the product. There are three types of product differentiation-

- 1. Vertical Product Differentiation:-** Distinction in products that can be evaluated in terms of quality and one can be in the situation to say that one good is better than other.

According to Hotelling Model, if both A and B products are charged the same price to the consumer, then the market share for each one will be positive. The major theory in this all consumers prefer the higher quality product if two distinct products are offered at the same price. A product can differ in many vertical attributes such as its operating speed. What really matters is the relationship between consumers' willingness to pay for improvements in quality and the increase in cost per unit that comes with such improvements. Therefore, the perceived difference in quality is different with different consumer, so it is objective. A green product might be having a lower or zero negative effect on the environment; however, it may turn out to be inferior than other products in other aspects. Hence, it also depends on the way it is advertised and the social pressure a potential consumer is living in. Even one vertical differentiation can be decisive factor in purchasing.

- 2. Horizontal Product Differentiation:-** When products cannot be ordered in an objective way and are different in one or all of its features, then there is horizontal differentiation.

- 3. Simple or Mixed Differentiation:-**In simple or mixed differentiation, it is based on numerous characteristics. A product can be differentiated based on price, style, features, quality, look and location etc.

Factors of Product Differentiation- A product can be differentiated on following basis:

- 1. Performance quality-** Performance quality is the level at which the product's primary features controlled. Continuous improvement in the quality of the product can produce high returns and increased market share. A good quality product always stands out from standard quality products. Detergent manufacturers are the classic example they often improve the quality of their products
- 2. Forms-**Many products can be differentiated in form of the size, shape, or physical structure of a product. soap (Dove, Lux, pears,), paste(Colgate, pepsodent, babool).
- 3. Features-** Most products can be offered with altering quality by the firm. Differentiation to be used to add value to the products and services being offered by making them desirably different to those offered by the competitors. To achieve the business target and make their product more attractive firm add some features such as change colour of the product change ingredients packaging etc., in the product which make their product differentiate from other product which are exist in the market. Additional features show to give additional benefits.
- 4. Conformance quality-** Buyers want to purchase those products which have high conformance quality, the low conformance quality product will disappoint some buyers. Thus, the conformance quality differentiates the product.
- 5. Style-** Style describes the product's look and feel to the buyer. Style has advantage of creating uniqueness that is difficult to copy. On the negative side, strong style does not always mean high performance.
- 6. Durability-** A company might seek improve the overall durability of the product. Durability means life span of the product. It is a measurement of the products' expected operating life under natural or stressful conditions. Buyers will generally pay more for those products which have a reputation for being long lasting. Thus, durability could lead to a competitive advantage over other similar products for example prestige stainless cookware offer customers 5-year guarantee on its product range.
- 7. Brand-** Branding is often used to establish differentiation within the market and brand image can form a strong distinguishing feature for a product which will make it more desirable to potential customers.
- 8. Price-** Price of the product is primary element of marketing. It is the most common factor of product differentiation. Due to price a target group will

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be attracted to brand's product. It separates a quality product from cheap products.

9. Reliability- Some products are known to be more reliable than others. Reliability means, there is a less probability of out of order or failing of the product within the given time period. Reliability is measure of the probability that a product will not out of order or fail within a specified time period.

10. Repairability- Repairability is measure of the easiness of fixing a product when it fails or encounters faults. Some product includes a diagnostic feature that allows service people to correct a problem over the telephone or advise the user how to correct it. Many computer hardware and software companies offer technical support over the phone, or by fax or email.

11. Marketing Efforts- Marketing efforts increased the brand image which is a well-mannered product differentiation. Sales promotion is other marketing efforts and act as differentiation strategy. The promotion not only ensures that more potential customers are aware of what is being offered but also tends to develop the desirability of the product or service within the market place.

12. Design- Design as a powerful marketing tool describes some successes and failures. It is particularly important in making marketing retail services, apparel, packaged goods, and durable equipment. Design is the factor that will frequently give a company its competitive perimeter. Design is the most important features that affect how a product looks and functions in terms of customer requirements. All the qualities we have discussed are design parameters.

13. After Sale Services- If company provide adequate after sale services it sustains the faith of customers in the brand which make them differentiate others. Services as offering add ease of ordering, delivery on time or before time, are many more factors of differentiation.

Advantages of Product Differentiation:- It is a marketing strategy that firm use to differentiate a product from substitute product offered by other firms in the market. A product differentiation strategy may provide a competitive advantage to small business, in a market occupied by larger companies. The differentiation strategy uses by the business must target a segment of the market and deliver the message that the product is positively different from all other similar available products. Besides being imperative for survival in the competitive market, product differentiation has following advantages-

1. Creates value- When a company uses a differentiation strategy that focuses on the cost value of the product versus other similar products on the market, it creates a perceived value among consumers and potential customers. A strategy that focuses on value highlights the cost saving or durability of a product in comparison to other products.

2. **Non-Price Competition**-The product differentiation strategy also allows business to compete in areas other than price. For example, a candy business may differentiate its candy from other brands in terms of taste and quality. A car manufacturer may differentiate its line of cars as an image enhancer or status symbol while other companies focus on cost savings. Small businesses can focus the differentiation strategy on the quality and design of their products and gain a competitive advantage in the market without decreasing their price.
3. **No Perceived Substitute**- A product differentiation strategy that focuses on the quality and design of the product may create the perception that there is no substitute available in the market. Although competitors may have similar product, the differentiation strategy focuses on the quality of design differences that other products don't have. The business gains an advantage in the market, as customers view the product as unique.
4. **Brand Loyalty**- A successful product differentiation strategy creates brand loyalty among customers. The same strategy that gains market share through perceived quality or cost saving may create loyalty from consumers. The company must continue to deliver quality or value to consumers to maintain customer loyalty. In a competitive market, when a product doesn't maintain quality, customers may turn to a competitor.

Disadvantages of Product Differentiation-Disadvantages of product differentiation are as under:

1. **Increase in Price**- Sometimes differentiating a product adds to the production and marketing cost which can be transferred to the end users, which increase the price of product.
2. **Added Pressure on the manufacturers**- Product differentiation adds a substantial amount of pressure on the manufacturers to decide which attribute could turn out to be the USP for the product.
3. **Increased Revenue not Guaranteed**- Product differentiation doesn't guarantee more sales and more revenue as business can even fail in predicting whether the customer would appreciate the USP or not.

7.5 ENTRY CONDITIONS OR BARRIERS TO ENTRY

Activities associated with bringing a product or service to a targeted market during the planning stage, a company will consider the barrier to entry, the cost or marketing, sales and delivery and the expected outcome of entering the market. A central issue in new product development and planning is the market timing/ entry decision. An entry too early may risk pushing an underdeveloped product into market place, with possible negative results; however, a product / technology may sacrifice sales if entry is delayed too long.

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Barriers to entry are factors that prevent or make it difficult for new firms to enter a market. In other words, a barrier to entry is a high cost or other type of barrier that prevent a business or start up from entering a market and competing with other businesses. Barriers to entry can include government regulations, the need for licenses and having to compete with a large corporation as a small business start up. For example, the large company is able to produce a large amount of product efficiently and more cost-effectively than a company with fewer resources. They have lower costs because they are able to purchase material in bulk and they have lower overhead because they are able to produce more under one roof.

Bain explained in his work “Barriers to Entry”, why oligopolists set price above the perfectly competitive price. According to Bain, limit price is set above the competitive price because of the existence of barriers to entry. In his analysis of limit pricing the entry of a firm occurs when a new firm which enters the industry builds a new productive capacity that is not used for production prior to its entry. Further he put forward a concept which he calls “**The Condition of Entry**” which describes a margin by the established firms are able to raise their price above the perfectly-competitive price level persistently without including entry. In symbolic terms, the condition of entry has been written as:

$$E = \frac{P_L - P_C}{P_C} \text{-----(i)}$$

Where E stands for the ‘condition of entry’ (that is the margin by which the established firms can raise price above competitive level)

P_C stands for perfectly competitive price;

P_L stands for limit price;

It should be that price under perfect competitive equals long-run average cost ($P_C = LAC$)

Solving equation (i) above for P_L we have $P_L = P_C (1+E)$

The condition of entry or the extent of profit margin E by which the established firms can charge higher price as compared to the competitive price depends on the presence of various barriers to entry. Bain has emphasised following such barriers to entry which are as under-

1. **Absolute Cost Advantage:-** The established firms enjoy some absolute cost advantage over the potential entrants. It is due to the cost advantage of the established firms that new firms on entry into the industry cannot compete with the already-existing firms.
2. **Product Differentiation:-** The product differentiation gives individual firms a degree of control over the price of their product. The new firms cannot produce the same identical product as produced by the established firms which may have earned a lot of goodwill for their products.
3. **Large Initial capital requirement:-** For setting up new firm, a large amount of initial capital is required which may be difficult for the new firms to mobilise. This acts as a barrier to the entry of firms in an industry.

4. The Minimum Scale for the Efficient or Optimum Production:- Technology requires that a minimum size of plant at which average cost is minimum must be set up for production by a new firm on entry into industry.

5. Economies of Scale:- Economies of scale act as an important barrier to the entry of new firms. Economies of scale are of two types: real and pecuniary economies of scale. Real economies of scale may be technical, managerial or labour economies. Technical economies arise from the use of more efficient and specialised machinery. Managerial economies accrue to the firms due to the spreading of fixed managerial output over a larger quantity of output. Labour economies result from the greater specialisation and division of labour on a larger scale of production which enhance productivity of labour.

On the other hand, pecuniary economies of scale result from the bulk buying of materials at preferential lower prices, lower transport costs which are realised when larger quantity of materials and output are transported. Finally, pecuniary economies also occur due to lower advertising and other selling cost per unit of output when a large quantity of output is produced and sold.

Brand Loyalty:- Developing consumer loyalty through establishing a strong brand image can discourage entry. With a very strong brand image, a new firm would have to spend a lot of money on advertising, which is a sunk cost and a deterrent to entry. Some brands may be so strong that no amount of advertising may be able to remove the incumbent firm.

Knowledge and expertise:- Microsoft and Google are both established technological gaints. Many years of operation in the markets will give them knowledge expertise. This may be difficult to new firms to catch up.

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Check Your Progress

6. Who proposed the concept of differentiation?
7. What is horizontal product differentiation?
8. What is the source of pecuniary economies of scale?

7.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The word used for products are good, commodity, service, article or object.
2. The customer dimension of a product means that consumers consider a product is source of expectations or satisfaction. For consumer, total benefits received from product are important.

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3. At the third level, the marketer prepares an expected product which has some features and conditions that buyers normally expected when they purchase this product.
4. Heterogeneous shopping products are non-standard products where features, benefits and image tends to outweigh the price.
5. Impulse Products are the products purchased as a result of spur of the moment decisions to purchase. In this category low cost confectionery, magazines, newspapers are included.
6. The concept of differentiation was proposed by Edward Chamberlin in 1933 in the *Theory of Monopolistic Competition*.
7. When products cannot be ordered in an objective way and are different in one or all of its features, then there is horizontal differentiation.
8. Pecuniary economies of scale result from the bulk buying of materials at preferential lower prices, lower transport costs which are realised when larger quantity of materials and output are transported.

7.7 SUMMARY

- A product is anything that can be offered by a marketer in the market to satisfy the wants and need of the people in the society.
- Product is as a result of a manufacturing process that is produced for sale and purchased in a large quantity.
- Product has a major role in determining overall success of marketing efforts. It is one of the important elements of marketing mix. A product consists of both good and service.
- In marketing terminology, product means a complete product that can be sold to consumers. That means branding, labeling, colour, services, etc., constitute the product. In its market offering the marketer needs to address five product levels. Each level adds more customer value.
- Marketers have traditionally classified products on the basis of characteristics- durability, tangibility and their use (consumer goods and industrial goods).
- According to durability and tangibility Products can be classified into three groups-Durable Goods, Non-durable Goods and services.
- Consumer goods/products are those items which are used by ultimate consumers or households and they can be used without further commercial and engineering processes.
- Industrial products are used as the inputs by manufacturing firms for further processes on the products, or manufacturing other products. Some products are both industrial as well as consumer products.

- To sell their product in the market producers use product differentiation. Product differentiation is a marketing strategy that business uses to distinguish a product from similar offerings on the market.
- The concept of differentiation was proposed by Edward Chamberlin in 1933 in the *Theory of Monopolistic Competition*.
- In economics and marketing product differentiation is the process of distinguishing a product or service from others to make it more attractive to a particular targeted market.
- A product can be differentiated on the basis of price, feature, quality, quantity, style, durability, reliability, repairability, location, design etc.
- Besides being imperative for survival in the competitive market, product differentiation has some advantages such as brand loyalty, non-price competition, No Perceived Substitute; create value etc.
- Product differentiation has some shortcomings also such as- Added Pressure on the manufacturers increase in price, Increased Revenue no guaranteed.
- Activities associated with bringing a product or service to a targeted market during the planning stage, a company will consider the barrier to entry, the cost or marketing, sales and delivery and the expected outcome of entering the market.
- Barriers to entry are factors that prevent or make it difficult for new firms to enter a market. In Bain analysis of limit pricing the entry of a firm occurs when a new firm which enters the industry builds a new productive capacity that is not used for production prior to its entry.
- “The Condition of Entry” describes a margin by the established firms are able to raise their price above the perfectly-competitive price level persistently without including entry.
- Bain has emphasised barriers to entry are - Knowledge and expertise, Brand loyalty, economies of Scale.

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7.8 KEY WORDS

- **Product:** It is something that is produced for sale and purchased in a large quantity.
- **Unsought products:** It refers to those products that consumer had not considered purchasing until they were made aware of the need or benefits available.
- **Product differentiation:** It is the process of distinguishing a product or service from others.
- **Barrier to entry:** It refers to a high cost or other type of barrier that prevent a business or start up from entering a market and competing with other businesses

7.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

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Short Answer Questions

1. What is the meaning of product?
2. What is product differentiation?
3. Write the characteristics of product.
4. What do you understand by magnitudes of product?
5. What do you mean by augmented product?
6. Define consumer goods.
7. Briefly explain the entry conditions or barriers to entry.

Long Answer Questions

1. Define the product. Write the characteristics of Product.
2. What do you understand by product? What are the essentials for the products?
3. What is product differentiation? Describe the factors of product differentiation.
4. Discuss the different levels of product differentiation.
5. Discuss the advantages and disadvantages of product differentiation.
6. Explain the classification of product.

7.10 FURTHER READINGS

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UNIT 8 ECONOMIES OF SCALE, PROFITABILITY AND INNOVATION

*Economies of Scale,
Profitability and
Innovation*

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Structure

- 8.0 Introduction
- 8.1 Objectives
- 8.2 Meaning of Economies of Scale
 - 8.2.1 Factors of Economies of Scale
 - 8.2.2 Significance of Economies of Large Scale
- 8.3 Types of Economies of Scale
 - 8.3.1 Internal Economies of Scale
 - 8.3.2 External or Pecuniary Economies
- 8.4 Diseconomies of Scale
 - 8.4.1 External Diseconomies
- 8.5 Advantages and Disadvantages of Large Scale Production
- 8.6 Advantages and Disadvantages of Small Scale Production
- 8.7 Profitability
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 - 8.8.2 Stages of Innovation
 - 8.8.3 Measurement of Innovation Activities
- 8.9 Answers to Check Your Progress Questions
- 8.10 Summary
- 8.11 Key Words
- 8.12 Self Assessment Questions and Exercises
- 8.13 Further Readings

8.0 INTRODUCTION

The scale of production refers to the amount of factors used, the quantities of products produced, and the techniques of production adopted by a producer. As production increases with the increase in the quantities of land, labour and capital the scale of production expands.

Production may be carried on a small scale or on a large scale by a firm. When a firm operates by using less capital and small quantities of other factors of production this is known as small scale of production. On the other hand, a firm using more capital and larger quantities of other factors is known as large scale of production. The scale of production of an industry expands with the increase in the number of firms in the industry, or/and with the increase in the size of the firm in it.

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Firms expand its scale of production for the purpose of earning profits and thereby derives many economies of large scale production which may in turn help in lowering the cost of production and increasing productivity efficiency. When the majority of firms enjoy the economies of large scale of production, they are also available to an industry which comprises those firms

The economies of scale is associated with larger firms. Economies of scale apply to a variety of organisational and business situations and at various levels such as business or manufacturing unit, plant or an entire enterprise. The shape of LAC is determined by the economies and diseconomies of scale. Economies of scale arise when average cost start decreasing as output increases. Economies of scale give rise to lower per-unit cost for several reasons. Specialisation, division of labour, integrated technology, larger advertising boost production volume. In this unit, you will learn about the concepts of economies and diseconomies of scale, large scale and small scale production, profitability and innovation.

8.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the meaning and significance of economies of scale
- Discuss the types of economies of scale
- Explain the diseconomies of scale
- Examine the advantages and disadvantages of large and small scale production
- Recall the concept and measurement of profitability
- Discuss the concept and stages of innovation

8.2 MEANING OF ECONOMIES OF SCALE

Economies of Scale refers to the cost advantage experienced by a firm when it increases its level of output. The advantage arises due to the inverse relationship between per-unit fixed cost and the quantity produced by the firm. Economist Adam Smith identified the division of labour and specialization as the two key means to achieving a larger return on production. These two techniques save time and improve the skills—due to this employees perform better and faster and as a result cost per unit decreases or increases productivity. Through such efficiency, time and money could be saved while production levels increased.

The greater the quantity of output produced, the lower the per-unit fixed cost. **Economies of scale** have brought down the unit costs of production and provide the product at lower prices for consumers. Prof. Stigler defines economies of scale as synonyms with returns to scale.

8.2.1 Factors of Economies of Scale

Following are the factors that are responsible for the economies of scale which accrue to the firm and due to which per unit cost falls.

1. Division of Labour:- Specialisation or division of labour are source of increasing productivity. In the process of division of labour entire production process is broken into number of simpler operation and each one is assigned according to their specialisation due to that operation can increase production output and reduce the cost of production. The division of labour depends on the size of the plant. A small plant will be having less scope for division of labour. Larger the size, greater will be the scope of division of labour and hence greater productivity which means gains from the larger plants.

When the scale of operations is increased and the amount of labour and other factors becomes larger, introduction of greater degree of division of labour or specialisation become possible and as result the long-run cost per unit declines. Generally, a worker who has to perform one task in the production process of a commodity can do it more efficiently than one who has to perform several tasks in it. Besides under division a labour, time of workers is also saved as they do not have to move from one machine to another.

2. Use of Technically Efficient Machine:- As the firm increases its scale of operations, it becomes possible to use more specialised and technically more efficient form of all factors especially capital equipment and machinery. For producing higher levels of output, technically more efficient machinery is generally available which when employed to produce larger output yields a lower cost per unit of output.

3. Financial Economies:- There are financial reasons for reduction in unit cost of production as the size of the firm increases. Due to bulk purchases large firms generally get large quantity discount in buying raw materials and intermediate goods. Similarly large firms can borrow funds from the commercial bank at relatively lower rate of interest than smaller firms. Further, large firms can sell bonds and stocks in the capital market at more favourable terms. This reduces the cost of raising funds required for business. Large firms are able to take advantage of economies that result from spreading out of advertisement and other promotional costs.

4. Indivisibility and Economies of Scale:- There are certain indivisibility associated with some functional areas of the firm which favour large size for the sake of efficiency. Some economists observe economies of scale arising from the imperfect divisibility of factors. They argue that most of the factors lumpy. That is they are available in large indivisibility units which can therefore yield lower cost of production when they are used to produce a large output. Thus as output increases, the indivisible factors which were being used below capacity can be utilised to their full capacity there by reducing cost such

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indivisibility arise in the case of labour, machine and research, for example research and design expenses will be same whether a firm sells one unit or ten units. Further they reveal that if the factors were perfectly divisible, then suitable adjustment in the factors could be made. According to them, if the factors were perfectly divisible the small-scale production would be as good and efficient as the large scale production and the economies of scale would be non-existent.

- 5. Economies of Scope:-** Economies of scope refer to the reduction in costs that occur when a firm produces two more commodities together rather than a single one. For example, when a firm extends its products line by utilising its waste product to produce a useful commodity for which there is demand in the market. Before this the firm may be disposing of its waste product. Besides a firm may have excess capacity that can be utilised to produce other productions with little or no increase in capital cost. This lowers the cost per unit of output of a firm.

8.2.2 Significance of Economies of Large Scale

- **Nature of the Industry-**The foremost significance of economies of scale is that it plays an important role in determining the nature of the industry i.e. increasing cost industry, constant cost industry or decreasing cost industry.
- **Analysis of Cost of Production-** When an industry expands in response to an increase in demand for its products, it experiences some external economies as well as some external diseconomies. The external economies tend to reduce the costs of production and thereby causing an upward shift in the long period average cost curve, whereas the external diseconomies tend to raise the costs and thereby causing an upward shift in the long period average cost curve. If external diseconomies outweigh the external economies, that is, when there are net external diseconomies, the industry would be an Increasing cost industry

8.3 TYPES OF ECONOMIES OF SCALE

It is a common experience of every producer that costs can be reduced by increased production. In the process of expansion, the producer may benefit from the emergence of economies of scale. Marshall has classified economies of scale into two parts as under:

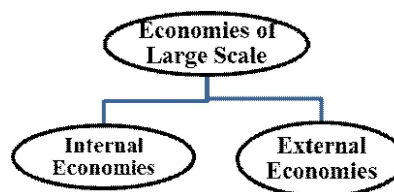


Fig. 8.1 Division of Economies of Large Scale

8.3.1 Internal Economies of Scale

When a company reduces costs and increases production, internal economies of scale have been achieved. Basically, internal economies are those which arise from the expansion of the plant-size of the firm. The internal economies are internal in the sense that economies are internalised to the expanding firms- not available to non-expanding firms. For example, one firm will enjoy the advantage of good management; the other may have the advantage of specialisation in the techniques of production and so on.

According to Cairncross “*Internal economies are those which are open to a single factory, or a single firm independently of the action of other firms. These result from an increase in the scale of output of a firm and cannot be achieved unless output increases.*”

Types of Internal Economies:- Internal economies can be classified under the following categories:

1. Economies in Production
2. Economies in Marketing
3. Economies in Transport and Storage
4. Managerial Economies
5. Economies of Welfare
6. Economies of Research

1. Economies in Production:- The economies in production arise from two sources: advantage of division of labour and specialisation (ii) Technological advantages.

i. Advantage of Division of Labour and Specialisation:- When a firm expands scale of production, more and more workers of varying skills and qualifications are employed. With the employment of larger number of workers, it becomes increasingly possible to employ labour with specialised qualification and skill and to place them in the process of production where they are best suited this is known as division of labour. Division of labour leads to professional specialisation. It increases the efficiency. Besides, specialised workers develop more efficient tools and techniques and gain speed of work. These advantages of division of labour improve productivity of labour –per unit of cost and time. But there is always a limit to which division of labour is possible. This limit is given technology. Beyond this limit the advantage of division of labour may not exist. Further expansion of the firm may therefore, lead to decreasing return to scale.

ii. Technological Advantages:- Technical advantages are those which arise due to the use of better machines and techniques of production. The modern technology is highly specialised. The advanced technology

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makes it possible to conceive the whole process of production of a commodity in one composite unit of production. For example- production of cloth in a textile mill may comprise such plants as spinning, weaving, printing and pressing and packing etc. Under small scale of planned production, the firm may not find it economical to have all the plants. And hence, it would not be in a position to have full advantage of a composite technology. But when the scale of production expands and firms hire more of capital and labour, their total output increases more than proportionate increase in inputs till the optimum size of the firm is reached. Beyond that level of output, the technical advantages diminish and lead to diminishing returns to scale.

- 2. Economies in marketing:-**The economies in the marketing arise from the large scale purchase of raw materials and other material input and large scale selling of firm's own product. As to economies in purchase of input, the large size firms normally make bulk purchases of their inputs. The large scale purchases entitle the firm for higher discount which are not available in small purchases. As such, the growing firms gain economies on the cost of their purchases of material inputs.

The economies in marketing firm's own product are associated with economies in advertisement cost; economies in large scale distribution through wholesalers. With the expansion of the firm, the total production increases. But the expenditure on advertisement of the product does not increase proportionately. Similarly selling through wholesale dealers reduces the cost on distribution of firm's production. The firm also gain on large scale distribution through better utilisation of sales force distribution of samples etc.

- 3. Economies in Transport and Storage:-** Economies in transport and storage costs arise from fuller utilisation of transport and storage facilities. Transport costs are incurred both of production and sale sides. Similarly, storage costs are incurred on both raw materials and finished goods. The large size firm may acquire their own means of transport and they can thereby reduce the cost of transportation. Beside own transport facility prevents the delays in transporting goods. Some large scale firms have their own railway track from the nearest railway point to the factory, and thereby they reduce cost of transporting goods in and out. For example, Bombay Port Trust has its own railway track. Similarly, firms can create their own godowns in the various centres of product distribution and can save on cost of storage.

- 4. Managerial Economies:-** Managerial economies refer to production in managerial costs and proper management of large scale firm. Managerial economies arise from specialisation of management and division of managerial functions. For a large size firm, it becomes possible for the management to divide itself into specialised departments under specialised personnel, such as sales manager, personnel manager, production manager, HRD managers,

and labour officers. This increase the efficiency of management at all levels because of decentralisation of decision-making. Large scale firms have the opportunity to use advanced techniques of communication and their own transport. All these lead to quick decision making, help in saving the valuable time of the management. And thereby improve the managerial efficiency.

- 5. Economies of Welfare-** All firms have provided welfare facilities to their workers. But a large firm, with its large resources, can provide better working conditions in and outside of the factory. It may run subsidised canteens, provide crèches for the infant of women workers and recreation room for the workers with in the factory premises. It may also provide cheap houses, educational and medical facilities for the families of workers and recreational club outside the factory. Though the expenses on these facilities are very heavy yet they tend to increase the productive efficiency of the workers which helps in rising production and reducing cost.
- 6. Economies of research-** A large firm possesses larger resources than a small firm and can establish its own research laboratory and employ trained research workers. When they invent new production techniques, the latter become the property of the firm which utilise them for increasing its output and reducing cost.

8.3.2 External or Pecuniary Economies

Besides internal economies Marshall introduced the concept of External economies which play an important role in increasing returns and decreasing cost. Cost of the firm depends not only on its own output level but also on the output level of the industry as a whole. External economies arise outside of the firm due to the improvement of the environment in which the firm operate. These are available to the firm not because its size or efficiency but because of expansion of the industry as whole. External economies accrue to the individual firms if the increase in the output of industry lowers the cost curve of each firm in the industry. some example of external economies are:

- Economies which result from development of mechanical appliances, division of labours,
- Improved transport and communication in the region, improved methods or machinery which are accessible to the whole industry when it expands.
- Economies which result from the growth of correlated branches, encourage the development of hereditary skill, growth of subsidiary trades supplying it with implements and machinery and the economic use of expensive machinery.

We explain below some of important external economies which accrue to the firms and reduce their cost of production

- 1. Economies of Localisation:-** When an industry develops in a particular area or region, it brings with it all the advantages of localisation. Firm situated in that area may derive such benefits as:

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- availability of skilled manpower
- transportation and communication facilities
- banking, insurance and marketing facilities
- better and adequate source of energy;

2. Economies of Ancillarisation:- Ancillary Industry may develop in and around industrial townships manufacturing inputs such as parts of machinery, nuts and bolts, raw material etc., which are needed by the major industries. Since ancillary units specialised in production of specific items, they enjoy internal economies and are able to produce these input relatively at lower cost. Major industries enjoy the benefit of lower input prices, adequate and certain supplies of specified quality of input from these industries. Some specialised firm come into existence, which process the waste product of the industry into useful products.

3. Development of Skilled Labour:- When an industry expands in an area, the labour in that area, the labour in that area is well accustomed to do the various productive process and learns a good deal from the experience. Due to this with the growth of an industry a region a pool of trained labour equipped with traditional skill is developed as a result productivity increase and cost reduce of the firm in the industry.

4. Technological External Economies When an individual firm expands its scale, it may use more specialised and productive machinery and to introduce greater degree of division of labour, due to this productivity of firm improved. Similarly, when whole industry expands it discovers new technical knowledge and use improved and better machinery this increase the productivity of industry and reduce the cost of production.

5. Economies of Disintegration:- The industry can benefited from the economies of specialisation with such firm specialising in different processes necessary for producing a product. The objective is to provide synergy to the operations of the industry as a whole. Under the internal economies we stated that the firm could divide its production process into sub process to enjoy the benefits of vision of work and specialisation. Against this as an external economy in such firms can specialise in one sub process. As a result of specialisation industry on the whole benefits

4. Cheaper Materials and Capital Equipment:- External economies arise to large size firms from the discounts available to them due to:

- large scale purchase of raw-material. With the expansion of firms, these firms require large amount of raw material and other equipment. They purchase these in bulk at discounted and reasonable price.
- large- scale acquisition of external finance at lower rate of interest, particularly from the commercial banks;

- lower wage rate if a large scale firm uses its monopony power in certain kinds of specialised labour market.
- lower advertising rate charged by the advertisement media for large scale advertising;
- Concessional rates charged by the transport companies on bulk transport of goods. The development of transportation and marketing facilities which generally reduce cost of the firms
- Electricity board supplies adequate power to the firm, often at concessional rates

All these facilities lower the unit cost of production of all the firms in the industry. The economies of scale discussed above is based on experience of the large scale firm, however, may not be necessarily available to all large scale firms.

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8.4 DISECONOMIES OF SCALE

Diseconomies of scale are disadvantages that arise due to expansion of production scale and lead to rise in the cost of production. Like economies, diseconomies may be internal and external. Internal diseconomies are those demerits which are internal to a firm and burden the firm when in over expands its scale of production and they arise within the firm.

Internal diseconomies: - Internal diseconomies are in fact the limit to large scale production which are discussed as below-

1. Diseconomies start to appear first at the management level. As the number of levels of managerial hierarchies increases information flow tends to get distorted. With the fast expansion of scale of operation, personal contacts and communication between owners and managers, managers and labours get rapidly reduced. This adversely affects the implementation of decision in the right perspective.
 - i. As the span of control increases, supervision and control over subordinate's activities becomes difficult; communication between supervisor and subrogates is slow; and there is excessive distance between lowest and the highest level in the firm.
 - ii. It becomes increasingly difficult and complex for the top management to coordinate the diversified operations of the firm.
 - iii. Top management gets gradually over loaded with decision with decisions only it can take. The Top management may not give enough time and attend to any such problem as and when scale expands.
 - iv. Beyond a point the management loses personal touch with its workers. Coordination between workers and management disappears due to this workers do not work efficiently, wastages arise, decision-making becomes difficult as a result production costs increase.

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- v. Expansion, diversification of operation to generate additional profits remains their top priority. This causes a distance between management cadre and operative or technical cadre leading to reduce confidence due to boredom and monotony from performing repetitive tasks, trade union pressures and deteriorating working conditions.

This is clear that in too large a scale of operation control and coordination become very difficult for top management and lack of rapid decision, inefficiency and wastage arises in the operation

2. The entrepreneur is a fixed and indivisible factor of production. With the expansion of the scale, the entrepreneur cannot be increased further, increase in the scale of operations by increasing other inputs cause increase in the cost per unit of output.
3. In a large scale of industry, demand for labours increases. Overcrowding of labour leading to loss of control on labour productivity. Increase in the number of workers makes labour unions and leading strike and lockouts and rise in the cost of production.
4. As firm expands it faces the problem of raw material which is not available in adequate quantity in the market due to scarcity. the demand for the product may also fall in long period due to change in fashion and change in taste of people.

8.4.1 External Diseconomies

The expansion of an industry is also likely to generate external diseconomies and raise cost curve of the firm. External diseconomies are those disadvantages which are generated outside the firm. The expansion of industry will definitely raise the price of those raw materials and capital goods which are scarce.

1. When the industry expands there is keen competition among the firms for the limited factors of production and other inputs as a result the input process shoot up. This causes the cost of production of rise.
2. The discounts and concessions that are available on bulk purchase of inputs and concessional finance come to an end with the expansion of the firm, particularly when all the firms of the industry are expanding,
3. When many firms are located in a particular region and they are expanding their operations, there is too much pressure on the infrastructure- transport, power, labour, raw material and equipment etc. Bottlenecks and delays become frequent with increased traffic on limited roadways, frequent poser cuts and water shortage. All such diseconomies tend to rise per unit cost.
4. Industries dependent on using non-renewable sources face diseconomies when they extort these scare resources beyond a limit. Mining oil drilling are some such examples.

5. Due to excessive use of fixed factors, the laws of diminishing returns to scale come into force this increase the cost of production. Similarly, excessive use of cultivable land turns it into a barren land.

Check Your Progress

1. What are the two key means to achieving a large return on production as per economist Adam Smith?
2. Define economies of scale.
3. List the two sources for economies in production.

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8.5 ADVANTAGES AND DISADVANTAGES OF LARGE SCALE PRODUCTION

In this section, we will discuss the advantages and disadvantages of large scale production.

Advantages of large scale production

Economies arise due to large scale production. The following are the advantages of large scale production-

- I. The expansion of the size of a particular firm become possible in large production
- II. Division of labour is possible due to the large scale production. It increases per worker output and decrease the cost of unit.
- III. With the development of large scale production many more small industries, arises which use its by-products or supply inputs to it and some ancillary industries also arise which produce raw- material or intermediate goods for large industries.
- IV. The large scale industries can reduce the cost of production by producing more goods and services.
- V. All the advantages of the use of machinery are available with the large scale production.
- VI. The cost of management is reduced with an increase in the size of the firm in an industry.
- VII. Large scale industries can acquire credit facilities timely at cheaper rate. Due to reputation in the market, bank and other financial institutions willingly advance loans to these enterprises at a very low rate of interest.
- VIII. A big concern can afford to spend large amount of money on advertisement and salesmanship. The amount of money spend on advertisement per unit comes to a low when production is undertaken on very large scale.

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IX. The large scale firms spend more amount on research and experiments which ultimately lead to the discover of new machines and cheaper technique of production and reduce the cost and increase the profit of the firms.

Disadvantages of large scale production- The following are the disadvantages of large scale production-

- I. The large scale production gives rise to class struggle, the struggle between the labourers and the capitalists. As scale increase the profit also increases and labours demand for more money while entrepreneur do not want to give them, they want more profit.
- II. In the large scale production control and coordination on entire unit is not possible.
- III. Due to inefficient and inadequate supervision, the cost of production goes up.
- IV. The large scale production results in the localisation of industries. When many industries setup at one place many labours start to live at nearest place of company and it turns to over crowding and converting into slum near the factory region. Pollution, bad morals and dirty habits like drinking and gambling spread very easily.
- V. Sometimes large production cannot estimate demand of commodity properly. due to excess production at last prices fall and depression sets in.
- VI. In the large scale, production is done with the help of large, modern and sophisticated machines. It creates the problems of unemployment.
- VII. Due to large scale of production all the wealth and incomes of the country get concentrated in the pocket of big houses and producers. On account of large production, the distribution of wealth become unequal and the rich become richer and the poor become poorer.
- VIII. The large scale of production increases the possibility of wars

8.6 ADVANTAGES AND DISADVANTAGES OF SMALL SCALE PRODUCTION

Small scale production means the production of a commodity in small size firm. It requires less amount of capital. The nature of Small scale production is labour intensive. it use very simple machines in production . Therefore, the investment in machinery is low. Small scale production is major contributor of industrial output, exports, employment generation and national income in many developing countries. Like large scale production small scale production has also some advantages and disadvantages.

Advantages of Small Scale Production- The following are the advantages of small scale production-

- i. Small scale production is more labour intensive. Small scale production is very useful for those countries that are facing the problem of unemployment and have large workforce. It helps these country by creating more employment opportunities.
- ii. Where there is shortage of capital the small scale industries are very useful for the development of industries because the small scale production can be started with small capital.
- iii. In the small scale production, entrepreneur himself supervises the business, and achieves the goal of profit maximisation.
- iv. A direct relationship exists between the employer and the workers, because less workers are employed. Due to close relationship employer can look after well being of employees. And in a small scale production the work goes on smoothly without any disputes between the two parties.
- v. The management of small scale production is very easy and economic.
- vi. The small scale producers generally cater to the local demand. In other words they fulfil local demand. That's why they remain in touch with their customers.
- vii. The small scale production secures all kinds of external economies which are available to large units such as better transport, electricity and communication facilities; banking and insurance services; technical workers etc.
- viii. In the small scale production, there are no dangers of monopolistic institutions. There are less possibilities of strike and lockouts .
- ix. In the small scale production supply can be adjusted accordingly, whenever demand changes.

Disadvantages of Small Scale Production- Small scale production suffers from following disadvantages-

- i. A small scale entrepreneur faces great difficulty in securing the required finance. Investors may not be interested to invest in small firms. Banks also does not want to fund small scale units because of high rates of evasion and failure.
- ii. Due to lack of funds small units in small scale units division of labour cannot be implemented.
- iii. Small scale producers run their business with limited capital. They do not have sufficient funds to invest in latest technology and in modern machinery. Technology used by many small scale productions is outdated.
- iv. Small scale producers have low Innovation Capacity. They cannot afford large amount on research and development. Due to less innovation capacity they are not able to come out with new product according to the requirements of the customers.

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- v. In small scale production overhead cost per unit is very high.
- vi. Small scale units do not have adequate funds to pay high level of salary and to provide other benefits or perks to the specialised and talented. Therefore, they are not able to attract talented employees.
- vii. Small scale units are not able to compete with large scale units in terms of costs or quality because Small scale units used outdated technology.
- viii. Small scale units do not have sufficient funds to spend on sales promotion and advertising they are unable to effectively market their products and to attract customers.
- ix. Limited resources and skills and lack of strong brand hinder further expansion or diversification of the small scale production.

Causes of the Survival of Small Production-No doubt, with the development of the large scale industries, the small scale industries have lost their old significance, but the small scale producers still survive due the following reasons-

1. **Perishable Commodities** cannot be stored and transported to distant markets. Therefore, the production of these goods at small scale is profitable.
2. Some goods are very heavy and thus costly to transport. such goods are produced at small level to meet the local demand
3. The co-operative movement also helps the small scale producers. People with the small capital from co-operative societies and by polling up their resources start their own business.
4. The production and availability of cheap electricity has given incentive to the growth of small scale industries, because with the availability of cheap power, the small producers can make use of machinery.
5. In many countries as in India the government has also contributed for the survival of small scale industries. Special facilities are given by the government to the small producers. It is a great incentive that helps much in the development of cottage and small scale industries.
6. Sometimes the very existence of the large scale production creates work for the small scale producer. E.g. repairing Motor car, trucks, and cycles small industries act as subsidiary industry to a large scale industry. As such they have ample chances to survive.
7. When there is shortage of capital and some persons do not want to undergo any service, development of small scale industries comes to their rescue. Because of the small capital requirements, the small business he save flourished in the capital-scarce countries.
8. If the production of certain commodities is dependent upon the nature of its demand, especially if the demand is limited, local and fluctuating; it is not worthwhile to have a large scale production. Thus field is open for the small producers.

9. The joint family system has gone a long along way for the survival of the handicraft and the small scale production. In India many small scale industries lend industries have come into existence because all the members of the family lend their hands in work to maintain the family independence.

Check Your Progress

4. What is the division of labour beneficial to large scale production?
5. How does employer-worker relationship affect small scale production?
6. Under which scale is the production of perishable commodities profitable?

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8.7 PROFITABILITY

Profitability is a simple and widely used index of assessing business efficiency of a firm. The term profitability may be defined as the quality of being profitable, yielding profit or advantage. Often, we find inter-industries and inter-firm difference in profitability. Profitability is a measurement of efficiency and ultimately success of failure of business. Profitability further defines as return of the investment.

Profit is usually interpreted as the difference between the total revenue accruing from sales and total expenses involved in making or buying of a commodity/product. Profitability may also be expressed as the proportion by which the price per unit sold would be greater than the average or marginal cost. This is the rate on turnover which is called price-cost margin. The term of profitability is not free from vagueness. The major difficulty lies with the definition of the term profit itself. There are differences in the viewpoint of economists and accountants on this aspect. Among the economists also, there is no conformity about definition and conditions for occurrence of profit. Some economists describe profit as non-functional income. They treated profit as an implicit return to any services or resources supplied by owner himself. For his personal services in his own business an entrepreneur is supposed to get implicit wage, for the money he puts in business he gets implicit interest and his own property used in his own business he gets implicit rent. The accountant put all such payments under the rubric of profit but economists treat them as element of cost in business.

Another group of economists led by F.B Hawley treated profit as a reward for risk and responsibilities that the entrepreneur puts himself to. There may be varieties of risks; some associated with holding of the assets, some with stocks of materials and finished commodities, some with the technological changes, some with business cycle, and other one with price level and marketing etc. Risk may be insurable or uninsurable. The risks that can be anticipated in advance they are insurable, but in general, there will be majority of risks in business which cannot be insured so the entrepreneur is justified a reward in the form of profit to face them.

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According to another group of economist profit is a result of future uncertainties. According to Frank Knight links the occurrence of profit as a reward for such uncertainties rather than the risk which are unknown in advance and therefore are insurable. In his dynamic theory of profit J.B Clark propounded similar view on profit. Schumpeter reveals that profit is the reward to entrepreneur for the services of innovation.

The strongest case for occurrence of profit is attributed to the monopoly power. Uneven size distribution of the firms in industries, economies of scale, patent rights, advertising, barriers to entry, product diversification, licensing etc., together make market structure of the industry imperfect as a result of which some firms having greater share in the industry will be able to control price and market supply in such a way that they get maximum surplus. Lerner index reveal that monopoly is extreme case of monopoly power where we expect maximum profit. The concentrated market having either homogeneous or differentiated oligopolistic structure would come in the next order as far as monopoly power concerned and so would be having considerable impact on occurrence of surplus profit.

Whatever be the source of profit whether the implicit earning of the entrepreneur or reward for risk, uncertainty and innovation or return due to monopoly power of the firm, it is essential from the business point of view. A business firm is an organisation designed to make profit. Profit is the primary measure of its success. A business firm need profit for survival, stability, satisfaction and growth even when it tries to achieve a goal other than profit maximisation.

8.7.1 Measurement of Profitability

Generally profitability can be measured by following formula-

$$\pi = R - C$$

Where π is profit, R is revenue, and C is the total cost of production. π is gross or net it depend on what is included in C. Total cost can be express as-

$$C = gK + D$$

where K is capital stock in value terms, g is a rate of return covering depreciation, interest and risk premium appropriate to the industry. D is the direct cost such as labour cost, material cost, fuel and power cost, selling cost and managerial remuneration etc. Total Revenue(R) is the income that accrues to the firm. It have three components- value of products and by products, changes in the value of stocks of finished goods, and other income such as work done for consumer, equipment sold by the firm. By and large there will not be any ambiguity in measurement of R except some difficulty in valuation of inventories of goods and a conceptual problem related to whether equipment sold should be treated as income or recovery of capital invested in it. The later interpretation makes no sense so it should normally be excluded from computation of profit.

The cost side of the profit above equation is very much troublesome. Let examine direct cost first- it includes all items of costs- implicit cost, except depreciation and imputed interest which are announced by gK . Accountant will ignore implicit cost items but economists will include them while computing D . For the large firms where there is complete separation between management and ownership, there will no implicit cost of entrepreneurship but in small units entrepreneurs do perform management functions and employ their self owned resources in business for which they get payment in implicit form. If such payments are included in the direct cost (D) they are likely to cause a bias in it as entrepreneurs may have fixed high cost for their services.

Direct cost (D) includes selling and advertisement expenditures also. There is however some doubt their inclusion as costs. Through such costs particularly by advertisement expenditure, a stock of goodwill is created in the market for the products of the firm. Goodwill is intangible asset and any expenditure to increase the stock of goodwill should therefore be interpreted as capital expenditure. On this account it is argued that advertisement and selling expenses should not be included in direct cost. Only the depreciation, imputed interest and risk premium on advertisement capital expenditure should be included in direct cost. However, in practice advertisement and selling expenses are treated as annual cost and therefore they included in the cost for profit measurement. The other elements of cost gK , which is defined as capital cost showing annual depreciation, imputed interest and risk premium is very much difficult measured precisely. There are difficulties in measuring the stock of capital K and the rate g . There is no satisfactory measure for K . It may be expressed historical cost as accountants generally do but economists argue for replacement cost as a true measure for K . The replacement cost is again difficult to be assessed. What will be the current costs of assets in use is difficult to find as there will not be second hand market in which their opportunity cost may be evaluated. Again whether gross value of K is to be taken into account or the net value is also a disputed issue. Net values makes sense from accounting side but is common practice to use gross value of k . The rate of depreciation which is a major component of g has no unique value, it depends on the method of depreciation accounting chosen by the firm such as a straight line depreciation method, declining balance method.

Subjective judgement plays dominant role in assessing the degree of riskiness of a business. On the whole the estimation of capital cost component of total cost is difficult and sometimes quite arbitrary, which will affect profit calculation very much. The total amount of profit, whatever be its definition and consequently measuring procedures, is of little value unless it can be related to the scale of business from which it is generated. The profitability of business is generally defined in terms of a profit rate which expresses total profit percentage of either total assets or sales or anything like that total assets (K as denoted above) can be expressed in gross or net terms, either at historical or replacement cost. One may use total value of fixed assets instead of total assets to compute the profit rate.

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Similarly, one may take total sales in gross terms or net of particular input costs such as selling expenses. What should be used in the denominator to compute profit rate depends upon the objective or standpoint from which it is being measured. To compute profit rate sales or total cost of production should be used as the denominator. Both sales and total cost of production are annual flows. The profit rates obtained by using them as denominator will give us a short-term perspective of profitability. On the other hand, the return on total assets will give us a long-term perspective of profitability. For convenience we may express the most common measures of profit rates as under-

Return on Capital (Long run profitability)

$$\text{Gross } \frac{R-D}{K} \quad \text{Net } \frac{R-C}{K}$$

Price-cost margin (Short term profitability)

$$\text{Gross } \frac{R-D}{R} \quad \text{Net } \frac{R-C}{R}$$

Where

R = Total revenue

D = Total direct cost

C = Total cost of production as defined above

K = Total Assets

If there is corporate tax on profits, the above rates can be modified accordingly. Says the net profitability with respect to assets (K) would now be

$(1 - t) \frac{R-C}{K}$ and with respect to sales $(1 - t) \frac{R-C}{R}$ where t is the corporate tax.

The profit rates thus computed need some standard for comparison. The standard may be 'inter temporal' i.e. relates to a profit ratio achieved at a different point of time, or 'cross sectional' i.e. the profit ratio achieved by some firm or group of firms at the same of time. The standard is to be chosen very carefully as it has to match with the conditions of the firm or industry whose profitability is to be compared with it. The concept of profit is very much ambiguous as result of which there are problems in its measurement. Such problems will have their impact on measurement of the profitability of the firm.

8.7.2 Determinants of Profitability

Profitability is determined by following determinants-

- 1. Size of firm:-** According to one group of economists led by Baumol, the market power conferred by large firm size and increased money capital which put the firm in a higher level of imperfectly competing capital groups will tend to increase the firm's profit rates. According to them large firms

area capable of encashing the investment opportunities which bring larger profit rate, but smaller firms cannot take them because of financial difficulties. When the size of firm measured through its share provides better product differentiation opportunities to it, allow the firm to operate in the oligopolistic bargaining power and other activities and provide scope to gain the advantage from pecuniary benefits, advertisement and economies of scale or marketing. The net result of all these as one expects is to show greater profitability for larger firms.

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2. **The market structure:-** The market structure that is postulated as a major determinant of profitability is multi-dimensional concept. Its primary elements that have considerable theoretical and empirical implication for profitability at firm as well as industry level are concentration scale in relation to industry size and the product differentiation. Let us examine the various combinations of high and low values of these structural variables in order to identify the market conditions most favourable for profitability-

A. Low Scale Low Concentration and Low Product Differentiation:-

By low mean zero of insignificant magnitude of the structural variables. The size of individual firm is very small having no influence on market output and prices of output. There is no concentration and product is homogeneous. Obviously, this is the perfect competitive situation and hence profit will be either zero or very low depending on long run and short run equilibrium situation.

B. Low Scale Low Concentration and High Product

Differentiation:-In Chamberlin's sense, low scale low concentration and high product differentiation reflect in monopolistic competitive market situation. There will be some product differentiation in the industry. In monopolistic market situation individual firms will be able to earn profit in short-run due to price variation or non-price competition.

C. High Scale High Concentration and Low Product

Differentiation:-This is the situation of oligopoly. In oligopoly market situation few large firms will have control over the industry. through their collusive tactics they will be able to keep the price cost margin at a high level, so we generally expect high profitability under this situation.

D. High Scale High Concentration and High Product

Differentiation:- This is the situation of differentiated oligopolistic competitive market. In this market situation the product of few large competing firms having effective market power are not identical but close substitutes for each other. The firm will be competing with each other on the basis of their market and product diversification policies. They will attempt to find profitable areas for action. Through advertisement they may create goodwill for their product which would be a powerful deterrent to entry. The absolute advantages available to

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such firms due to large size and the economies of scale of being established together with economies of scope further reinforce their market power as compared to the potential new entrants. Such market situation on profitability is seen to be positive. Monopoly is the extreme limit of this type of market structure where only one firm constitutes the industry having hundred percent concentration with or without product variations and therefore, maximum market power and scope for profitability.

The other combination of scale, concentration and differentiation attributes of market are ruled out on a priori ground. This is because concentration and scale are complementary attributes. Existence of either one of them without the other is unlikely to be seen in practice.

Above analysis suggests that for a meaningful study of the relationship between market structure and profitability, all the constituents of market structure are to be taken into account rather than any one of them. Concentration and product differentiation are relevant factors for accounting inter-industry or inter-firm difference in profitability while *scale factor*, by and large act as a powerful barrier to entry making the existing firms more profitable than new entrants.

3. Growth of the Firm:- Apart from the market structure there are a few other determinants of profitability. Among such determinants growth of the firm or industry is an important one. There are several theories which link growth of the firm and its profitability. The relationship between profitability and growth of the firm has been a cornerstone in all growth theories of the firm. Growth of the firm and profitability is two-way relationships: on the one hand, growth depends on profitability; on the other growth above a certain rate adversely affects profitability. Higher profitability assures adequate finance for accelerated growth but there are costs involved in growth which increase as the rate of growth increases thereby reducing profitability. The cost of growth mainly arises from the expenses of obtaining a larger share of existing markets and of increasing rate of diversification for growth.

There are other factors such as capital-intensity, advertisement intensity, age of the firm, business cycle, trend, availability of critical raw materials, industrial peace which may be relevant for profitability. However, theoretical basis for their relevance is not yet fully developed. Their choice as determinants of profitability is governed, by and large through heuristic considerations rather than systematic theoretical reasons and deductions.

On the whole profitability is a highly sensitive economic variable which is affected by host factors operating through a variety of ways. Some of them are the product price and quantities, capital stock, market share and growth rate of the firm. All such factors eventually make the profitability of the firm to vary.

8.8 INNOVATION

J.A. Schumpeter found innovation as the outstanding fact in the economic history of capitalistic society. Innovation is not confined to such a society only. It is a common feature in almost every economic system whether capitalistic or socialistic or something else. Science and technology are the instruments for rapid economic progress of a society. They become operative through innovation.

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8.8.1 The Process of Innovation: Concept and Relationship

Innovation is a multi-dimensional concept. There are three terms are used in the process of innovation.

- A. Invention
- B. Innovation and
- C. Imitation.

1. Invention: The most important concept of innovation is *invention*. An invention is the creation of new technology. By *technology* we mean any tool or technique, any product process, any physical equipment or method of doing or making, by which human capability is extended. It is an intellectual act which involves a perception of a new image, of a new connection between old conditions, or of a new area for action. All invention small or big are made for some practical uses. The process of adopting an invention in a practical use is called innovation. Innovation is a multi-dimensional concept.

2. Innovation: It is a very broad and multi dimensional concept.

I. Product Innovation: - If the existing product line is changed by a firm, i.e. it introduces a new product with or without displacement of the old ones, then it is defined as product innovation.

II. Process Innovation:-If new method is initiated to produce existing products then it is called process-innovation. Both of these are the element of technological Innovation.

III. Market Innovation:- When a firm makes changes in its marketing strategy it is defined as market-innovation. The entrepreneur or manager when performs the act of innovation is called

IV. Innovator. He invests source for the innovation and takes the risks involved in that. This is very important role indeed a pivotal one for the growth of industries.

Thus the concept of innovation is very broad. In Schumpeter's terminology, it is the intrusion into the system of new production functions "by exploiting an invention or more generally an untried technological possibility...,by opening up new source of supply of materials or new outlet for products by reorganising an industry and so on.

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3. **Imitation:-**All the three terms-invention, innovation and imitation are the successive stages of the process of innovation or technological changes i.e. imitation is not possible without innovation which in turn is not possible without invention.

8.8.2 Stages of Innovation

The invention will be usually a lonely activity of an individual or team of individuals requiring intensive mental exploration. The entire process of innovation from invention to imitation comes under the Research and Development(R&D) activity of the firm There are three stages of innovation process. Each stage of this process is a process itself.

1. **First Stage;-**The first stage of progress, that is invention, is carried on by individuals or corporate bodies like research institute, universities, government bureaus and companies. In a broad sense we may call invention as output of the research industry. if so, an invention will be a goal oriented activity. A government or corporation will be making invention for solving some social problems or for the sake of extra profit or money. To achieve the goal of invention a series of steps will be taken beginning from the definition of the problem, the alternative routes to its solution and finally the output in the form of the invention.

Development of a new process of product may involve a series of inventions or discoveries. Some of such inventions may be autonomous or random, coming into existence as 'by-products' of some other invention process. Uses of penicillin to kill some bacterial culture, vulcanisation of rubber, some uses of radiation are few examples of such inventions which have been developed in the past. All such invention will be unanticipated. They work backward from intriguing phenomena rather than forward from well-defined objectives. But once they come into existence, their applications become forward looking and goal oriented. The number of such inventions may not be much as compared to the induced inventions.

Some recent inventions which came into existence during and after 1950s are worthy of being mentioned here. Commercial jet aircrafts and container services revolutionalised movement of people and goods across countries, electronic mass media, internet and mobile telephony virtually shranked the whole world, the boom of computerisation and information technology changes the lives of people and introduction of ATM brought the banks to doors of mass.

2. **Second Stage:-** Innovation is a logical extension of the first one. When an invention is made, its fruits are made available to the society through innovation. An entrepreneur or corporation comes forward, makes the required investments for the innovation. Innovation may be in product of process of manufacturing or any other activity of corporation. It involves

risk and uncertainties. An innovation bears them and it is precisely on this ground that economists justify existence of excess profits for him.

Process-innovation and **product innovation** are two important types of innovation.

Process-innovation: - The necessity of process innovation arises when relative prices of factors of production change. If labour becomes costly, the firm may think of cost saving by adopting capital intensive technique and vice-versa. There will not be any R&D expenditure involved in this, as technology will not change. a firm may change the process of sequence or process completely to reduce the cost of production. Only equilibrium situation for the least cost combination output changes. Further if technology changes this means a new production function causing a shift of the isoquants.

Product innovation: - Product innovation is necessitated because of a variety of reasons. Primarily, a product change may be stimulated either by change in relative prices of existing products or new technology. Change in consumer preference and cost of production are the sources of change in relative prices of the product. If product is costly for the firm and at the same time its prices decline in the market because of unfavourable circumstances hence is likely to be replaced by new one.

This stage of innovation is a planned one. It has a well defined goal and the adaptation of the new technology or product to achieve the goal is an orderly management function of the firm. The process of innovation takes time and cost money. It is just like gambling where output of the game is uncertain, yet the activity is undertaken with a hope of future gains.

- 3. Third Stage:-** The third stage of the process of technological change or innovation or diffusion. The innovation, initiated by an innovator, spreads in the market. The rate of diffusion depends on market structure. If technology is freely available, there are no rigid patent practices and investment requirements for new technology are not alarming, the rate of diffusion will be fairly high. On the other hand, if there are rigid patent practices and the government assistance in technological progress is negligible, then it will be expect a low rate of diffusion of the innovation.

The process of technological change constitution the above three stage-invention, innovation and imitation- may be different in different industries. Some industries provide better opportunities for innovation or change as compared to others.

8.8.3 Measurement of Innovation Activities

Like any other economic activity we need to define measurement of innovation in order to estimate its extent. There is no unique method of the measurement of innovation but researchers have tackled the problem by measuring either inputs, put in the process of research and development or the output of these activities.

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Following are some measurements for measuring innovation:

1. The number of scientist and engineers:- In this method the number of scientist and engineers, engaged in the R& D department is taken as a measurement of innovation activities. According to this method the greater the number of scientist and engineers more will be the R&D activities of the firm or research organisation.

Limitation of the method:- This index does not accepted the contributions made by non-scientists or non-engineers. Similarly, an individual doing research work dependently, who neither belongs to a research organisation nor is any corporate is to be left out by this index.

2. The Statistics of Research and Development Expenditure:- This is very simple and widely used method. In this method the statistics of expenditure on research and development is consider to measure of innovation activity. It may be absolute or a proportion of total annual budget of the firm. According to this method larger the volume of R&D expenditure more will be the innovation activities, particularly at the first stage. The investment made by the firm for adapting invention whether related to processing technology or product variation at the second stage and third stage of innovation should be included in R&D expenditure otherwise it will be a partial index of measurement for innovation. This method is very useful if all R&D activities are in organised manner.

3. Number of Patents:- To measure the innovation or research and development activities one may use either the number of patents issued or sale of new products.

Limitation of the Method:- Limitation of this method are following:-

- This method does not imitate innovation and diffusion stages properly.
- It does not reflect the quality of innovation.
- If there is no need to use the patent immediately then the innovation sequence of the invention may be deferred for some time.
- Registration of patent varies between firms and industries. There is no common pattern for the registration of patent. All inventions are not equally patentable
- Inventions made by R&D departments of government and universities can be used by all. A firm can use them for its innovation plans.

In spite of drawbacks the index is popular for empirical studies.

4. Sale of New Products The index of sales of new product is another measurement of R&D output. This is also a partial index reflecting product side innovation. It does not explain changes in the process of manufacturing and saving of costs arising as a result of innovation.

Some other methods of measuring innovation have also been suggested such as the frequency of publications in scientific or trade journals and estimation savings of inputs per unit output of an industry. Due to more shortcomings this measure has not been used very frequently. The final choice of the method to be used for measuring innovation is left to the convenience and judgement of the researchers.

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Check Your Progress

7. Give the formula for measuring profitability.
8. Mention the terms used in the process of innovation.
9. When does the necessity for process innovation arise?

8.9 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Economist Adam Smith identified the division of labour and specialization as the two key means to achieving a larger return on production.
2. Economies of scale refer to the reduction in costs that occur when a firm produces two more commodities together rather than a single one.
3. The economies in production arise from two sources: advantage of division of labour and specialisation (ii) Technological advantages.
4. Division of labour is possible due to the large scale production. It increases per worker output and decrease the cost of unit.
5. A direct relationship exists between the employer and the workers, because less workers are employed. Due to this close relationship employer can look after well being of employees. And in a small scale production the work goes on smoothly without any disputes between the two parties.
6. Perishable Commodities cannot be stored and transported to distant markets. Therefore, the production of these goods at small scale is profitable.
7. Generally profitability can be measured by following formula-

$$\pi = R - C$$

Where π is profit, R is revenue, and C is the total cost of production. π is gross or net it depend on what is included in C.

8. There are three terms that are used in the process of innovation:
 - Invention
 - Innovation and
 - Imitation.

9. The necessity of process innovation arises when relative prices of factors of production change.

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8.10 SUMMARY

- Economies of Scale refers to the cost advantage experienced by a firm when it increases its level of output. The advantage arises due to the inverse relationship between per-unit fixed cost and the quantity produced by the firm.
- When a company reduces costs and increases production, internal economies of scale have been achieved.
- External economies arise outside of the firm due to the improvement of the environment in which the firm operate. These are available to the firm not because its size or efficiency but because of expansion of the industry as whole.
- Diseconomies of scale are disadvantages that arise due to expansion of production scale and lead to rise in the cost of production. Like economies, diseconomies may be internal and external.
- Profitability is a simple and widely used index of assessing business efficiency of a firm. The term profitability may be defined as the quality of being profitable, yielding profit or advantage.
- Profitability is a highly sensitive economic variable which is affected by host factors operating through a variety of ways. Some of them are the product price and quantities, capital stock, market share and growth rate of the firm. All such factors eventually make the profitability of the firm to vary.
- J.A. Schumpeter found innovation as the outstanding fact in the economic history of capitalistic society. Innovation is not confined to such a society only. It is a common feature in almost every economic system whether capitalistic or socialistic or something else. Science and technology are the instruments for rapid economic progress of a society. They become operative through innovation.
- The invention will be usually a lonely activity of an individual or team of individuals requiring intensive mental exploration. The entire process of innovation from invention to imitation comes under the Research and Development(R&D) activity of the firm. There are three stages of innovation process. Each stage of this process is a process itself.
- Like any other economic activity we need to define measurement of innovation in order to estimate its extent. There is no unique method of the measurement of innovation but researchers have tackled the problem by measuring either inputs, put in the process of research and development or the output of this activities.

8.11 KEY WORDS

- **Economies of scale:** It refers to the cost advantage experienced by a firm when it increases its level of output. The advantage arises due to the inverse relationship between per-unit fixed cost and the quantity produced by the firm.
- **Diseconomies of scale:** It refers to the disadvantages that arise due to expansion of production scale and lead to rise in the cost of production.
- **Profitability:** It is defined as the quality of being profitable, yielding profit or advantage.

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8.12 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. State the significance of economies of scale.
2. List the different types of economies of large scale.
3. What is an external economy of scale?
4. Differentiate between internal and external economies.
5. Define profitability.
6. What do you understand by innovation?

Long Answer Questions

1. Describe the causes and types of internal economies.
2. What do you mean by external economies of scale? Explain different parts of external economies of scale.
3. Explain advantages and disadvantages of large scale of production.
4. Discuss why economies of scale arises?
5. Discuss the small scale production. Define the causes of the survival of small production.
6. Describe the methods of measuring profitability.
7. What do you mean by the process of innovation? Explain the different stages of innovation.
8. Discuss the measurement of innovation activities.

8.13 FURTHER READINGS

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UNIT 9 GROWTH OF FIRMS

Structure

- 9.0 Introduction
- 9.1 Objectives
- 9.2 The Need for Growth
- 9.3 Size of the Firm
 - 9.3.1 Factors Determining the Size of Firm
 - 9.3.2 Firm Size vs Growth Rate
 - 9.3.3 Firm Size vs Profitability
 - 9.3.4 Constraints of the Growth of the Firm
- 9.4 Different Standards to Measure the Size of an Industrial Unit/Firms
- 9.5 Answers to Check Your Progress Questions
- 9.6 Summary
- 9.7 Key Words
- 9.8 Self Assessment Questions and Exercises
- 9.9 Further Readings

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9.0 INTRODUCTION

A firm is an organization owned by one or jointly by a few or many individuals engaged in productive activities of any kind for the sake of profit or some other well-defined aim. Most of the firms owned by private individuals in manufacturing, trade, services will aspire for profits but there may be some other such as government companies where profit motivation will be secondary or missing altogether. Growth is an imported dimension of a firm whether it is small or a large one. Maximisation of growth may be the goal of the firm or an instrument to achieve some other goals like maximisation of profit or sales or managerial utility, etc. In this unit, you will learn about the concept of growth of the firm, its relation to size and profitability and its constraints.

9.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain the need for growth of the firm
- Describe the factors affecting the size of the firm
- Examine the constraints to the growth of the firm
- Discuss the measurement of growth of an industrial unit

9.2 THE NEED FOR GROWTH

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Most of the large firms that we see around were small when they were established. In the course of time they grew continuously and attained their present status. Some of them are big multinational giant corporations having assets or annual turnover of income much more than that of many nations in the world.

Why do firms grow at all? This is a natural process as seen in biological growth of organism. There are certain market forces which compel a firm to grow over time.

The desirability of growth at macro level:- There is no doubt about the fact that every country in the world irrespective of its political ideology, pattern of economy, and size, aspires for rapid economic growth. There is no other social goal as important for a country as the economic growth which is conventionally measured as the annual rate of increase in the gross national product. The gross national product of a nation constitutes the final goods and services which are purchased by the consumers in order to meet their needs.

The need for an increase in quantity of such goods and services arises because of increase in population or improvement in the standard of living and purchasing power of existing population as a result of which consumption of goods and services increases. A country has to increase the necessary production capacity for goods and services to sustain the increase in their demand. This means growth of economy of the country. The increase in productive capacity for goods and services may be either by establishing new firms or by new entrepreneur or by expanding the existing firms in industries. When new firms join an industry, it implies an increase in competition among the sellers. The market power of an individual seller decreases with the increase in competition in the industries. This eventually may lead to a situation when every firm loses its market power completely as we find under perfect competition. The firm will thus be a passive entity in the industries satisfying with only normal profit in the long run and thus maintaining its bare survival. The existing firms in the industry may not like such situation. They will rather expand themselves and block the entry of new firms in order to maintain or increase their market power for greater profits in future, provided there are no institutional restrictions for this. But established in business, they will be having numerous advantages over the new firms on several aspects such as resourcefulness, managerial ability, and markets etc. Because of this, or being better equipped in business than the new firms, they will avail the opportunity of growth by expanding themselves. It is a natural inducement which the market provides to the existing firms for growth.

Market Forces:- There is a strong case for growth of a firm under competitive pressure not only from the potential firms but from the existing ones also. Though growth, the firms will be able to enlarge its size. The larger the firm the more perfect the control it assumes over its environment and the higher the efficiency

with which it plans its overall activities. A growing firm may be able to increase its market share in the industry. It may acquire more market power which will have favourable effects on earnings of the firm. Introduction of new products, new production processes and organisational techniques as parts of the growth strategy of the firm, will enhance the competitive power of the firm as a result of which it will be able to withstand or survive in the process of ‘the creative destruction’ as Schumpeter argued. Growth is therefore, very much desirable for the firm to stay in business otherwise it will be relegated to non-entity by the dynamic competitive forces of the market.

Ownership and Management:- In corporate economy where there is a separation between ownership and management, firms will be having growth as a major objective, since this suits the managers or what Galbraith calls them as ‘the techno-structure’. Managers want more pay, perks and subordinates, etc., which accrue to them when the firm grows larger and larger. While maximising their own utility, the managers have to take the interest of the shareholders of the company into account. For this, they use a minimum profit constraint or stock market value constraint. If this overlooked by them and if profit or value of the firm in the stock market declines, the firm will be having a threat of being taken over by the other firms. In this case, the job security of the managers will be in danger. So what the managers of the firms would be doing is simply to maximise a managerial utility function in which the rate of growth of the firm of the firm acts as a proxy for income, power, prestige and accompanying managerial gains from growth and the stock-market value acts as a proxy for job security. If we accept the proposition, then the firm has to grow as it will be the sole objective of the firm in the market.

On the basis of the situations or facts mentioned above, we may say that there is a genuine need for growth to a firm. The earning capacity of the firm increases when it grows. The market power of the firm increases with its growth which makes it stronger to face the competitive environment effectively. Growth is a long-run survival conditions for the firm particularly in an uncertain and constantly changing environment. It is a natural process but reinforced considerably by the competitive environment of the market. At any moment of time, there will be some firms that are stagnant or in decline, but it is precisely such firms whose survival potential will be most in doubt as compared to the growing firms. The firms in general, therefore, cannot ignore growth.

9.3 SIZE OF THE FIRM

The size of the firm is one of such elements which affect the efficiency of the firm in a variety of ways, or there is a set of variables which affect the size of the firms in the industry. The size of the firm is an important determinant of efficiency and profitability. It is more common to classify different firms by their size as large and small firm.

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9.3.1. Factors Determining the Size of Firm

Following are the main factors which determine the size of an industrial unit:

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- 1. Scope of the Market-** The Size of firm depends upon the scope of the market. If the scope of market is limited, then the size of firm will also be limited and vice-versa.
- 2. Managerial Factors:-** A small firm run by a proprietor or few partners can be managed by one man or a few. In companies a team of professional managers have specialisation in different aspect of the business such as finance, marketing, production, personnel management. to utilise the capacity of the management cadre fully the firm must have appropriately large in size otherwise indivisibility existing as a result of this will make the firm inefficient.
- 3. Employment Factors:-** If a firm is large it will attract efficient and experienced employees which in turn will be affecting its overall productivity positively. Such firms offer more scope for promotion and variety of occupation, border benefits and facilities of work. The small firm may face scarcity of qualified and skilled staff in a greater degree than a larger one.
- 4. Nature of the Demand-** The size of firm depends on the nature of demand. If the nature of produced goods is perishable, then the size of firm would be small and vice-versa.
- 5. Nature of the Industry-** The size of a firm depends upon the nature of the industry. From this point of view, consumer industry is comparatively at a small –scale compared to capital and basic industries, which carry operations at larger-scale. In addition, the nature of some firm is such that production is often not practically possible at small level. For example- Iron and Steel Industry, Jute Industry, Cotton Textile Industry, etc.
- 6. Localisation of Industrial Unit/ Firm -** If the industrial unit/Firm is situated in a densely populated area from where it can distribute finished goods at minimum cost, then the size of such unit will continue to increase till it reaches at an optimum point.
- 7. Economic Forces-** Due to competition and continuous increase in the outlay of capital, the size of industrial unit is often larger than the earlier established similar venture.
- 8. Efficiency and Ability of Entrepreneur-** The size of any industrial unit/ Firm depends upon the efficiency and ability of entrepreneur. If it is established by efficient and able entrepreneur, then the size of industrial unit would be large and vice-versa.
- 9. Financial Factor:-** The size of a large firm measurement in terms of value of its assets will enable it to obtain long term finance and other credits at more favourable term then a smaller firm. Apart from this actual administrative cost of raising fund fall with the size of the issue i.e. quantity of money raised in the financial market decline with the level of output. A

larger firm gets benefits from this. Greater the size of the firm greater will be the confidence of the financial market in the strength of the firm, hence lower will be the risk premium.

- 10. Risk Factor:** A business is normally full of risk and uncertainty. Larger the firm, stronger it will be to face such situation. Risk and certainty come in variety of ways. There may be an unforeseen change in the demand they may be changed in the demand. There may be change in production, technology or product itself. Government policy and environment change. Large firm can fight all such risk and uncertainty. It will be able to diversify its market, its product, its resources of supply without losing much of the economies of large scale production. A bigger firm will have better chances to off-set the random losses. It may be able to predict such losses on the basis of the law of average and maintain the necessary mechanism to avoid them.
- 11. Government Policy-** The size of an industrial unit/Firm is also affected by the government policy. If the government reserves the right to establish some of industries in public sector, then the size of such industries will be large enough due to monopoly of the Government. If the government has given permission for the establishment of industrial unit at small level, then the size of such units will be small. Likewise, discriminating tax policies also affect the size of an industrial unit.

9.3.2 Firm Size Vs Growth Rate

The size of the firm is a relevant determinant of its growth rate. The hypothesis that is normally used for this purpose is known as Gibrat's Law or law of proportionate effect. According to this law, the probability of a given firm's growing at a rate of say $X\%$ is independent of the size of that firm. This implies that the probability of a large firm growing at x rate per year is not different from the probability of a small firm growing at the same rate during the time period. It also implies that the variance of the growth rate of various size classes of firms should be equal, though this implication is not crucial in the context of the size and growth rate relationship.

To test the Gibrat's law empirically many attempts were made. Hymer and Pashigian and Mansfield tested it for the American firm where it was found valid. That is, they found no systematic difference in the mean growth rate of different sized firms. However, the variability of the growth rate was found declining with the size of the firm. Similar conclusions were obtained for U.K. firms by Singh and Whittington but opposite result by Samuels i.e larger firms growing at faster rate than the smaller ones and uniform variances of the growth rate within a given size class for the smaller and larger firms. This means issue is still open for further enquiries, though overwhelming support is being seen for the validity of the Gibrat's law in practice. The question arises why the smaller firms do not register faster rate of growth than the bigger one to take the advantages of the economies of scale till optimum size is achieved. Lack of finance due to low profitability may be

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one explanation for this. Further let us assume that larger firms show higher profitability than the smaller firms and growth depends on profitability. It means larger firm should grow at a faster rate than the smaller ones because of their high profitability. But this is also not seen in practice. It means either the larger firms are not more profitable or there is something else which hampers the growth of the larger firms. Marcus provided simple answer for this- According to him the growth rate of a firm depends on jointly on its profitability and market share. A large market share will restrict the growth of the firm because the larger firm's actions greatly affect the market conditions and market price. Further the large firm may be afraid of being caught under monopoly laws if it grows more and more. Marcus empirically verified his explanation.

Attempts made by Kumar, Hall, Evans and Dunne and Allen in finding the relationship between the size of the firm and growth rate. Gibrat's law is weakly rejected for the smaller firms in Hall's sample of firms and accepted for the larger firms. Evans found that firm growth decreases at a diminishing rate with firm size even after controlling for the exit of slow growing firms from the sample. Gibrat law therefore fails although the severity of the failure decreases with the firm size. Thus in conclusion we may say that more empirical work required to say definitely about the relationship between size and growth of the firm.

9.3.3 Firm Size Vs Profitability

There is an interesting but questionable debate about this issue. According to one group of economists led by Steindl and Baumol, the market power conferred by large firm size and the increased money capital which put the firm in a higher level of imperfectly competing capital group will tend to increase the firm's profit rates. According to this group, large firms are capable of encashing the investment opportunities which bring larger profit rates but the smaller firms cannot take them because of financial difficulties. Prof. Gale observed that the size of the firm when measured through its market share provides better product differentiation opportunities to it, allows the firm to operate in the oligopolistic bargaining power and other activities and provides scope to gain the advantages from pecuniary benefits, advertisement and economic of scale or marketing if not in the decreasing zone of the cost curve. The net result of all these as one expects is to show greater profitability for the larger firms. The other group of economists led by Marshall, Robinson and Kaldor, however, contended that very large firms would experience lower profit rates because of diminishing returns to the fixed factors of management.

The empirical evidences about this relationship are equally divided into these two opposite contentions. According to Hall and L. Weiss, firm's profit rates are determined by many factors, size of the firm being one of them. Using a cross-section of 341 out of 500 largest firms in U.S.A for the period 1956-1962, and multiple regression frameworks for the profitability equation, they discovered either a strong positive association between size of the firm and profit rate or a $\hat{\Lambda}$ shaped relationship between them. Haines, however, from similar data for the 500 largest

US firms for the period of 1956-67 discovered negative correlation between the two variables. The studies conducted by H.O. Stekler, J.M. Samuels and D.J. Smyth, A. Sing and G. Whittington and Whittington also show the negative relationship or no relationship between the size of the firm and profitability. On the other hand, Gale and Shepherd by taking size of the firm in term of market share found the positive relationship between them. There are many other such studies supporting either controversy. Nothing can be said confidently about the size of the firm and profitability. Perhaps it will take more efforts to establish the fact on size of firm and profitability relationship.

9.3.4 Constraints of the Growth of the Firm

The constraints to the size of the firm become operative when diseconomies of scale in production set are causing the average cost curve to rise. The factors that contribute in constraint the size of a firm are following-

Capital Formation:- Finance is the pre-requisite of the growth of the firm. Generally, more amount of capital is invested in big size of firm and less amount of capital is invested in small size of firm. There can be no growth in the absence of finance resources. In the backward economy capital formation is very low. Capital equipment requires huge amount of financial resources. Due to lack of financial resources firms are unable to acquire adequate amount at reasonable rate so the firm's growth is very low in underdeveloped countries.

1. **Market Forces:-** Market forces support the large size of the industrial units. Large size of industrial units obtains adequate economies in purchase and sale at a large scale. But if size of an industrial unit is increased after that point then in place of economy losses will start.
2. **Managerial Forces** – Assuming that the firm has achieved the appropriate size to have cent per cent efficiency of management. any increase in size of the firm beyond this point is likely to put strain on the management which may deteriorate the efficiency causing the average cost to rise. Decision take longer time communication between different units of the firm becomes more complex and indirect and the coordination process become less effective.

A management system of large firms will be hierarchical in nature. It will be a team of management with decentralisation in the decision making and action process. As the size of the firm increases the hierarchy pattern becomes more intensive in the sense that either it expands or the span of control at each hierarchy level increases. There will be more and more managers dealing with the complex administrative work at every level of the hierarchy or in every department of the firm. If size of the firm is large enough, it may be difficult to achieve these managerial functions efficiently. Again the size of the firm goes above the optimum level and more and more autonomy is given to the lower levels of decision making units, a power clash may develop

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among the managers to assert themselves. This may strain the relations among them and thus there is every possibility of the firm's efficiency to be impaired by the recalcitrance, excessive zeal, discontent and overambitious of the individual administrative officials. All this leads to the internal inefficiency.

- 3. Lack of Initial Capital:-** It may be very difficult for a new firm to raise the adequate funds for investment initially which restricts its choice to go for a large size. An established firm will be in a better position in this regard because of the economies of being established. So it can go on expanding its size. In general, financial constraints may be operative in limiting the size of majority of the firm in an industry.
- 4. Technical Forces:-** There will be some technical constraints in expanding the size of the plant. Technical forces related to production process determined the technical size of the firm. If there is higher possibility of mechanisation in the industry larger will be the size of the technical industrial unit. Bigger the machines, greater will be the requirement of the space to house them. Hence, bigger will be the building which needs stronger foundation. It can be increased and benefits of economies can be obtained upto a limit, but it is not necessary that such sequence is maintained perfectly. There is every possibility of having inappropriate growth of inputs when size of the plants expands over time. It makes the average cost curve to rise upward because of diseconomies of scale.
- 5. Labour Constraints :-** Size of the firm depends upon the skilled labours. Small firm may not able to find the skilled labour at affordable wages. Large size firm can manage skilled labour and provide training them according to the requirement. Greater the size stronger will be the pressure from the trade union on the management of the firm. The union because of its strength may penalise the large firm for its size resulting in a welfare transfer of profits from the firms to its members in the form of higher wages. the instrument of strike and other ways of collective bargaining are generally used for such transfers. Afraid of such labour power which Galbraith conceived as countervailing power. The entrepreneur may prefer smaller plants at different location rather than one large plant at a particular place.
- 6. Transportation costs and Market Density :-** Transport cost will be operative in limiting the size of the plant when their proportion in the total cost of production is quite high, market density for the product of the plant is low enough and inputs supply sources are widely spread. The firm has to pay higher transportation charges for getting the increased supplies of the material from the greater and greater distance if it expands its plant. It has to pay higher transportation cost for selling its output to the more distant consumers. After a certain optimal size of the plant such transportation cost will be significant factors for restraining further growth of the size because of the diseconomies of scale.

- 7. Risk and Fluctuation:**-Risk and fluctuation also affect the size of the firm. Risk and fluctuation are chiefly of three kinds: Economic uncertainty- the fluctuation in the price of the product and the demand of product; Natural calamities- Flood, drought, fire etc; Human uncertainties- war. Economic fluctuations are four kinds- cyclical changes, short-term changes taking place in demand, seasonal fluctuation the demand of some goods are only in a particular season, fixed changes big changes in the production method due to heavy capital investment, uncertain changes- due to uncertainties in demand. Forces of risks favour small size firms if they are compared to large size of units because small units can modify themselves according to the changes.
- 8. Personal Constraint:**- Entrepreneurial ability and ambition play an important role in business. some entrepreneur prefer small size for their firm as such firm can be managed effectively by them. they will not prefer the large size of the firm as that needs more efforts, new skills of coordination, loss of effective control over the business and so on. They may not like all these extra troubles because either they are incapable of facing them or feel satisfied with their income.
- 9. Social and Institutional Constraint:**- Greater the size of the firm more will be its monopoly power in the market. A government may not like to develop such situation, particularly in the private sector as this will be detrimental to the interest of the society. To avoid the concentration of economic power, the states normally regulate the size of the firm through legislations. Medium size firm preferred for the decentralisation of the economic power and restriction are put on the growth of larger firms. The economic efficiency viewed at from the social view point become the over-riding factor to determine the size of the firm as against technical efficiency.

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9.4 DIFFERENT STANDARDS TO MEASURE THE SIZE OF AN INDUSTRIAL UNIT/ FIRMS

Following are the different standards which are used to measure the size of an Industrial Unit:

- (1) **Amount of Capital Invested:** Total capital invested is a good standard to measure the size of a firm, Generally, more amount of capital is invested in big size of firm and less amount of capital is invested in small size of firm. This standard is simple but cannot be said to apply universally because (i) it is difficult to have correct assessment of capital invested. And (ii) suitable adjustments will have to be made on changes in the value of money otherwise, this standard will present wrong conclusion.
- (2) **Volume of Output:** It is an important standard for measuring the size of a firm, but this standard can only be used in those industries where same kind

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of goods are produced, for example- Sugar Industry, Cement Industry, Coal Industry, etc. Opposite to this, the industries where products are heterogenous this basis is not suitable, for example- Chemical Industry, Engineering Industry, Machine Manufacturing Industry. etc.

- (3) Value of Output:** The size of industrial unit can also be measured on the basis of value of output. This standard is good for comparing the size of such industries which are having homogenous production, for this, value of output or total sales value can be taken. This standard also has two limitations: (i) In spite of equal area of two industrial units, their size may be different due to difference in cost value of output, (ii) Even on equal production in two years within an industrial unit, value of output may have differences due to change in market price.
- (4) Number of Workers:** The size of two different industrial units can also be compared on the basis of number of workers. On the basis of this standard, the industrial unit which has more number of workers, the size of that unit will be greater than the other industrial unit which has less number of workers. This standard is also not suitable because some industries are of labour intensive nature. As a result of this, the number of workers will be more in labour intensive industry. However, if it is compared to the number of workers with the capital intensive industries, then the result may be wrong.
- (5) Amount of Power Used:** The amount of power is also the standard of measurement of size of industrial units. It is natural that the amount of power used in large size industrial unit will be higher if it is compared to a small size industrial unit. This standard is also not suitable because it can be used only in those industrial units in which the progress of mechanisation is equal and there is use of same kind of power.
- (6) Quantity of Raw Materials:** The size of industrial units can also be measured on the basis of quantity of raw-materials used by the industrial units during certain period of time. But this standard can only be used on the conditions, when same kind of raw materials and production processes are used by the industrial units. For example, on the basis of crushing capacity of the sugarcane, the size of different sugar mills can be measured.
- (7) Number of Plants and Equipments:** The size of industrial units can also be measured on the basis of number of plants and equipments. For example, on the basis of spindles and handlooms, the size of cotton textile industrial units can be measured.
- (8) Complexity of the Management Arrangement:** The more complex the management arrangement, the larger will be the size of industrial units. The main defect of this standard is, that this basis is not the arithmetic estimation but qualitative estimation of industrial units.

From the above discussion, it is clear that there is as such no universal standard which can be used equally for all times, to all kinds of industrial units and to all set

of circumstances. In reality, on the basis of any one standard, the industrial unit should be determined by selecting more than one standard.

Check Your Progress

1. Name two important elements of firms which are determined through the size of the firm.
2. Which size of firm is preferred for the decentralisation of the economic power?
3. List the limitations of the value of output standard.

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9.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The size of the firm is an important determinant of efficiency and profitability.
2. Medium size firm preferred for the decentralisation of the economic power and restriction are put on the growth of larger firms.
3. The limitation of the value of output standard is that: (i) In spite of equal area of two industrial units, their size may be different due to difference in cost value of output, (ii) Even on equal production in two years within an industrial unit, value of output may have differences due to change in market price.

9.6 SUMMARY

- A firm is an organization owned by one or jointly by a few or many individuals which is engaged in productive activities for profit motive. Growth is an imported dimension of a firm whether it is small or a large one.
- The need for an increase in quantity of such goods and services arises due to increase in population or improvement in the standard of living and purchasing power of existing population as a result of which consumption of goods and services increases.
- There is a strong case for growth of a firm under competitive pressure not only from the potential firms but from the existing ones also. Ownership and management, firms will be having growth as a major objective. The managers have to take the interest; the firm grows larger and larger because they want more pay perks and subordinates.
- The size of the firm is one of such elements which affect the efficiency of the firm in a variety of ways. The size of firm depends on nature of demand and supply, Economic Forces, nature of industry, market forces etc. The size of the firm is an important determinant of efficiency and profitability. The market power of the firm increases with its growth which makes it stronger to face the competitive environment effectively.

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9.7 KEY WORDS

- **Firm:** It is an organization owned by one or jointly by a few or many individuals which are engaged in productive activities of any kind for the sake of profit or some other well defined aim.
- **Capital formation:** It is a term used to describe the net capital accumulation during an accounting period for a particular country.

9.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What do you understand by the size of firm?
2. Briefly explain the desirability of growth for firms.

Long Answer Questions

1. Explain the need of the growth of the firm.
2. Give the theoretical concept of the growth of the firm.
3. Describe the main constraints of the growth of firm.
4. What are the factors that determine the size of firm? Explain the different standards to measure the size of an industrial unit/ firms.
5. Write short notes on: Firm Size Vs Profitability and Firm Size Vs growth.

9.9 FURTHER READINGS

- Clarke, Roger. 1985. *Industrial Economics*. New York: Basil Blackwell.
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UNIT 10 PRODUCTIVITY AND EFFICIENCY

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Structure

- 10.0 Introduction
- 10.1 Objectives
- 10.2 Meaning of Productivity
 - 10.2.1 Definition of Productivity
 - 10.2.2 Importance and Growth of Productivity
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10.0 INTRODUCTION

Generally, all the under-developed countries are found to be trapped into vicious circle of poverty. Productivity is the main basis of modern industrial and economic development. Productivity is a new concept in the industrial world, today every country wants to make rapid industrial development. But the industrial development depends on the productivity of industrial unit. Hence it is clear that if a country ignores the importance of productivity, it cannot make any industrial progress. It will not be wrong to say that the concept of productivity has created new hopes in the fields of industrial development. In production performance of firms and nations productivity is an important factor. It is expressed as the ratio of output to inputs used in a production process, i.e. output per unit of input. In this unit, you will learn about the concept of productivity, and the efficiency of firms and industry.

10.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the meaning, definition and growth of productivity
- Describe the measurement of productivity
- Examine the factors affecting productivity
- Explain the concept of efficiency

10.2 MEANING OF PRODUCTIVITY

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Productivity means reaching the optimum level of performance with the minimum expenditure of resources. The concept refers to National Productivity or Industrial Productivity. The organisation productivity or industrial productivity is a ratio of output and input reflecting the ratio of growth of performance of production. It is combination of effectiveness and efficiency. A measure of the efficiency of person, machine, factory, system etc., in converting input into useful output. Productivity is computed by dividing output by input or total costs incurred or resources (capital, energy, personal, material etc.) consumed. Productivity is a critical determinant of cost efficiency. We can understand productivity symbolically as follow:

$$P = \frac{\text{Output}}{\text{Input}} = \frac{O}{I}$$

Whereas, P= Productivity

Productivity is a combination of effectiveness and efficiency of the enterprise. Effectiveness will point out whether a desired result was actually accomplished or not. Efficiency will indicate what resources were actually used to secure the desired result or output. Effectiveness is concerned with the performance. Efficiency is tied with utilisation of resources.

10.2.1 Definition of Productivity

The term productivity has been defined by some eminent authors and International Labour Organisation as under-

Prof. S.C.Kuchhal, “*Productivity implies development of an attitude of mind and a constant urge to find cheaper, quicker, easier and safer of doing a job, manufacturing a product and providing a service. It aims at the maximum utilisation of resources for yielding as many goods and services as possible of the kinds most wanted by consumers, at the lowest possible cost.*”

M.Benerjee, “*The word productivity usually means the ratio between the output of wealth in the form of goods and services and input of resources used up in that output*”

Evan Clauque, “*Productivity express the overall efficiency with which our industries perform.*”

Russel W.Fensake, “*Productivity is (i) a form of efficiency (ii) a measure of some kind rather variable requiring measurement (iii) utilisation of resources (iv) a ratio rather than phenomenon (v)rate of return primarily in monetary term*”

Dr. B.B. Lal, “*Productivity refers to measureable relationship between defined output and input, i.e., between the production results and the relative production agents in both the financial physical terms in relation to given time and conditions*”

International Labour Organisation, “*Productivity may be taken to constitute the ratio of all available goods and services to the potential resources of the group, community or the country. Thus in its broadest and most fundamental sense, the problem of increasing productivity implies the full, proper and efficient utilisation of the available resources of men, machines, money, power, land etc. productivity connotes a mass attack on waste of every type and every sphere.*”

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10.2.2 Importance and Growth of Productivity

Productivity is one of the most renowned concepts within the field of business administration. Because of that a lot of the management strategies are designed attending the factors that affect it. Increasing productivity simply means increasing the capacity of production with the same level of resources. Another way to explain productivity is to refer to it as being able to produce the same level of quantities at lower cost, while investing same level of labour force, materials, time and other such factors.

Productivity, in a wider sense, denotes the increase in the power of the economy with the help of rising economic growth, fulfilling human needs through the employment of same level of resources. Economic growth will rise with the help of a rise in the Gross Domestic Product (GDP) and overall economic output, thereby improving the living standards of the participants of production. This will further improve the economy as the tax pools will then be advantageously utilized by the economy to provide better education, welfare, health care facilities as well as improve funding in the research areas. Therefore, there are twin benefits of improving productivity: helping the economy grow as well as benefitting the participants in the process.

The value of improving the productivity in an economy can be understood through three important perspectives:

- **Consumers/ Workers:-** The benefit of productivity at the lowest level can be studied through the living standards of the consumers and workers. When there is an improvement, there is an increase in the efficiency, this then translates into lesser utilization of inputs of production used for generating goods. This will result in the lowering of costs, lesser working hours even when there are high levels of consumption.
- **Business:-** Productivity for businesses simply means achieving the best transformation of resources into goods at the lowest possible costs. It tracks the efficiency of operations. Having happy and motivated employees will result in greater output through the use of fewer inputs. Higher productivity for businesses is equal to achieving better margins at lower costs. This will result in better consumption for employees, increased working capital and better competitive capacity for the businesses.

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- **Government:-** For governments, higher productivity will result in greater economic growth. This will further increase the tax pools which can be again used for investment in infrastructural or welfare requirements of the nation.

Increased productivity for a firm is beneficial as it means that it can easily meet the demands and obligations that it has to fulfil regarding its stakeholders including the workers, shareholders and government and at the same time remain competitive in the market place. Increasing the input for production does not mean increase in the income from production, but increase in productivity does mean that the same or lower level of inputs more income and output is being generated. Further, newer resources may be employed and profitability increased.

10.2.3 Misconceptions Against Productivity

The following are the misconception about productivity-

- 1. Productivity Vs. Production:-** Usually the terms of production and productivity are confused with each other. Though both are closely linked with each other, yet there is a difference between two. Production depend on collective efforts of different sources (land, labour, capital, entrepreneur and organisation) of production, while productivity is a ratio of Net Output and source of production per unit. Though higher productivity leads to higher production, yet higher production does not necessarily mean higher productivity. In an industrial unit, production can be increased by employing more financial and manual resources and adding machines but productivity can be possible only by utilising more effectively the existing volume of inputs, in order to secure more output or getting the same output by reducing the inputs. Or we can say that productivity is related to efficiency of the organisation and the management. In the word of *Prof. S.C.Kuchhal*, the production itself does not raise the standard of living. It must be accompanied with increase of real income which can possible only through increase in productivity.
- 2. Productivity Vs Increase in Employers' Profit:-**The workers are confused and they are of opinion that increased profit is the result of extra work load on workers. So, this increased part or profit should be given to workers. This logic of workers is not correct in the same way as a single hand can never clan. Reality is this that an increase into productivity occurs due to joint sacrifices of employers and employees. Therefore, its benefit should not be given only to employer but its benefit should be given to the employees and consumers also equally.
- 3. Productivity Vs Unemployment:-**It is generally observed and said by workers that productivity movement adversely affects the employment. This logic is also a type of misconception in their minds because in the beginning, modernisation is adopted for attaining productivity and so some workers

are retrenched for a short while in the sense of saving national resources. But as soon as the cost of production decreases, the demand increases, due to price reduction and thereby in order to fill the widening gap between demand and supply, new units are set up or the existing units are enlarged. As a consequence of expansion, the retrenched workers get again employment. However, it would be worthwhile, if the workers were not retrenched and they were given some other work to achieve the excellence in productivity.

- 4. Productivity Vs Rationalisation:-** Some persons are confused regarding productivity and rationalisation. They understand that both are same things but it is not so, because rationalisation stresses on the method of work based on any scientific logic while productivity lays emphasis on the economic use of resources for the attainment of the goal. Rationalisation advocates for the elimination of wastages while productivity advocates for managerial improvement. Moreover, rationalisation is far wider than productivity. Thus, to assume both as similar is not justified.
- 5. Productivity Vs Work-load:-** The workers are confused that the productivity increases their work-load and they have to undergo more work-load. As regards the increased part, it goes into the hand of producers and workers are thus exploited. But the reality is different because in order to have an increase in productivity, the work is get done more rationally with new and better techniques and machines, the workers are trained, their working conditions are improved, all this makes their work easier and increase their efficiency. Thus it can be concluded that the productivity is increased through an increase in their efficiency not by increasing their work-load.

Check Your Progress

1. How is productivity computed?
2. State the twin benefits of improving productivity.

10.3 CONCEPT EFFICIENCY: EFFICIENCY OF FIRM AND INDUSTRY

Each and every economic activity (whether production, consumption or anything else) should aim at maximum possible efficiency or performance of the firm or industry. In static sense, efficiency is the extent to which production occurs at minimum cost. While dynamic and progressive sense, efficiency indicates the rate of technological progress.

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The term efficiency or performance being so important is to be defined and understood properly right at the beginning. Since our objective is to study the economic behaviour of the firm and industry, therefore, we should examine the term efficiency from their point of view known as industrial efficiency.

10.3.1 Dimensions of Industrial Efficiency

Industrial efficiency has several dimensions which are to be examined to understand it properly.

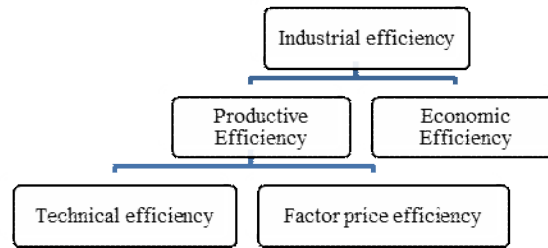


Fig. 10.1 Aspects of Industrial Efficiency

A firm is a technical unit engaged in production of commodity. In this unit a set of given inputs are transformed into output defined by the production function. In this case the emphasis will be on achieving maximum 'productive efficiency'. If the firm is an organisational unit engaged in production and disposal of a commodity for some desired purpose, then the emphasis will be on achieving 'business' or 'economic efficiency.'

Productive Efficiency: - Farrell defined productive efficiency in terms of two components that are 'technical efficiency' and 'factor price efficiency'.

I. Technical efficiency: Technical efficiency means doing a job in the cheapest possible way, that is production of a given level of output from the lowest possible combination of inputs. Technical efficiency may be assessed on the basis of some quantitative standard of performance. A technical term has one of the following meanings:

- i. Technical efficiency can be assessed on the basis of some quantitative standard of performance. For example, the extent to which air conditioner can cool the room as per claims of the company.
- ii. Technical efficiency may imply doing a task in the cheapest possible way. For example, least cost combination of input to produce a given output level.
- iii. A machine or appliance is technically efficient if it is adequate to the demand made on it or it lives up to the claims made on it. For example, reliability and quickness of courier service to deliver the letter in the far flung area.

The first two above concept of the technical efficiency are interrelated. The reason is that the avoidance of loss or wastage is one way of maximising

output from the given set of inputs. However, there may be conflict between second and third concept. In practice we keep the satisfying attributes of a product at a fixed level that defines the technical efficiency as the degree of economy in input utilisation to produce a given level of output. Improvement in technical efficiency may take place due to better maintenance of machinery, training, experience, better management relations, and better organisation of production.

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II. Factor price efficiency:- Factor price efficiency is the second element of productive efficiency. It measures the skill in achieving the best combination of the input by considering their relative prices. This is very important when one input can be substituted for another in the process of production. We can clear the idea of the two elements of the productive efficiency with the help of Fig. 10.2.

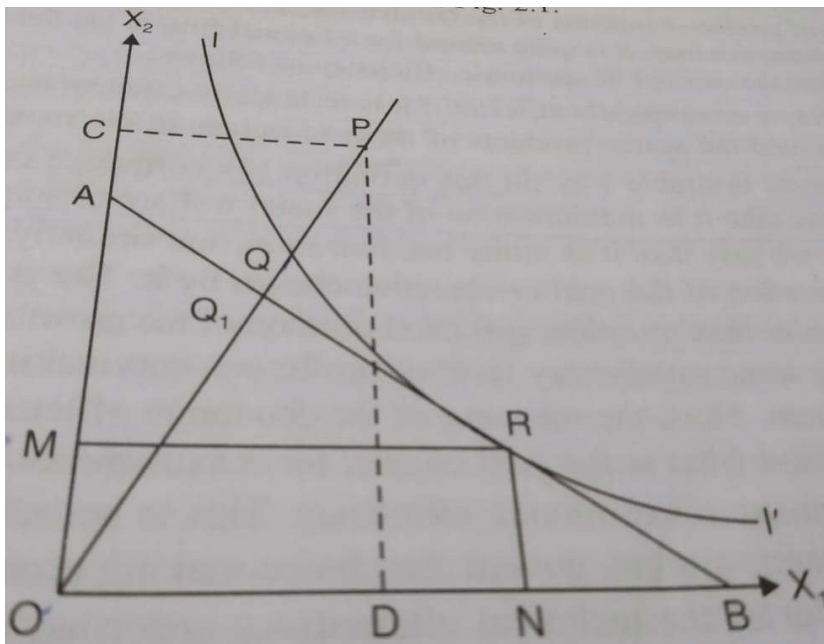


Fig. 10.2 Productive Efficiency

In this figure II' is an isoquant which shows the most efficient combinations of the two factors X_1 and X_2 used to produce a given level of output of a commodity. Most efficient means the minimum combination of the factors required according to the best practice production function for the commodity. In practice, a firm may move away from the II' curve and thus causing inefficiency in the factor uses. Let us take P as the actual situation where the firm uses OD and OC quantities of the two factors X_1 and X_2 respectively to produce that specified level of output. The technical efficiency of the firm at P in relation to the best practice frontier II' can be measured by the ratio OQ / OP in figure AB is the isocost line indicating the combination of the two factors that can be purchased from a given amount of money and given

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factor prices. The factor price efficiency for the firm can be measured by the ratio OQ_1 / OP . This is because any combination of the two factors beyond AB line will not possible when the amount of total resources and factor prices are fixed.

$$\text{Productive Efficiency} = \frac{OQ}{OP} \times \frac{OQ_1}{OQ} = \frac{OQ_1}{OP}$$

The closer this ratio moves to unity, the higher will be the productive efficiency. Productive efficiency is maximum, when actual output equals to potential output. In other words, maximum output is produced from the inputs used by the firm, given technology of production. At a point R the productive efficiency will be maximum. This is the familiar tangency condition in the isoquant analysis. It is difficult to achieve as planning of the responsible manager may not be perfect, coordination of the complex operations may be inadequate, and the knowledge of the best in the current practices as well as of the factor prices may not be precise. All these are essential requirements for achievement of the productive efficiency. The emphasis on the productive efficiency in business is only a partial requirement. In practice a firm may look for something more than merely minimum cost of production.

Economic Efficiency:- When a firm is treated as an organizational unit, engaged in production and disposal of a commodity, then the emphasis is on economic or business efficiency. A broader concept that takes care of productive efficiency as well as other things in the economic efficiency which may also be called business efficiency from a firm's point of view. The propositions on which the concept of economic efficiency depends are:

- Resources at the disposal of the firm are scarce and
- They can be put on alternative uses,

Economic efficiency assumes that the resources (men, machines, material, money and time) are scarce, which can be put to alternative uses and the rational firm gets the best one. One can produce, say product A or product B or product C. If one product say A, is preferred then the alternative foregone is the cost of product A in terms of the familiar concept of opportunity cost. Given the scarcity of resources and their alternative uses, it is quite natural for a rational firm to get the best from them. Based on this fact, we may define the concept of economic efficiency as follows:-

An economic system is economically efficient if it is technically efficient and if it succeeds in rationing out its scarce resources, and the scarce products of these resources in the most desirable way. The phrase 'in the most desirable way' in this definition has normative condition. In the case of a society as a whole we make take as it as maximisation of the social welfare some aspect of that. In the case of an individual consumer. It implies utility maximisation for the consumer of appropriate optimisation, and similarly in

the context of a firm, it is to be interpreted as maximisation of the goal or objective chosen by it. The goal of the firm may be either -

- i. Profit maximisation;
- ii. Sales maximisation;
- iii. Maximisation of growth;
- iv. Maximisation of the value of the firm;
- v. Earning some satisfactory level of profit;
- vi. Survival in the business for long period; or
- vii. Any combination of them.

Thus, the meaning of economic efficiency varies according to whose viewpoint we are considering and what is the goal chosen for maximisation. Further as mentioned above, technical efficiency is a prerequisite for economic efficiency. This is because technological aspects, being exogenous variables in the economic system, govern the choice making process. In the production realm of production, a firm cannot go out of the technical alternatives specified by the production function it is using. Once alternatives are given, it has to choose the best one from them, say the best machine or the best method of production. If there is inefficiency in this regard, it is bound to create economic inefficiency in due course.

For the entire economic system, a community, economic efficiency implies efficiency in selection of goods to be produced, allocation of resources in the production of these goods, choice of the production methods, efficient allotment of the goods produced among the consumers. Economists argue that correct allocation and utilisation of all resources, their products and in competition with other desires of the community.

10.3.2 Determinants of Economic Efficiency

The determinant of the economic efficiency can be divided into categories:-

- I. Internal Force
- II. External Force

I. Internal Force: - In the first category we may include all those activities which define the managerial functions of firm. These include efficient planning, and regulation of the operation, willingness to accept change in policies related to conduct of the business including technological innovations, a smooth flow of work, proper supervision, adequate facilities for work including fair pay etc. They are responsible for making proper policies and to execute them. If there is inefficiency on their part the entire operation will be inefficient and so ultimately there will be low economic efficiency. Organisational or managerial slackness or internal inefficiency 'X-inefficiency' is such internal forces that leading to economic inefficiency in business.

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II. External Force:- The second category of force affection economic efficiency includes the organisational or structural conditions prevailing in the industry to which the firm belong, short term fluctuation in the market for both inputs and outputs of the firm, trade union activities and government regulations etc. If the market is very competitive for the firm, the inefficiency will be very low or not at all. It is because the inefficient factors of production will be thrown out from the industry due to strong competition. On the contrary, in case of monopoly it will not be subjected to market competition. Its performance may be poor. It may use its resources inefficiently. There may not be any check for that. Whatever may be the situation it is a strong proposition that market structure exerts considerable influence on the economic efficiency of a firm. The other factors mention in this category are self-explanatory for example, if there is power breakdown or shortage of raw material will cause inefficiency of the firm due to fall in sales or profit. All external forces together may create condition for the market in perfection which eventually affects the allocative of efficiency of the firm. The allocative is defined through a set of general equilibrium condition. It occurs when output is that level where marginal cost equals price in each product for each firm. Deviation from such situation as important efficiency implication from economic and social point of view.

10.3.3 Measurement of Efficiency Level

Measurement means quantification which is essential in industrial economic in order to make it empirically relevant. There is no unique method to measure industrial efficiency or its components. For example, technical efficiency can be measured through some physical indicator such as capital-output ratio, capital-labour ratio, actual cost-standard cost ratio etc. The last ratio can also we use to measure internal efficiency of the firm however, it is difficult to measure the overall efficiency of the firm in precise terms. Three methods are generally used for this purpose:

1. Optimisation model- such as linear programming
2. Total productivity or profitability ratio
3. Econometric method

1. Optimisation model: In this method a firm has to specify in quantitative terms the objective function as well as the constraints faced to achieve that and then apply the standard mathematical tools to solve the problem.

The idea of optimisation is present in every decision making including production decision of a firm or industries. In all such decision of normative economics, objective has to be fulfilled, given technology, raw material etc. Optimisation leads to the determination of optimum value of the decision or objective variable. It consists of dependent variables representing the object of optimisation and independent variables whose value are to be determined so as to optimize the objective function.

Optimisation technique may pertain to achievement of maximum output, sales revenue, or profit, minimisation of cost and so on. A production manager would like to know the level of output to achieve maximum sales revenue or profit. Similarly, a works manager might be interested in knowing the amount of labour, machine, hours and raw material so as to produce a given level of output at the minimum cost.

Specification of alternative available to a decision maker is an essential part of the optimisation of technique. The available set of alternative called as feasible set, can be described by one or more function or inequalities. These functions or inequalities which restrict the alternative are called constraint.

The optimisation technique facing a business firm or industries may be unconstrained or constrained one. Linear programming is a popular quantitative constraint optimisation technique. Linear programming is relatively a new tool of business decision making. To explain the method let us take us simple linear programming problem.

Let us say, a manufacture is planning to make two products using three input face labour, machine hours and raw material. One unit of product 1 require 1 man hour, 1 machine hour, and 2 unit of material similarly 1 unit of product 2 require 3 man hour, 1 machine hour and 1 unit of raw material. The total amount of the inputs are fixed and given as 18 men hour, 8 machine hours and 14 unit of raw material per day. The manufacturer expects Rs. 10 and Rs 20 as price for the 2 product in the market will be actually able to sell them. What should be most efficient level of output of the 2 product?

Let us take that q_1 and q_2 are the level of output of 2 products: 1 & 2 respectively at the optimality situation. In this example the objective of manufacturer will be to maximise the total sales. The sales and revenue equation for the manufacturer is

$$R = 10q_1 + 20q_2 \quad \dots 10.1$$

To produce q_1 and q_2 levels of the output, the input demand-supply equation will be as :-

$$q_1 + 3q_2 \leq 18$$

$$q_1 + q_2 \leq 8$$

$$2q_1 + q_2 \leq 14$$

Each of these equations shows that the utilisation of the input cannot be more than the availability. It may be less of course. Further he says that there is a no negative output of either product since it has no meaning in economics that is

$$q_1 \geq 0$$

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$$q_2 \geq 0$$

Now the problem is to maximise total revenue expressed by equation (10.1) subject to the constraints expressed by the aforementioned equations. We may use the standard algebraic methods for the solution but here we can do it graphically. By adopting all constraint on a two-dimensional graph we get the shape shown in the Fig. 10.3.

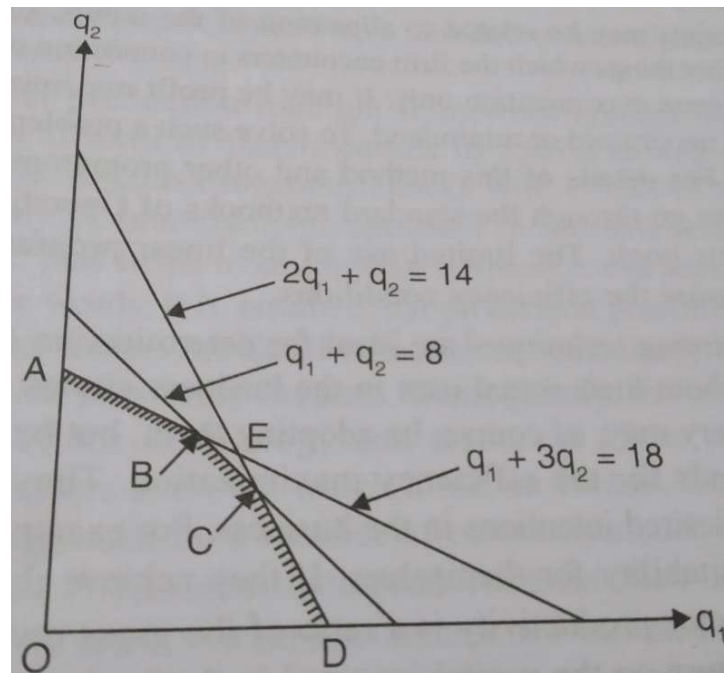


Fig. 10.3 Linear Programming

Each of the constraints, in this graph shows a boundary which the manufacturer cannot cross because of the fixity of the input. The area bounded by all the constraints that is $ODCBA$ is defined as the feasible area from which the combination of q_1 and q_2 outputs can be chosen. Any point inside this area will be feasible but inefficient since resource utilisation will not be full. Any point on the boundary $DCBA$ will be feasible and technically efficient showing full utilisation of at least one input. This boundary cannot be crossed. It is called Production Possibility Front. There will be only one point on this boundary which will be economically most efficient from the manufacturer's point of view. At this point the objective function will be tangent to the boundary. In this example the PPF is not continuous. It is discrete having linear segments. In this situation the point of tangency can only be at one of the corner points D , C , B , or A . Actually we need not draw the tangent. We just note down the coordinates (q_1, q_2) of these points. By substituting the coordinates in the revenue equation we can get the best one. The calculations are as follows:

Point	Coordinates (q ₁ , q ₂)	Revenue (R=10q ₁ +20q ₂)
D	7,0	₹ 70
C	6,2	₹ 100
B	3,5	₹ 130
A	0,6	₹ 120

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The manufacturer is getting maximum revenue at point B showing three units of product 1 and five units of product 2. Economically, this is the most efficient situation for the manufacturer.

The graphical solution as described above is possible if there are only two products to be produced. Suppose, there are n products and m constraints; then the linear programming problem can be formulated as

$$\text{Maximise } R = p_1 q_1 + p_2 q_2 + \dots + p_n q_n \quad \dots(i)$$

$$\text{Subject to } a_{11} q_1 + a_{12} q_2 + \dots + a_{1n} q_n \leq b_1$$

$$a_{21} q_1 + a_{22} q_2 + \dots + a_{2n} q_n \leq b_2 \quad \dots(ii)$$

$$a_{m1} q_1 + a_{m2} q_2 + \dots + a_{mn} q_n \leq b_m$$

$$q_1 \geq 0, q_2 \geq 0, \dots, q_n \geq 0 \quad \dots(iii)$$

Some of the m constraints may be related to allocation of the inputs, some to sales potential for the products and some to the other things which the firm encounters in connection with its business. The objective function need not to be revenue maximisation only. It may be profit maximisation or cost minimisation or anything else which is to be maximised or minimised. To solve such a problem there is an algebraic method known as simplex method.

Simplex Method: The graphical method can be used when only two products are produced. Simplex method can be used in care of 'n' products (choice variable) and 'm' constraints. This method involves extensive use of algebraic equations and their manipulation. Simplex method was developed by Geogrg B.Dantzig. Here initially, (i) one has to define the problem, variables identify and assign names to each variable to formulate linear programming problem. (ii) The linear objective function and the linear constraint as well as non-negativity conditions are stated formally. (iii) The inequality sign are transformed into equalities by adding slack variables. These are imaginary products corresponding to the amount of unused capacity of the constraint to which it is added. They will be zero, when production facilities are fully used. As these slack variables represent unused time, which yield no profit, these are added in the objective function with zero coefficient. (iv) Successive solutions are developed in systematic manner following an illustrative process, until the best solution is reached. The modify problem can be written as

$$\text{Maximise } R = p_1 q_1 + p_2 q_2 + \dots + p_n q_n - 0. s_1 - 0. s_2 - \dots - 0. s_m$$

subjects to constraints

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Total Productivity or Profitability Ratio:- It is true that the programming techniques are ideal for determination of the efficiency conditions but there is a big question their actual uses in the business circles. Few large corporations having sophisticated planning machinery may of course, be adopting them, but by and large the firm in general adopt their own ad hoc methods for efficiency maximisation. They select some performance indicators consistent with their desired intentions in the business. For example, firms set some target for total factor productivity or profitability. if the target is achieved, a firm may be called as efficient, otherwise not. Total factor productivity is a ratio of the gross revenue divided by the total cost of production. Profitability is the return on the capital invested in business. The choice of the indicators for the efficiency or performance measurement depends on the goal of the firm.

Econometric Method: The use of economic method for measuring efficiency is most difficult, elegant and scientific in nature. it is based on economic reasoning, models are specified to measure technical and business efficiencies of the firms and industries separately quantitative estimation of the parameters and other properties of the model provide fairly reliable estimates of the efficiencies both for the firms and industries.

The estimation of technical efficiency is generally done by using production functions. For this purpose, the production frontier is estimated under lying a sample of firm in the industry. This may be done by using the maximum likelihood or corrected grindery least square method with specified distribution pattern. Different types of production functions like the Cobb Douglas or the CES or the translate functions may be used for this purpose. The use of cost functions for estimating technical inefficiencies is also an alternative way available for empirical work. Once the frontier is estimated efficiency of individual units can be measured on the basis of the actual shortfall output from the estimated frontier.

Economic or business efficiency is another aspect of industrial efficiency. Its measurement by using economic method is as complex as that of the technical efficiency. It is based on the relationship between the performance variable like profit rate and its determinants. Depending upon the goals of the firm, the performance variable is chosen and the determinants are identified through proper economic arguments. These determinants include market structural variables, firm specific variables, managerial as well as organisational variables and a number of dummies to take into account several qualitative variables affecting the efficiency of the firm.

Check Your Progress

3. Which type of efficiency is focussed upon in case the organization unit is engaged in the production and disposal of a commodity for some desired purpose?
4. Define factor price efficiency.
5. Who developed the simplex method?

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10.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Productivity is computed by dividing output by input or total costs incurred or resources (capital, energy, personal, material etc.) consumed.
2. There are twin benefits of improving productivity: helping the economy grow as well as benefitting the participants in the process.
3. If the firm is organisational unit engaged in production and disposal of a commodity for some desired purpose, then the emphasis will be on achieving 'business' or 'economic efficiency.'
4. Factor price efficiency is the second element of productive efficiency. It measures the skill in achieving the best combination of the input by considering their relative prices.
5. Simplex method was developed by Geogрге B.Dantzig.

10.5 SUMMARY

- Productivity is the main basis of modern industrial and economic development. Every country wants to make rapid industrial development. industrial development depends on the productivity of industrial units.
- Productivity means reaching the optimum level of performance with the minimum expenditure of resources. In India productivity is very low due to Lack of Industrialisation, outdated techniques, Labour Intensive Technique of Production bad working condition Political intervention etc.
- In a static sense, efficiency is the extent to which production occurs at minimum cost while in the dynamic or progressive sense, efficiency indicate the rate of technological progress.
- Industrial efficiency has several dimensions such as productive efficiency, economic efficiency. Productive efficiency has two elements technical efficiency and factor price efficiency.

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- The technical efficiency defines as the degree of economy in input utilisation to produce a given level of output.
- Factor price efficiency measures the skill to achieve the best combination of the inputs by considering their relative price.

10.6 KEY WORDS

- **Productivity:** It means reaching the optimum level of performance with the minimum expenditure of resources.
- **Efficiency:** It is the extent to which production occurs at minimum cost.

10.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What do you mean by productivity?
2. What do you mean by capital productivity?
3. Define labour productivity.
4. Define productive efficiency.

Long Answer Questions

1. Define the term productivity. What are the popular misconceptions about productivity?
2. Explain the concept of industrial efficiency. What are its various dimensions?
3. Discuss the components of productive efficiency. Use diagram to show the productive efficiency.
4. How can efficiency level be measured? Explain various methods in details.

10.8 FURTHER READINGS

- Clarke, Roger. 1985. *Industrial Economics*. New York: Basil Blackwell.
- Barthwal, R.R. 1995. *Industrial Economics*. New Delhi: New Age International.
- Smith, D.M. 1971. *Industrial Location: An Economic and Geographic Analysis*. New York: John Wiley.
- Ahluwalia, I. J. 1985. *Industrial Growth in India*. New Delhi: Oxford University Press.

UNIT 11 CAPACITY UTILISATION

Structure

- 11.0 Introduction
- 11.1 Objectives
- 11.2 Meaning of Capacity Utilisation
 - 11.2.1 Importance of Capacity Utilisation
- 11.3 Measures of Capacity Utilisation
- 11.4 Answers to Check Your Progress Questions
- 11.5 Summary
- 11.6 Key Words
- 11.7 Self Assessment Questions and Exercises
- 11.8 Further Readings

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11.0 INTRODUCTION

The theory of cost under micro economics defines capacity as the output at which the short and long average cost curves are tangent to one another. Given constant returns to scale, this occurs corresponding to the minimum point of the short-run average cost curve. Johansen (1968) defines capacity output as, 'The maximum amount that can be produced per unit of time with existing plant and equipment, provided that the availability of variable factors of production is not restricted.' In this unit, you will learn about the meaning, importance and measures of capacity utilisation.

11.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain the meaning of capacity utilisation
- Discuss the importance of capacity utilisation
- Describe the measures of capacity utilisation
- Examine the problems and causes of under-utilisation

11.2 MEANING OF CAPACITY UTILISATION

Capacity is a vague and hard to measure concept which varies over time and according to economic conditions. Capacity utilisation is a measure of the degree to which the productive capacity of a firm or industry is being used. It is a relationship between output that is produced and the potential output which could be produced. Capacity utilisation is the percentage of total capacity that is actually being achieved in a given period.

Capacity utilisation can be calculated by using the following formula-

$$\text{Capacity utilisation} = \frac{\text{Actual level of output}}{\text{Maximum possible output OR total Capacity}} \times 100$$

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We can explain it with the help of an example. For an example, there is a production unit in which a production line has been design capacity of 15000 units a day the line is currently running one shift and producing only 970 units per day.

$$\text{Capacity utilisation} = \frac{970}{15000} \times 100 = 64.66\%$$

Capacity utilisation rate for a firm, an industry or an economy is the percentage of actual output to its sustainable maximum output. Exceptionally, this rate may exceed 100 percent for a firm or an industry, when temporarily attainable peak production exceeds sustainable maximum production. However, for the economy as a whole, capacity utilisation does not reach the limit of 100 percent as different firms reach their peaks at different stages of economic cycle. Further bottleneck in one industry restrict supply and hence output in another. For example, during boom face of the business cycle, a shortage of raw-material can limit output of certain consumer durable restricting capacity utilisation in those industries.

11.2.1 Importance of Capacity Utilisation

Capacity utilisation is an important concept to measure the productive efficiency of the plant. The variation in the extent to which existing capacity is being utilised indicates as to how the supply by a particular firm, industry or economy responds to its demand. The concept of capacity utilisation is particularly important for a developing country like India suffering from acute shortage capital. Here, a better utilisation of the existing capacity makes growth possible without the need for an additional investment of capital or labour. It has been empirically tested and verified that more than half the growth in output is attributed to higher productivity. Better utilisation of existing capacity reduces the cost of production (by bringing the output closer to the minimum point of the average cost curve) and improves the productivity as well as profitability of the business entity.

Let us examine the impact of capacity utilisation in the modern business cycle theory, especially the one based on the version of accelerator principle. It is common to observe the regular pattern of expansion and contraction in the business cycle. It seen that there is an increase in the employment factors of production in the expansion phase which in turn points towards higher use of existing capacity. Consequently, incomes increases creating additional demand, resulting in even greater utilisation of existing capacity and the process continues. This is referred to as the 'multiplier effect'. If the producers are confident that the demand will remain buoyant, they come up against the capacity constraints. They start creating more capacity by investing in new plant and machinery, which generates more demand. This is known as the accelerator effect. The upward trend in the economic activities cannot continue for an indefinite period. Ultimately, the output reaches a

ceiling due to bottlenecks and supply constraints. Increased demand for investment funds may push up interest rates to the level where new investment is no more profitable. Consequently, the investment demand decreases. A fall in investment demand pulls back the level of total output. On account of decline in the investment demand, the producers of capital goods start displacing labour. The higher unemployment of labour reduces the consumer demand. As a result, there is seen an opposite directional movement of the multiplier expectations and accelerator principles. And so is seen a momentum in the economic contraction.

But it is crucial to keep in mind that there is no indefinite time period for which the decline in output will continue. Moreover, it is quite possible that at some minimum level, it will finally stop as employees start retaining jobs and spending more. The employees might find work in secure jobs with Government or in industries which supply essentials. The welfare payments, past savings and new borrowings enable other consumer to buy these essentials. Additionally, the slowing demand for investment funds may again bring back the interest rates making new or replacement investment more attractive. Given steady consumer demand, the investment demand begins to better the economy.

Apart from this, the concept of capacity utilisation signals inflationary pressures. For example, a strong economic growth coupled with high capacity utilisation indicates inflationary trends. When the capital utilisation rate for the economy is near its maximum level, any rise in demand will not lead to higher output, unless producers undertake additional investment. In such situation, higher demand puts direct pressure on the prices since the supply of output has already reached the maximum.

11.3 MEASURES OF CAPACITY UTILISATION

Capacity utilisation rates often fluctuate due to external shocks, macroeconomic policies of the government, fixed investment and inventory cycles. There is thus a justification to understand various measures of capacity utilisation.

1. **Survey Based Measures:-** Under this method, we obtain numerical capacity utilisation ratios directly by asking firms for their own assessment of the extent to which they are using available capacity. Almost every industrial country includes this question in monthly surveys of business. In India too, the firms are obliged to publish information (in terms of physical units of measurement) on installed capacity and actual production of various products that they produce in one of the schedules of their annual report. These are currently the most accessible and timely indicators of capacity utilisation for India.
2. **Peak to Peak Measure:-** The actually realised level of output over a period of time is used under this method to calculate the degree of utilisation of all inputs. Therefore, the full utilisation of resources is reflected through

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the relative periodic peaks. When these peaks are joined together through a straight line, which can be extrapolated beyond the most recent peak, the path of capacity output is found. Then the ratio of the actual output and capacity output shows the numerical capacity utilisation measure. The main benefit of this method is that it computes capacity utilisation by using data only on output and not on inputs. In general, data on input is available at much lower frequency and only with a considerable time lag.

- 3. Production Function Measure:-** The capacity utilisation in this approach is measured through the sectoral or industrial application of the economic theory of production. The production function method shares similarity with the peak-to-peak methodology with the common goal of trying to measure the level of output that could be produced if all available inputs were being fully utilised. However this method demands specification and estimation of certain functional relationship between inputs (labour and capital), the state of technology and output. When production function for a sector or an industry is estimated, capacity of output can be calculated by evaluating at a point, where all resources are fully utilised. Unlike the previous two measures, this measure facilitates the decomposition of change in capacity output into its components, i.e. capital stock growth, technological progress and growth of potential labour supply.

Check Your Progress

1. Why does the capacity utilisation for an economy not reach the limit of 100 percent?
2. State the reason for the concept of capacity utilisation being particularly important for developing countries.
3. Mention the main benefit of the peak-to-peak method.

11.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. For the economy as a whole, capacity utilisation does not reach the limit of 100 per cent as different firms reach their peaks at different stages of economic cycle.
2. The concept of capacity utilisation is particularly important for a developing country like India suffering from acute shortage capital. Here, a better utilisation of the existing capacity makes growth possible without the need for an additional investment of capital or labour.
3. The main benefit of this method is that it computes capacity utilisation by using data only on output and not on inputs. In general, data on input is available at much lower frequency and only with a considerable time lag.

11.5 SUMMARY

- Rapid growth in industrial productivity and structural transformation is recognised as an essential element. Industrial productivity measures the amount of output that is produced with given amount of factor inputs.
- The growth in productivity is a broader concept encompassing the effect of many factors such as better utilisation of existing capacities, improved skills of labour etc. capacity utilisation is a critical determinant of growth in productivity.
- Capacity output occurs corresponding to the minimum point of the short run average cost curve. Capacity utilisation rate for a firm, an industry or an economy is the percentage of actual output to its sustainable maximum output.
- A better utilisation of the existing capacity makes growth possible without any additional investment of capital or labour. Capacity utilisation reduces the cost of production and improves the productivity as well as profitability and efficiency of the firm.

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11.6 KEY WORDS

- **Capacity utilisation:** It is a relationship between output that is produced and the potential output which could be produced.
- **Under-utilisation of capacity:** It refers to a condition where the resources are available but the resources are not used inefficiently in the production process.
- **Business cycle:** It describes the rise and fall in production output of goods and services in an economy.

11.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What do you mean by capacity utilisation?
2. What is multiplier effect?
3. What is accelerator effect?
4. What is output gap?

Long Answer Questions

1. What is the significance of capacity utilisation? Explain the various measures for better capacity utilisation.
2. What do you understand by under utilisation of capacity? Discuss the causes of under utilisation of capacity.

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11.8 FURTHER READINGS

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UNIT 12 INDUSTRIAL POLICY IN INDIA

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Structure

- 12.0 Introduction
- 12.1 Objectives
- 12.2 Introduction to Industrial Policy
- 12.3 Industrial Policy Resolution, 1956
- 12.4 Industrial Policy, 1977
- 12.5 Industrial Policy Statement, 1980
- 12.6 Industrial Policy, 1985
- 12.7 New Industrial Policy, 1991
- 12.8 Performance of Industrial Development Since Independence
- 12.9 Answers to Check Your Progress Questions
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12.0 INTRODUCTION

Industrialisation has a major role to play in economic development of a country. It is key to economic development. Releasing this growth strategy of our five-year plan laid emphasis on the development of industries.

Prior to Independence in 1947, India was a dependency of the United Kingdom which consisted of British India, and the Princely States. The British rule in India resulted in colonization and systematic exploitation of the Indian economy in their efforts to convert India into a market for their manufacture; the British destroyed India's own manufacturing industries. Liberal imports and machine-made goods led to decline of domestic handicrafts causing unemployment. There was no clear-cut industrial policy of India prior to independence. The British government was not enthusiastic about Indian industry and wanted it to be exporter of raw material and importer of manufactured goods at the same time, and therefore, it adopted a very indifferent policy towards industrial development of India. India was typically backward economy in terms of industrialization at the time of Independence. The arrested industrial development of India during the 19th century and first half of 20th century was more a consequence of her political dependency to Britain rather than of her own cultural heritage.

12.1 OBJECTIVES

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After going through this unit, you will be able to:

- Explain the meaning of industrial policy
- Discuss the evolution of industrial policy in India
- Describe the industrial performance after independence

12.2 INTRODUCTION TO INDUSTRIAL POLICY

At the end of British rule industrial economy of India had the following features:

- Industrial structure was weak,
- Heavy dependence on import of manufacturing goods;
- Government initiatives was limited
- Industrial activities were limited. And only few business communities were engaged in modern industrial activities.
- Capital goods sector was ignored

The country became quite independent to shape its economy according to its requirements but unluckily the country was surrounded by many economic problems namely inflationary tendency on account of war, problem of renovation and modernization, problem of right direction, problem of unemployment. Due to these problems, there was all-round atmosphere of uncertainty due to which the foreign capital began to be withdrawn and the private entrepreneur stopped the investment of capital as they were quite indefinite about the future shape of Indian industrial policy after independence. In the absence of industrial policy, the main industrialists were demanding complete autonomy of private sector but the labour was drying for full nationalization of industries on the other hand. Therefore, under these circumstances the government thought it fit to announce a clear-cut industrial policy in order to remove doubts from the minds of entrepreneurs and to set out guidelines for industries. For this, government of India convened a meeting which conclude that the government should announce an industrial policy.

Industrial policy is an important instrument through which the government regulates the industrial activity in an economy. Industrial policy includes all those method, principle, policies and regulations which control the industrial institutions and at the same time determine the nature of industrialization. The objectives of industrial policy are to exhibit government's financial, monetary, taxation and foreign aid policies. The main aim of industrial policy is to direct the pattern of industrial development and the speed of industrialization in accordance to the economic programme of the government. Therefore, industrial policy spells out the role of government in the development of industries, role of public enterprises, and role of private enterprises, etc.

India, being a mixed economy, the development of industries lies in the hands of both state and the capitalists. There should not be any overlapping of activities. There ought to be proper co-ordination and cooperation between privates and public sectors. It is essential for India to have a well-defined industrial policy, which would make a clear-cut demarcation between public and private sectors activities. In the following sections, we will have a look at the different major industrial policies of our country.

Industrial Policy Resolution, 1948

The first important industrial policy statement was made in the industrial policy resolution, 1948 issued by the government of India on April 6, 1948. The policy was prepared on the basis of mixed economy by Dr. Shyama Prasad Mukherjee, the then Minister of Industries and Civil Supplies. The major objective of the policy were as follows-

1. To establish of a social order to ensure justice and equality or opportunity to all the people.
2. Exploitation of available resources of the country.
3. Increase the production of both agriculture and industrial sector.
4. Creation additional employment opportunities.
5. The demarcation of the economic activities of the public and private sector.
6. The regulation of private sector.

Salient Features of Industrial Policy, 1948- The main features of Industrial Policy Resolutions 1948 were as under:-

1. Mixed Economy

The resolution accepted the importance of both private and public enterprises in industrial economy. The policy laid foundation of mixed economy in which both sectors would match hand in hand to accelerate the pace of industrial development.

2. Division of Industrial Sector

It divided the industries into the four categories:

- (a) Industries where states had monopoly:** In this category, three field of activity were specified arms, ammunition and automatic energy and rail transport. The expansion, development and new construction of these industries was directly under the ownership and control of the state authority.
- (b) Mixed Sector:** This sector included particular industries like wireless apparatus, coal, manufacture of telephone, steel, telegraph, coal, mineral oils, steel and iron. The newer industries in this sector were established by the state and the existing private ones were put under review for 10 years, on the completion of which their status was to be decided after making compensation on fair and equitable basis.

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(c) The sector of government control: Eighteen industries of national importance were included in this category. The government did not undertake the responsibility of developing these industries but considered them of such importance that their regulation and direction was necessary. Some of industries included were heavy machinery, electrical engineering, heavy chemical, automobile, machine tools, fertilizers, non-ferrous metals, rubbers, cement, sugar, textiles, papers, sea transport etc.

(d) The Field of Private Enterprises: All other industries were left open to private sector. However, the state could take over any industry in this sector also if its progress was unsatisfactory.

3. Role of Small and Cottage Industries

The 1948 resolutions also accepted the importance the small and cottage industries as they particularly suited for the utilization of local resources. These industries offer opportunities for work to large number of persons and help the process of decentralization of industries which is necessary in the country.

4. Harmonious Relation between Management and Labour

It recognized that fair working conditions for labour were necessary for harmonious relation between management and labour. It emphasized the need for evolving machinery which would ensure congenial working atmosphere.

5. Foreign Capital

The Industrial Policy Resolution, 1948 laid down that a free flow of foreign capital would be welcome since it would ensure the supply of capital goods and technical knowhow. The Government gave the following assurance to foreign investors:

- There will be discrimination between foreign and Indian undertaking in the application of general industrial policy.
- Reasonable facilities and
- In the event of nationalization, fair and equitable compensation will be paid.

6. Measures for Increasing Industrial Production

Among others, the Industrial Policy Resolution 1948 laid emphasis upon a policy of social justice, fair wages, increasing participation of labour in industrial affairs. The government of India also decided to create suitable administrative machinery at central regional and unit level.

Limitations of Industrial Policy Resolution 1948 – Some limitations of Industrial Policy Resolutions 1948 were as follows:-

- 1. Absence of Direction-** There was misdirected enthusiasm about the nationalization of industries without adequate resources and systematic priorities.

2. **Absence of Coordination-** There was lack of co-ordination between the centre and states in regard to nationalized industries. Certain industries were nationalized earlier than was reasonably expected in terms of industrial policy.
3. **Discouragement of Private Sector-** The private sector was allowed to play only a limited role in the industrial development. There was an all-round feeling of uncertainty in the minds of industrialists, this hindered capital formation and growth of industries in the economy.
4. **Inefficient Administration of the State Enterprises-** The state enterprises were set up without proper arrangements for efficient administration. It was feared that the state enterprises will suffer from red-tapism, corruption and mismanagement.

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12.3 INDUSTRIAL POLICY RESOLUTION, 1956

The Industrial Policy Resolution of 1948 was declared immediately after independence. Thereafter, many changes came in economic, social and political life and made it indispensable that a new and suitable Industrial policy be formulated. Jawaharlal Nehru announced the New Industrial Policy on 30th April 1956. It was a socialist, progressive, and well-defined policy. Objectives of this policy were more comprehensive and developmental. The main objectives of the government were to establish socialists pattern of society through rapid development. The 1956 resolutions laid down the following objectives of the industrial policy:

- To accelerate the rate of growth and to speed up industrialization
- To develop heavy industries and machine making industries
- To expand public sector
- To reduce disparities in income and wealth
- To build up a large and growing cooperative sector
- To prevent monopolies and concentration of wealth and income in the hands of a small number of individuals
- To generate more employment opportunities
- To establish cordial relationship among the workers and owners
- To improve the working conditions of workers
- To establish industrial balance

The Features of Industrial Policy 1956: The main features of the policy 1956 as under:

1. **New Classification of Industries:** Industries were classified into three schedules depending upon the role of the states.
 - (a) **Monopoly of the state:** In this category, seventeen industries were included whose future development was exclusively responsibility of

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state. These seventeen industries were listed in schedules A appended to resolutions. Out of seventeen industries, for industries –arms, ammunition, atom energy, railways and air transport were to be government monopoly in the remaining 13 industries, new units were established by the state but existing private units were allowed to subsist and expand. New units in the private sector could also be allowed when the national interest so required.

(b) Mixed sector of public and private enterprises: In this section, 12 industries listed in Schedules B (appended to the Resolution) were included. These were all other minerals, road transport, sea transport, machine tools, ferro-alloys, non-ferrous, metals, fertilizers, drugs, and pharmaceutical, plastic, synthetic rubber, tool steels, basic and intermediate products required by the chemical industries, etc.

(c) Industries left for private sector: All industries not listed in schedule A & B are included in third category. These industries left open to the private sector, their development was to depend on the initiative and enterprise of the private sector. In this category state could start any industry in which it was interested.

The 1956 resolution emphasizes the mutual dependence of private and public sectors. Only four industries in which private sectors was not allowed to function were arms, ammunition, atom energy, railways and air transport. In all other industries either the private sector was allowed to operate freely or its help could be obtained if the government deemed fit. The fact is that the basic objectives of both resolutions were the same strengthening the mixed economy of the country.

2. Stress on the Role of Cottage and Small-scale Industries (SSI): The 1956 resolution recognized the critical role of cottage and SSI in economic development of the country. It was felt that cottage and SSI will remove unemployment, fully utilize the local resources and bring equal distribution of national product. The government took appropriate measures to help SSI, namely:

- (a) To establish industrial estates and rural composite workshops
- (b) To remove their difficulties and problem and
- (c) To improve their production techniques

3. Reduction in Regional Disparities: The disparity in the level of development between different regions was progressively reduced. Facilities for development were made available to the industrially backward areas. To achieve regional balance, the government decided to provide adequate facilities of electricity, water and transportation so that the employment opportunities would increase.

4. Emphasis on Industrial Peace: The need for maintenance and promotion of industrial peace and cordial relations between employers and employees

was stressed. Reasonable wages, good working conditions and participative management were given emphasis.

5. Technical Education and Training: The programme of industrial development will make large demand for the country's resources of technical and managerial personnel to meet these rapid growing needs the industrial policy emphasized the need for establishing proper managerial and technical cadre.

6. Foreign Capital: The resolution also decided to continue with the existing policy towards foreign capital. The Industrial Policy Resolution 1956 provided the framework within which the programmes of industrial development during the second and third plans would be taken up.

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Critical Evaluation of Industrial Policy Resolution, 1956

1. Maximum stress was laid on state enterprises, no matter whether there was any proved necessity for that or not.
2. If industrial policy resolution 1956, provided a clue for the government thinking about industrial policy, then it could ultimately lead to extinction of entrepreneurial activities in the country which could not at all be a wise policy for the country.
3. Under the resolution a provision was made for the co-operative sector to grow, but even in this sector the guiding force was the government and not the elected representatives of the industry. The ultimate outcome of such a policy would be state capitalism, with all its evils.
4. It has been said that it has considerably reduced the scope for private industry.
5. It was also said, that though the state was becoming over ambitious to undertake more and more enterprises. Yet in actual practice, it had no competence to run the industry on commercial lines.
6. Then if the policy enunciated in the resolution is strictly followed, administrative and financial resources of the state which were already overstrained will get much more heavily strained.
7. In it no field has been left safe for private sector undertaking. Thus, private sector was given only subordinate role and not predominant role.
8. The neglect of the private sector and subordinate position given to this sector in industrial development clearly showed that the Resolution was influenced more by ideology and less by pragmatism.

But inspite of all these weaknesses, it cannot be denied that the resolution was comprehensive and tackled almost every aspect of industrial activity of the country. Such important problem as labour relations with management and role of foreign capital in development of industry were clearly discussed and a clear policy was laid down about these matters. It is in its comprehensiveness that real strength of this resolution lies.

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Check Your Progress

1. List some of the economic problems which discouraged industrialization in India on becoming independent.
2. Who prepared the Industrial Policy Resolution, 1948?
3. How were industries classified as per the Industrial Policy Resolution, 1956?

12.4 INDUSTRIAL POLICY, 1977

Although the first and second industrial policy remained helpful in making the adequate industrial development, yet there were some shortcomings in Indian economy. The industrial policy 1956 was not working according to the circumstances prevailing in the country because during a span of two decades since second industrial policy, the following weakness have come into existence:

- i. Comparative low rate of economic development;
- ii. Increase in unemployment;
- iii. Low rate per capita income;
- iv. Increase in regional disparities;
- v. Existence of industrial weakness;
- vi. Disparities in Rural and Urban areas;
- vii. Irregularity in cost and prices
- viii. Concentration of economic power;

The above shortcomings necessitated the introduction of new industrial policy so as to accelerate the rate of industrialization. In the meantime, in February 1977, general elections were held in the country as a result of which 30-years-old congress party was dislodged from power and new Janta government was saddled in authority. The party from very beginning laid stress on small-scale and cottage industry. On October 1977 the then Industry Minister, Mr. George Fernandes announced New Industrial Policy.

Salient Features of the Industrial Policy, 1977: The main features of the policy 1977 are as under:

- 1. Small-Scale and Cottage Industries-** The stress of the new industrial policy was on small-scale and cottage industries. It planned to utilize country's massive manpower to promote small-scale industries, aimed regional dispersal of factories and tight control over large industrial houses and foreign firms. Number of items reserved for production by small-scale units was 504. It was decided that no industrial license will henceforth be given for any new industry within the limit or more capacity will be created either in the mill or powerloom sector for textile production. Compulsory export

obligations were abolished. Consistent with plan priorities all quantitative restriction on imports were lifted.

Cottage industries were to be given special protections such tiny units which were located in area with a population 50,000 and with investment below Rs 1.00 Lakh were to be given special consideration, financial assistance and other facilities. The policy statement recognises that the development of agriculture and small scale industries and large scale industries are interrelated.

- 2. Public Sector-** Industrial policy 1977 accepted that the public sector 'has come of age' providing countervailing power to the growth of large houses and socializing the means of production in strategic areas. The public sector will continue to expand not only in basic and strategic industries but also in consumer goods to ensure essential supplies. It will help develop ancillary units and other small industries.

In industrial policy 1977 large houses were no longer restricted just to a list of priority industries and export-oriented industries where they export at least 60 percent of output for five years, it has been observed that their being limited to capital- intensive industries has merely speeded up their growth. As for export-oriented ones, there was a time when foreign exchange was regarded as so scarce as to get very high priority and large houses were sometimes allowed to enter areas reserved for the small-scale sector on export grounds, even though the commitment was valid only for five years.

- 3. Compulsory Export Obligations-** In future compulsory export obligations will no longer be imposed merely to ensure the exchanged balances of such projects. At the same time a commitment to export will no longer be given such a high weightage when clearing a project. In special case, the policy may still be relaxed for export-oriented projects, but the period of export obligation will have to be much longer than five years.
- 4. Policy Toward Foreign firm-** As regards foreign companies, the Foreign Exchange Regulation Act (FERA) will be enforced strictly. However, companies which diluted their holdings to 40 percent will thereafter be treated at par with Indian companies except in case specially notified. The government felt the need for continuing import of technology, which should then be adopted and further developed in India. The government's preference was for outright purchase of technology, though it will also consider licensing agreement on a royalty basis and direct equity participation by foreign companies. A new approach to foreign collaboration is being evolved. Hitherto the government has based its policy on three lists:
 - Where foreign collaboration was banned.
 - Where foreign equity investment was permitted.
 - Where technical collaboration was permitted.

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The list contains very general industry descriptions with distinguishing which items in a particular category need foreign collaboration and which do not. The industrial policy stated- 'in areas where foreign technological know-how is not needed, existing collaborations will not be renewed.' The policy stated further elucidated: 'As a rule majority interest in ownership and effective control should be in Indian hands though the government may make exceptions in highly export-oriented and/or sophisticated technology areas. In hundred percent export-oriented cases the government may consider even a fully owned foreign company.'

5. **Approach towards Sick Units-** Sickness in industry has been a disturbing feature recently. The government could not go on taking over sick units, and will do so only very selectively. The objective will be to nip sickness in the bud by better mentioned in the statement.
6. **Establishment of District Industries Centres-** District Industries Centres were to be created in every district which were to provide different forms of help under one roof. The centres were to have close links with development blocks, banks and specialized institutions.
7. **The new policy stressed the need to continue to both export and import industrial goods.** The favourable foreign exchange situation has made it possible to lift quantitative restrictions on imports while retaining tariff protection. Import were relaxed where restrictions were hurting rather helping industries by delaying critical projects and raising cost. Indian firms were given all possible assistance in improving their technology and competitive position.
8. **Worker's participation-** The need for worker's participation in management, streamlined administrative procedures, development of indigenous technology and establishment of joint ventures abroad were mentioned in the statement.
9. To encourage dispersal of industry non-industrial licenses were to be given to new units in urban complex with a population of over 5,00,000 as per the 1971 census. As industries exempted from licensing, state governments and financial institutions were told to deny support to such units. The government will also consider giving financial assistance to industries wanting to shift from metropolitan areas to backward areas.
10. Price policy of the government was to ensure reasonable price stability as well as sufficient surpluses to give adequate return to the investor. Excessive profits were not to be permitted to firms working in monopolistic conditions. But profits should be enough to enable large houses to expand on the basis of internal resources.

12.5 INDUSTRIAL POLICY STATEMENT, 1980

With the downfall of Janta Government in 1980, the government of congress came into power. On 23 July 1980, the industry minister Mr. Charanjeet Chamma declared industrial policy 1980 based upon the adequately the values of our country and said-‘The industrial policy announcement of 1956 in fact reflects the value system of our country and has shown conclusively the merit of constructive flexibility. In terms of this resolution, the task of raising the pillars of economic infrastructure in the country was entrusted to the public sector for reasons of its greater reliability for the very large investments required and the longer gestation periods of the projects crucial for economic development. The 1956 resolution, therefore, form the basis of the statement.’

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Objective of Industrial Policy statement 1980- Following are the objectives of industrial policy statement 1980-

1. Optimum utilization of the installed capacity;
2. Higher employment generation;
3. Maximum production and achieving higher productivity;
4. Preferential treatment to agro-based industries;
5. Correction of regional imbalance through preferential development of industrially backward areas;
6. A faster promotion of export-oriented and import substitution industries;
7. Consumer protection against high prices and bad quality;
8. Equitable distribution of investment and dispersal of returns among growing units in rural areas.

Main Features of Industrial Policy Statement, 1980- Following are the main features of industrial policy statement 1980-

- 1. Re-orientation of Public Sector-** Undertakings in the public sector will be closely examined and corrective actions be taken to revive their efficiency priority will be accorded to convert losing public sector undertaking into viable ones by providing them a dynamic and competent management.
- 2. Promotion of Small-Scale Industries-** In order to boost the development of the small-scale industries it has been decided to increase the limit of investment in case of tiny units from Rs. 1 lakh to Rs 2 lakh, in case of small scale units from Rs. 10 lakh to Rs 20 lakh and in case of ancillaries from Rs. 15 lakh to Rs 25 lakh. These measures will facilitate the long over modernization of many of the existing small-scale units.
- 3. Assistance for the growth of the Private Sector-** The private undertakings will be allowed to develop in consonance with target and objectives of national plans and policies, however, growth of monopolistic

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tendencies would not be permitted industries will be given performance-oriented incentives.

- 4. Sick Units-** With regards to sick units, the policy proposes to deal firmly with the units, involved in deliberate mismanagement and financial improprieties leading to sickness of the units. The existing sick units which show an adequate potential for revival would be encouraged to merge with healthy units.
- 5. Industrial Relations-** In order to maintain industrial peace, the tripartite labour conference would be resorted.
- 6. Social Responsibilities of business-** The new policy statement attaches importance to the social responsibility of business, particularly in term of maintaining the price line, avoiding hoarding and speculation and maximizing production on an efficient basis.
- 7. Facility of Expansion of Capacity-** The policy provides not to restrict the full utilization of installed capacity of such industrial units as have importance in national economy. Such industrial unit can raise their capacity by 25 percent additionally. This facility shall apply to all the industries mentioned in the first schedule of the Industrial Development Regulation Act.
- 8. Energy Policy-** The policy stressed on the exploration of new sources of energy. It also provided to reduce the pollution of air and water.
- 9. Encouragement to Research and Development Programmes-** The policy specially describes for the import of technical know-how by the companies which have set up food institutions for research and innovation so that the rate of acceleration may be speed up.
- 10. Modernization-** The policy provides for modernization of various industries according to their requirement but it is necessary to keep in view the maximum utilization of power, technical know-how and suitability of size.
- 11. More Stress on Social Responsibility of Industrial Enterprises-** The Government assured to assist the industrial units in public sector and it would also expect that such enterprises, would fulfil their social responsibilities well. To achieve the objective, it would be the responsibility of industrial units that the prices of their product would not give rise to hoarding; speculation would not occur and the quality of their product would remain superior.
- 12. To Declare Illegal Additional Output Capacity as valid-** This policy provides for legalization of the additional output capacity utilized in private sector. On 29th August, 1980 the government of India made a special declaration that additional output capacity compared to installed capacity shall be treated as valid.

An Evaluation – Industrial Policy 1980- The new industrial policy intended to follow a pragmatic. The pragmatic approach of new industrial policy was removing constraints to industrial production by revising the definition of small industries, regulation of installed capacity beyond the licensed capacity, a scheme of automatic expansion of capacity. It would be of much interesting to examine the implications of the new policy measure.

1. The new industrial policy obliterated ‘the artificial divisions between small and large scale under misconception that their interests are essentially conflicting’.
2. Genuine small industries which are labour intensive were not able to stand in competition with the superior small and ancillary units which though capital-intensive, may be drawing all the benefits available for small-scale units.
3. Industrial policy 1980 failed to initiate many measures both on the employment and the production front.
4. The revised definition which raised the limit of investment served as an invitation to businessmen to set up multiple units often brazenly under the same factory roof, to claim the concessions available to small units as well as to evade labour laws applicable to large units.
5. The government’s recent industrial policy statement has marked the reversal of the process of rapid economic development through economic decentralization. It has given an ‘Open General Licence’ to Indian monopolists and foreign multinational corporations to eliminate the small business at the village, cottage and small sector level.

Broadly speaking the industrial policy chose a more capital-intensive path of development and thus, it underplays the employment objective. The policies of economic decentralization introduced by the Janta party government have been reversed and under the guise of maximizing production the ends of big business and monopoly capital are being served. Redefinition of small-scale industries, regulation of installed capacity beyond the limit of licensed capacity and scheme of automatic expansion have opened up doors for large and big business. The objective of curbing concentration of economic power through the agency of MRTP commission were pushed back wards in the scheme of priority in the new industrial policy.

12.6 INDUSTRIAL POLICY, 1985

With a view to accelerating the rate of economic development, raising the industrial productivity and maximizing the utilization of natural resources, the government of India made many major decisions.

Objectives of Industrial Policy 1985: The main objectives of the Industrial Policy 1985 were:-

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- i. Removing the constraints in the path of economic development,
- ii. Creating dynamic industrial atmosphere.
- iii. Accelerating the rate of industrial development, investment and production.

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Features of Industrial Policy 1985: Some important features of Industrial Policy are as under mentioned:-

1. Classification of Industries: To encourage production and to provide flexibility to the manufacturers to adjust their product mix depending on the market demand, the concept of broad banding was introduced in a large number of items. Some of these are machine tools, motorized two wheelers, motorized four wheelers, paper and paper-pulp, chemical, pharmaceuticals, petrol-chemical and fertilizer machinery industry and entertainment electronics.

The advantage of broad banding was that licenses issued in terms of broad categories would enable to give undertaking to manufacture any type of items covered so long as total production did not exceed the overall licensed capacity.

2. Exemption of Licensing to Industries: The policy changes of 1985 envisage the need for the industries to grow at rapid pace, achieved economies of scale and undertake modernization which signifies the introduction of latest technology. With this end in view, the scheme for re-endorsement of capacity was liberalized, automatic increase was guaranteed to units wanting to achieve economies of scale and a 49% rising capacity due to modernization was allowed. On 30th January 1986, the government decided to de-license 23 industries for MRTP and FERA companies provided the industrial undertaking is located any of the centrally declared backward area.

3. Exemption from Licensing for Establishment of Industries in Backward Area: The Central Government is stressing on the establishment and development of industries in backward areas. No licence is required to establish industries in Backward Areas. As per Section 21 and 22 of the MRTP Act, 27 industries were exempted from taking Licence in May 1985. This exemption was enforced in Dec. 1985 on 22 industries provided that the industries were set up in Backward Areas.

4. Increase in the Investment Limit of Small-scale Industries: In order to encourage small-scale industries, the limit of capital investment was enhanced from 20 lakh to 35 lakh and the limit in case of ancillary industries was raised from 25 lakh to 45 lakh .

5. Participation of Non-Government Sector in Tele-Communication Equipment Industries: Tele-communication industries could be established and carried on in public sector only. But the government decided that the co-operation of private sector could be sought provided that atleast 51

percent of the share capital should be contributed by the central and state government. In addition, the manufacturing of telephone equipment, teleprinter etc. may be permitted in the private sector.

- 6. Development of No. of Industries District and Backward Areas:** The Central government has clearly provided in the industrial policy that preference in granting licence should be followed that the development of no industries districts and backward areas may be obtained. The government declared 87 districts for such target.
- 7. Encouragement to modernization and replacement of machineries and equipment:** The government declared a simplified scheme for speeding up the establishment of machine and equipment and modernization. This facility is given to such industrial units as can increase their production capacity up to 49 percent.
- 8. Rehabilitation of Sick Industries:** The government has gone on following the effective measures from time to time in the direction of rehabilitation of sick industries. Up to January 1985 the management of 30 industrial enterprises is made as per the provision of Industries Development Act 1985 was passed which provided to a point a board for industrial and financial reconstruction.
- 9. Liberal Policy of Re-Endorsement of Additional Capacities:** This scheme was first of all introduced in 1982. This scheme provided that the industrial enterprises could get capacities re-endorsed after adding 1/3 to the highest production made during the five years provided that it should not exceed the licensed capacity plus 25 percent.
In 1985, the scheme was further liberalized. This liberalization was available to those industrial units which have used 80 percent of their capacities. The determination of capacity will be made by adding 1/3 to the maximum production made during any year out of the just preceding five years. The scheme could not be applied to the following industrial units-
 - (1) Industries reserved for small-scale sector.
 - (2) 21 selected industries wherein raw material is in short supply or which are likely to spread pollution.
 - (3) The industries wherein problems of establishment arise.
 - (4) Industrial enterprises situated in such urban areas as have 10 lakh or more population.
 - (5) MRTP and FERA Companies.
- 10. Development of Handicraft, Handloom, Small and Village Industries-** The government has taken many steps to develop the Handicraft, Handloom and Small and village industries.
- 11. Declaration of Industry wise Policies-** The government has declared industry wise policies as below-

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- **Electronics Industry Policy-** This policy aims at improving the technology, investment, production and modernization of Electronics industry.
- **Sugar Industry Policy-** This policy stresses on the supply of sugarcane and sale of sugar in open market and also to reduce the levy of sugar from 65 percent to 55 percent.
- **Cotton Textile Industry Policy-** This policy aims at producing goods of superior quality at a minimum price. This also protects the interest of Handloom weavers.

Appraisal of the Industrial Policy, 1985

Although it is difficult to analyse the results of industrial policy in a very short period, yet the indications are very encouraging. The atmosphere for overall development has come. Capital inflow has increased in industrial sector. Entrepreneurs have failed to take the opportunity to use the advanced technology for raising the industrial productivity. Motor-car industry has come as a mobiliser of our industrial development. Liberalization in licenses has encouraged the establishment of industrial units in backward areas. MRTP Companies and FERA Companies and non-MRTP Companies have benefitted a lot. Rise in prices of share is also indicative of industrial development. Handcraft, Handloom, small and cottage industries have considerably developed. It is hoped that the industrial policy will prove beneficial in attaining the targets set in five-year plans.

12.7 NEW INDUSTRIAL POLICY, 1991

In line with the liberalization measures announced during the 1980s the government announced a New Industrial Policy on July 24, 1991. This new policy de-regulates the industrial economy in a substantial manner. The major objectives of the new policy are ‘to build on the gains already made, correct the distortions or weaknesses that might have crept in, maintain a sustained growth in productivity and gainful employment, and attain international competitiveness.’ In pursuit of these objectives, in July 1991, the Government of India announced drastic changes in the industrial and foreign trade policies. Since then, further liberalizations have been introduced every year with each new budget. The changes that have been included are:

- Abolition of licensing in most industrial sectors;
- Removal of most of the regulations restricting the growth of large companies;
- Opening up many areas to the private sector previously reserved for development by the public sector;
- Removal of numerous regulations pertaining to foreign investment and transnational business collaborations (mainly contained in FERA before 1991);

- Introduction of various incentives to encourage technology transfers in general and foreign investment in high priority industries in particular;
- Partly freeing of foreign trade from government interference; and
- Steps to make the Rupee fully convertible on the current account (not the capital account).

The new economic policies marked a fundamental break with the past. They drastically reduced the degree of state regulations in several respects and introduced a much more market friendly and open economy policy environment. This considerably changed the climate for Indian and foreign investment as well as for transnational technical cooperation and strategic alliances. There is widespread agreement among both Indian and foreign investors that business opportunities in India improved after 1991.

Features of New Policy 1991:- The main features of New Policy 1991 were:-

- 1. Abolition of Industrial Licensing:-** Industrial policy in India has been governed by the Industries Act 1951. The Industrial licensing policy was unable to achieve the objectives laid down for it by the government. On account of these considerations and in order to liberalise the economy and to allow the entrepreneurs to make investment decisions on the basis of their own commercial judgment, the industrial policy 1991 abolished industrial licensing for all industries except 18 industries. With the passage of time most of these industries have also been delicensed. As now licensing is compulsory only for 5 industries. These are alcohol, cigarettes, hazardous chemicals, electronics aerospace and defence equipment and industrial explosives. There is no approval required from the government for delicensed industries,
- 2. Public sector:-** The 1956 resolution had reserved 17 industries for the public sector. The 1991 industrial policy reduced this number to 8. In 1993 the number reduced to 6. On May 9, 2001, the government opened up arms and ammunition sector to the private sector. This now leaves only three industries reserved exclusively for the public sector. The new industrial policy indicates the government's intention to invite a greater degree of participation by the private sector in important areas of the economy.
- 3. Free Entry to Foreign Investment and Technology:-** As in case of domestic industrial investment, foreign investment has also been traditionally regulated in India. In case of both foreign technology agreements sought by Indian firms as well as foreign investment, it was necessary to obtain specific prior approval from the government for each project. Approval will be given for direct foreign investment upto 51 per cent foreign equity in high priority industries. The limit was subsequently raised from 51 per cent to 74 per cent and then to 100 per cent for many industries. Presently FDI is permitted upto 100 per cent on the automatic route in most sectors subject to sectoral rules/regulations applicable.

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Automatic permission will be given for foreign technology agreement in identified high priority industries upto a lumpsum payment of \$ 2 million, 5 per cent royalty for domestic sales and 8 per cent for exports, subject to total payment of 8 per cent sales over a period of 10 years from the date of agreement or 7 years from the commencement of production.

4. MRTP Act:- The new industrial policy scrapped the threshold limit of assets in respect of MRTP and dominant undertakings. These firms will now be at par with others, and not require prior approval from the government for investment in the delicensed industries. Under the MRTP Act, all firms with assets above a certain size were classified as MRTP firms such firms were permitted to enter selected industries only and this also on a case by case approval basis. The MRTP Act was accordingly amended. The amended Act gave more emphasis to the prevention and control of monopolistic, restrictive and unfair trade practices so that consumers are adequately protected from such practice.

5. Some other measures

I. Industrial location policy: The new industrial policy provided that in locations other than cities of more than 1 million population there will no requirement of obtaining industrial approval from the Centre except for industries subject to compulsory. It was in the year 1997-98, the significant amendment was observed in the industrial location policy. One of the which was that earlier it was required that companies establishing units for their industries within 25 kms of the cities having population of more than one million required obtaining industrial approval from the Central government. This was scrapped with the 1997-78 amendment.

II. Abolition of phased manufacturing programmes for new projects: Earlier in order to boost the local economy, several phased manufacturing programmes were launched especially for electronic and engineering products. It was decided under the new industrial policy that such programmes be scrapped as the government felt that due to devaluation of the rupee, substantial reforms were to made in the trade policy and therefore there would be no longer any need for enforcing the indigenous local content required on a case-by-case, administrative basis. It was also decided that the different incentives that were currently available to manufacturing units would continue.

III. Removal of mandatory convertibility clause: Banks and Financial institutions played a major part in the industrial development in our country through their loans. It was considered a common practice to include a mandatory convertibility clause in their lending agreements which granted them the benefit to convert their loans into equity. This was considered a threat for new companies who feared a takeover by the banks, although this was rarely ever done. The new industrial policy abolished this practice.

Table 12.1 Summary of the Indian Reform Process Year

	Industrial Licensing Policy	Trade Policy	Foreign Investment
1991	Licensing abolished except for 18 industries	Rupee devaluation Foreign trading houses with 51% equity Tradable EXIM scripts based on export earnings to bring about partial convertibility on current account. Peak rates reduced from 300% to 150%.	Automatic approval up to 51% equity holding. Foreign Investment Promotion Board setup. 100% holding for export-oriented units.
1992	Further delicensing Streamlining of procedures National Renewal Fund set up to take care of displaced labour.	Limited negative list for imports QRs on most intermediate and capital goods scrapped. EXIM scripts replaced by Liberalized Exchange Rate Management System (LERMS). Peak rates reduced to 110% Reduction of duty on project imports and permission for second hand capital goods.	Extension of approval criteria. Use of foreign brand and trade names. Easing of repatriation criteria.
1993	Motor cars delicensed; Leather delicensed Garments dereserved from small-scale industry subject to 75% exports	Peak rates reduced to 85% Export Promotion Capital Goods (EPCG) extended to service sector (duty free imports against exports). Overall reduction of tariffs and easing for capital and project imports.	Attention shifts to foreign portfolio investment; foreign institutional investors permitted to set up operations in India.
1994	Pharmaceuticals sector liberalized Employee assistance centres set up	Full current account convertibility Peak rates reduced further. Capital and project goods tariffs brought down to 25–35%.	Foreign entry into consumer goods sector begins, subject to repatriation constraints. Liberalized entry into the pharma sector.
1995	Concentration on procedures. Special attention to export oriented units/export promotion zone schemes.	Larger consumer goods imports allowed under expanded Special Import Licence Scheme (against export earnings). Peak tariff rates reduced to 50%, average rate to 33%.	Various non-resident Indian incentive schemes introduced.
1996	Entertainment electronics removed from compulsory licensing. Number of industries requiring licensing is down to fourteen from eighteen in 1991.	Negative list of imports reduced by forty items. Average tariff rate reduced to 27%.	Foreign Investment Promotion Council set up. Foreign equity permissible increased to 74%.
1997	Licensed industries reduced to nine.	Further movements from special import license to open general licence and from restricted list to special import licence. Peak tariff rates down to 40% and average rate to 25%.	Guidelines for non-automatic approvals introduced. Structure of limits on equity investments formalized.

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Check Your Progress

4. State the weaknesses of the Industrial Policy 1977.
5. List the objectives of the Industrial Policy 1985.
6. What has been the negative result of new industrial policy's step to reduce interventionist barriers to the entry of domestic and foreign investors?

12.8 PERFORMANCE OF INDUSTRIAL DEVELOPMENT SINCE INDEPENDENCE

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At the time of independence, India did not have a balanced and well developed industrial structure due to which the country had to depend upon other countries for importing capital goods, after independence, changes have taken place in our economy. The second five-year plan was designed to provide strong base for industrialisation and development of public sector. The Indian economy has witnessed important changes in the industrial pattern during the whole period of planning.

The progress of industrialization during the last 68 years since 1951 has been a striking feature of Indian economic development. The process of industrialisation, launched as a conscious and deliberate policy under the industrial policy resolution of 1956 and vigorously implemented under the five-year plans, involve heavy investment in building up capacity over a wide spectrum of industries. As the result industrial production went up by five times, making India the tenth most industrial county of world. The industrial structure has been widely diversified covering broadly the entire range of consumer, intermediate and capital goods. The progress India has made in field of industrialization is clearly reflected in the commodity composition of India's foreign-trade in which the share of import of manufactured goods has steadily declined; on the other hand, industrial products, particularly engineering goods have become a growing component of India's exports. Finally, the rapid stride in industrialisation has been accompanied by a corresponding growth in technological and managerial skills for efficient operation of the most sophisticated industries and also for planning designing and construction of such industries. Since independence during the plan period many changes have taken place in our industrial sector. The major changes are as follows:-

- 1. Development of heavy and capital goods industries:** The second five-year plan laid special stress on developing strong capital base industries in the country. This plan emphasized on growth and diversification of heavy, capital goods and machine-making industries. Accordingly, heavy investment was made in these industries. As a consequence, we have achieved a well-developed industrial base. The major achievement of Indian industrialisation is the industrial diversification, which has been achieved over a short period of time. Industrial diversification was significantly achieved by 1965-66 and it maintain thereafter as well. During the first fifteen years of Indian planning the growth rate of basic and capital goods was significantly higher than the consumer goods industries.

India has attained self-sufficiency in almost all consumer goods. Growth of capital goods production has been especially impressive. An impressive industrial capacity has been achieved in mining and metallurgical industries, chemical and petrochemical industries, fertilizer production capital goods

industries including sophisticated equipment for steel mills, fertilizer plants, chemical plants etc.

The structure of Indian industries has changed in favour of basic and capital goods sector. The study of structural transformation of the Indian industries reveals that there was a clear shift in favour of basic and capital goods sector. This group accounted for about 50 percent of productivity in 1959 in 1991-92 its share in productive capital rose to nearly 79 percent. Similarly, the contribution in value added improved from 37 percent to 56 percent during this period. Basic industries which include iron and steel, fertilizers, chemicals, cement, non-ferrous metals have thus improved their position significantly under the impact of industrialization. Several capital goods industries hitherto unknown have been brought into the existence and developed. On the hand, the share of consumer goods industries such as textiles, sugar, paper, tobacco, etc., declined in terms of productive capital, employment and value added.

2. **Expansion of public sector:** The public sector plays a pivotal role in the industrial development of a nation. At the time of independence, in Indian economy was basically agrarian with a weak industrial base, low level of saving and investment. On the eve of the first five-year plan there were only 5 PSU with a total investment Rs 29 crore. Both the number of enterprises and the total investment in PSU saw an overwhelming increase over the years. There were altogether 249 PSU under the administrative control of various ministries and department as on march 2010. The cumulative investment in all the PSU Rs 579,920 crore as on 31 march 2010. There has been a phenomenal increase in the size and diversification of the public sector. Public sector exists in both basic and strategic areas. They produce large variety of goods ranging from electronic to mass consumption goods. Most of the public industries have been established in the backward areas, they helped in the development of those areas. The high share of the PSU is accounted for by the fact that investment made in this sector is largely in heavy and basic industries which are highly capital intensive.
3. **Development of infrastructure:** The rapid pace of industrial growth and the development of productive capacity has been marked by remarkable, though still inadequate expansion of infrastructural facilities in the country with expansion and modernization of coal which is India's primary fuel source, by more than three-fold and notable success in the exploration of oil and gas both on and off-shore. The sixth plan summed up the success in infrastructure admirably. An efficient complex of refineries pipelines storage and distribution has been developed and India has entered the petrochemical age. A large infrastructure has been built to sustain the sub-continental economy-a network of irrigation, storage works and canals, hydro and thermal power generation, regional power grids a largely electrified and dieselized railway system, national and state highways on which a rapidly

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growing road transport fleet can operate and telecommunication system covering most urban centres and linking India with the world. the development of modern industry as well as of agriculture has stimulated the growth of banking, insurance and commerce and required matching expansion and modernization of ports and shipping and internal and external air services. Tapping indigenous energy resources, petroleum and thermal and hydro reserves, atomic power generation have substantially expanded. Many engineering and management institution have also been established with both government and private initiative.

- 4. Growth of small units:** One of the important results of the planning exercise has been the tremendous growth of small-scale industrial units both registered and unregistered. These industries contribute about 40 per cent of the industrial production and provide the job to millions of peoples.
- 5. Progress of science and technology:** Significant progress has been recorded in the field of science and technology. India now ranks third in the world in respect of technological talent and manpower. Indian scientists and technologists are working in many areas on the frontiers of today's knowledge, as in agriculture and industry, in the development of nuclear power and the use of space technology for communication and resource development. For further industrial and scientific advance, with growing competence in adaptive research and development, we need only a selective import of technology. The country has been able to train a cadre of technical manpower which can handle cement factories, chemical, fertilizer unit, oil refineries, power houses, steel plant, locomotive factories, engineering industries etc. Research and development laboratories have been setup throughout the country. Many research and development (R&D) institutes have been established. More than a lakh and half degree and diploma holders are tuned out by the technical institutions, similarly in plant training and sending brilliant young men and women abroad for training in top skills has helped to generate skilled manpower and thus reduce dependency on foreign technician and exports. A number of medical, management, and professional institute have been set up. The facilities exist in both public and private sectors. As result, country has started indigenously producing wide range of sophisticated machines and products.
- 6. Growth of Consumer durable goods:** Consumer durable goods have experienced remarkable growth specially during the 1980s. The output of radios, television, refrigerators, air-conditions car scooter etc., has increased tremendously during the whole planning period. On the other hand, mass good failed to acquire their due share in the economy. However, in the recent years the consumer goods both durable and non-durable segments have recorded very good performance.

- 7. Diversification of Private Sector:** In 1991, greater emphasis was laid on the role of private sector in the industrialization process. Accordingly, the government followed the policy of relicensing, liberalization, privatization and globalization,

Though the government has been proclaiming the policy of developing new growth centers so as to diversify the industrial structure, its policies have only resulted in concentration of industrial development in metropolitan areas in selected states and among the top capitalists. The sixth plan also states that the expansion of large scale industries has failed to absorb a significant proportion of increment labour force and led in some cases to a loss of income for the rural poor engaged in cottage industries, like textile, leather, pottery etc. The process of industrialization has not generated sufficient growth potential either in terms of contribution of output or in terms of employment; and what is really serious is that the rate of growth of industrialization has been declining with every decade.

Check Your Progress

7. State the striking feature of Indian economic development.
8. State the important result of planning exercise.

12.9 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The economic problems which came with independence were inflationary tendency on account of war, problem of renovation and modernization, problem of right direction, problem of unemployment.
2. The Industrial Policy Resolution, 1948 was prepared on the basis of mixed economy by Dr. Shyama Prasad Mukherjee, the then Minister of Industries and Civil Supplies.
3. Industries were classified into three schedules depending upon the role of the states in the Industrial Policy Resolution, 1956.
4. The following weakness of the Industrial Policy 1977 were:
 - Comparative low rate of economic development;
 - Increase in unemployment;
 - Low rate per capita income;
 - Increase in regional disparities;
 - Existence of industrial weakness;
 - Disparities in Rural and Urban areas;
 - Irregularity in cost and prices
 - Concentration of economic power;

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5. The main objectives of the Industrial Policy 1985 were:
 - Removing the constraints in the path of economic development,
 - Creating dynamic industrial atmosphere.
 - Accelerating the rate of industrial development, investment and production.
6. The new industrial policy reduced the interventionist barriers to the entry of domestic and foreign investors, resulting in what has been proclaimed as a much more competitive environment in the industrial sector.
7. The progress of industrialization during the last 68 years since 1951 has been a striking feature of Indian economic development.
8. One of the important results of the planning exercise has been the tremendous growth of small-scale industrial units both registered and unregistered. These industries contribute about 40 per cent of the industrial production and provide the job to millions of peoples.

12.10 SUMMARY

- Prior to Independence in 1947, India was dependency of the United Kingdom a consisted of British India, and the Princely States. The British government was not enthusiastic about Indian industry and wanted it to be exporter of raw material and importer of manufactured goods at the same time, and therefore, it adopted a very indifferent policy towards industrial development of India.
- India was typical backward economy in terms of industrialization at the time of Independence. In the absence of industrial policy, the main industrialists were demanding complete autonomy of private sector. Therefore, under these circumstances the government thought it fit to announce a clear-cut industrial policy in order to remove doubts from the minds of entrepreneurs and to set out guidelines for industries.
- Industrial policy is an important instrument through which the government regulates the industrial activity in an economy. The first important industrial policy statement was made in the industrial policy resolution, 1948 issued by the government of India on April 6, 1948. The policy laid foundation of mixed economy in which both sectors would march hand in hand to accelerate the pace of industrial development.
- Jawaharlal Nehru announced New Industrial Policy on 30th April 1956. Objectives of this policy were more comprehensive and developmental. The main objectives of the government were to establish socialists' pattern of society through rapid development.
- The 1956 resolution recognized the critical role of cottage and SSI in economic development of the country. It was felt that cottage and SSI will

remove unemployment, fully utilize the local resources and bring equal distribution of national product. The government took appropriate measures to help SSI.

- Although the first and second industrial policy remained helpful in making the adequate industrial development, yet there were some shortcomings in these policies. Janta Government from very beginning laid stress on small-scale and cottage industry. On October 1977 the then Industry Minister Mr. George Fernandes announced New Industrial Policy.
- With the downfall of Janta Government in 1980, the government of congress came into power. On 23 July 1980, the industry minister Mr. Charanjeet Chamma declared industrial policy 1980 based upon the adequately the values of our country. The new industrial policy intended to follow a pragmatic. The pragmatic approach of new industrial policy was at removing constrains to industrial production by revising the definition of small industries, regulation of installed capacity beyond the licensed capacity, a scheme of automatic expansion of capacity.
- With a view to accelerating the rate of economic development, raising the industrial productivity and maximizing the utilization of natural resources, the government of India made many major decisions in industrial policy 1985.
- The government announced a New Industrial Policy on July 24, 1991. This new policy de-regulates the industrial economy in a substantial manner. In July 1991, the Government of India announced drastic changes in the industrial and foreign trade policies. Since then, further liberalizations have been introduced every year with each new budget. This new economic policies in some areas reflect so much emphasis on attracting foreign investment
- Industrialisation brings transformation in the entire economic structure of the country. The importance of industrialisation for development of the economy has been recognised ever since the launching of First Five Year Plan in 1951. Based on Mahalnobis Model an ambitious programmes of industrialisation with emphasis on a basic and heavy industries was started in the second five year plan. This development strategy, with emphasis on heavy industries, proved to be a great success in the initial phase of planned development, and the country was able to develop a large industrial base. For making a comprehensive review of the industrial development during the plans, we have divided the entire era into four distinctive phases. Since independence during the plan period many changes have taken place in our industrial sector.
- The major achievement of Indian industrialisation is the industrial diversification, which has been achieved over a short period of time. Industrial diversification was significantly achieved by 1965-66 and it maintain

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thereafter as well. During the first fifteen years of Indian planning the growth rate of basic and capital goods was significantly higher than the consumer goods industries.

- The high share of the PSU is accounted for by the fact that investment made in this sector is largely in heavy and basic industries which are highly capital intensive. A large infrastructure has been built to sustain the sub-continental economy. Significance progress has been recorded in the field of science and technology. India now ranks third in the world in respect of technological talent and manpower.
- The process of industrialization has not generated sufficient growth potential either in terms of contribution of output or in terms of employment; and what is really serious is that the rate of growth of industrialization has been declining with every decade.

12.11 KEY WORDS

- **Industrial policy:** It is an important instrument through which the government regulates the industrial activity in an economy.
- **Mixed Economy:** It is an economic system in which some industries or parts of industries are controlled privately and some by the government.
- **MRTPA Act:** The Monopolistic and Restrictive Trade Practices Act, 1969, was enacted to ensure that the operation of the economic system does not result in the concentration of economic power in hands of few and other related objectives.

12.12 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What were the major objectives of the industrial policy 1948?
2. State the objectives of the industrial policy 1956.
3. Write a short note on the salient features of the industrial policy 1977.
4. List the objectives of the industrial policy 1991.

Long Answer Questions

1. Discuss the features of the Industrial policy Resolution 1948.
2. Critically explain the Industrial Policy Resolution 1956.
3. Examine the new Industrial Policy 1991.

4. Compare the Industrial policy 1977 and 1985.
5. Describe the performance of industrial development since independence

Industrial Policy in India

12.13 FURTHER READINGS

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UNIT 13 PUBLIC AND PRIVATE SECTORS

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Structure

- 13.0 Introduction
- 13.1 Objectives
- 13.2 Public Sector
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13.0 INTRODUCTION

India inherited a weak industrial structure from the British rule. During the colonial period, when India was a part of British India, industrial policies and economic policies in general were essentially shaped by British interests. At the time of independence, activities of the public sector were restricted to a limited field. There were few 'Public Sector' Enterprises in the country. These included the Railways, the Posts and Telegraphs, the Port Trusts, the Ordinance Factories, All India Radio, few enterprises like the Government Salt Factories, Quinine Factories, etc. which were departmentally managed. The country was facing problems like inequalities in income and low levels of employment, regional imbalances in economic development and lack of trained manpower. India at that time was predominantly an agrarian economy with a weak industrial base, low level of savings, inadequate investments and infrastructure facilities. In view of this type of socio-economic set up, our visionary leaders drew up a roadmap for the development of Public Sector as an instrument for self-reliant economic growth. This guiding

factor led to the passage of Industrial Policy Resolution of 1948 and followed by Industrial Policy Resolution of 1956. The 1948 Resolution envisaged development of core sectors through the public enterprises. Public Sector would correct the regional imbalances and create employment. Industrial Policy Resolution of 1948 laid emphasis on the expansion of production, both agricultural and industrial; and in particular on the production of capital equipment and goods satisfying the basic needs of the people, and of commodities the export of which would increase earnings of foreign exchange. In this unit, you will learn about the concept of public and private sector enterprises.

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13.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the meaning, features, performance and remedial measures for public sector
- Describe the evolution, performance and role of private sector enterprises

13.2 PUBLIC SECTOR

After independence, the area of activities of the Public sector expanded at a very rapid speed. After independence it was decided therefore to embark industrialization in a big way. But at the time private enterprises lacked the entrepreneurial skills, as well as requisite capital to invest in various basic and capital goods industries. These basic and capital industries were essential if the economy was to lay strong foundations for industrial development. Therefore, the government decided to establish some of the major industries in public sector. Public sector enterprise is that enterprise which is owned and managed by government. The term public enterprise covers all undertakings which are directed either by a branch of government itself or a body setup by government to direct the undertaking in public interests. In other words, Public sector refers to all the industrial and commercial enterprises which are owned by the government itself or by some other agency on behalf of the government. Public sector enterprises are these enterprises which are owned managed and operated by the government-central-state or local.

Pt. Jawaharlal Nehru used to call public enterprises as temples of modern India which hold the key of India's prosperity and well-being. It provides the necessary infrastructural facilities.

Expansion of public sector was made an integral part of economic planning in India. The industrial policy resolution 1948 and 1956 and the subsequent policy statements of the government assigned a leading rate to the public sector along with private sector.

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13.2.1 Meaning and Definition of Public Sector

The public sector is that portion of economic system that is controlled by national, state, provincial and local government. The term *Public enterprise* cover all undertakings which are directed either by a branch of government itself or by a body set up by the government to direct the undertaking in public interest. Thus, a public sector enterprise is by definition an enterprise where there is no private ownership. Where its functions are not merely confined to the maximization of profit or the promotion of the private interest of the enterprise but are governed by the public or social interest, and where the management is responsible to the government either directly as in a departmental undertaking or indirectly as in government companies and corporations.

We can define Public Sector as Public Sector of an economy is the sector that provides a range of governmental services, including infrastructure, public transportation, public education, health care, police and military services.

13.2.2 Forms of Public Sector

Public sector enterprises could be established in any of following forms:

- **Department Enterprises**-These enterprises are under the direct ownership and control of the Central Government. E.g. Indian Railway, Atomic power, Post and Telegraphs.
- **Public Corporations**- These are established after passing a bill in the Parliament for e.g., Life Insurance Corporation, Reserve Bank of India, Indian Airline Corporation, Industrial Finance Corporation of India, etc.
- **Government Company**- It is established under Indian Companies Act 2013. E.g. Hindustan Machine Tools Ltd. Bharat Electronics Ltd. Central Electronics Ltd., etc.
- **Holding Company**- It is established through the integration of government companies engaged in the production of a specific good. For example, Steel Authority of India Limited has been set up through the integration of steel plants at Bhilai, Rourkela, Bokaro, Durgapur etc.

13.2.3 Rationale of Public Sector in India

Establishment and expansion of public sector enterprise was justified on the following grounds:

1. **Acceleration of Economic Growth**-Public enterprises are regarded as the main instrument of accelerating the growth rate of industrial output. It could be used as the principal machinery of development. The first and foremost aim of the public sector is to accelerate the pace of economic development by stirring the stagnation of long lasting underdevelopment. 'To attain rapid growth in an economy it is essential to assign high priority to the development of heavy and basic industries.'

- 2. Development of Basic and Heavy Industries**-Public sector is expected to play a leading role in the development of basic and heavy goods industries such as iron and steel, chemical, fertilizers industries. These industries require huge investment and have a long gestation period. Private sector may not like to undertake such huge investment. Therefore, to attain rapid industrial growth in an economy it is necessary to assign high priority to the development of heavy and basic industries.
- 3. Development of Infrastructure**-Public sector has to play an important role in establishing infrastructural facilities such as power energy, transport and communication. Development of these facilities requires large investment with long gestation period and low profitability. Private sector may not show much interest in developing these facilities during the initial stages of economic development.
- 4. Balance Regional Development**-One of the important objective of economic planning in India to achieve regional equality. To achieve this objective establishment of public sector in economically backward region is essential. Private enterprises are interested in undertaking investment in these regions unless they get tax rebates and other concessions from the government. Public sectors enterprises can be established in the backward region to attain balanced regional development in the economy.
- 5. To reduce sharp disparities of income and wealth**-If the whole industrial structure is left to private sector, it is possible that economic power will concentrate in the hand of few big industrialists. To prevent such concentration of economic power, it is necessary to establish public sector enterprises.
- 6. Generation of Economic Surplus**-In private sector organization all the profit of an enterprises goes in the hand of private individual whereas in public sector, it generates income for government through the earning of profits and surplus. The Government partly uses this income and profit to undertake investment for various development and social welfare programmes and partly uses it to put back into enterprises investment in order to expand the productive potential of these enterprises.
- 7. Checking Private Sector Monopolies**-Public sector enterprises are an important means of checking monopolies in the private sector. In the past some of the big private sector enterprises enjoyed monopoly power in the industrial sector. There was a large concentration of economic power in the hands of private big business houses. This problem can be tackled by establishing public sector units.
- 8. Socialistic Economic Development**-Public enterprises are the kingpin of socialistic oriented industrial development therefore some of the public enterprises could be started on the base of socialist approach, where investment decisions are based not on narrow consideration of maximizing profit but the total of all incomes that accrue to society. The industries which

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promote national welfare and reduce income disparities, to generate employment must be developed in Public sector development of these industries should not be left in the hands of the private sector keeping in mind the large national interest.

9. Instrument of Achieving Objectives of Economic Planning-Public sector enterprises are the direct means to achieve some of the important objectives of economic planning, such as generating employment opportunities, reduction of income, inequalities reduction of sectoral imbalance, export promotion.

It is also felt that economic planning would be meaningful and effective only through large scale expansion at public sector so as to channelize the resources into productive line in a planned manner. Thus, public sector enterprises regarded as integral part of economic planning.

13.2.4 Role of Public Sector in India or Achievements of Public Sector in India

Public sector enterprises play a dominant and dynamic role in the development of Indian economy. The major contributions are as under:-

- 1. Strong Industrial Base-** After independence serious gap were felt in the field of heavy industries. Public sector has helped in filling the structural and demand-supply gaps in achieving a strong industrial base. There has been significant growth in the state-run defence industries and industries of strategic importance such as iron and steel, heavy engineering, and heavy electrical, petroleum and natural gas, chemical, drugs and fertilizers. Since these industries require considerable investment and have low profitability potential in the short-run, these industries do not find favour with the private sector. However, unless these industries are setup, the consumer goods industries cannot progress at a sufficiently-rapid pace. Thus, by establishing and developing basic heavy and capital-intensive industries, the Public sector has created a strong industrial base for economy. The share of the industrial sector in G.D.P. at Factor Cost has increased slowly but steadily during the plan period.
- 2. Share in National Income-** An important quantitative measure of contribution of the public sector to the economy is the national income. The public sector has practically doubled its share in the NDP in real terms and accounts for one fourth of the total income of the economy. Undoubtedly, a significant change in the structure of economy in terms of the increased importance of the public sector in domestic activity. It is quite clear that public sector has been strengthening its position in the structure of economy.
- 3. Commanding Heights of Economy-** It is admitted that the share of the public sector in the NDP has been slow to grow. But what is more important is its share in different sectors of economy. The public sector is in command

in almost all the strategic sectors of the economy like coal, oil-refining, electricity, iron & Steel, paper, new-print, where its controls more than 80 percent of the total installed capacity. In all, it holds a dominating position in the production of 50 types of industrial commodities and services which are of decisive significance for the economic development of the country.

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- 4. Development of Infrastructure-**The primary condition of economic development in any underdeveloped country is that the infrastructure should develop rapid pace. Without proper expansion infrastructural facilities in the form of irrigation, power, energy, and transportation the agricultural sector cannot grow properly. Similarly, in the absence of adequate development of transport and communication facilities, banking and insurance facilities, the process of industrialization cannot be sustained. Thus, the public sector has enabled the economy to develop a strong infrastructure for the future economic development. The private sector also has benefited immensely from the investment under taken by the public sector.
- 5. Removal of Regional disparities-**The government in India has sought to use its power of setting up industries as a means of removing regional disparities in industrial development. In pre-independence period most of the industries were located around the port towns of Mumbai, Calcutta and Chennai. After independence the government paid attention to the problem of regional disparities and set up industries in a number of area neglected by the private sector. Government developed backward state and regions by setting up giant undertakings. Thus, the major proportion of public investment was directed towards backward states and regions. All the four major steel plants Bhilai steel plant, Raurkela steel plant, Bokaro Steel plant, and Durgapur steel plants were set up in the backward states. Fertilizer plants set up in Assam, Orrisa, Bihar, U.P. Punjab and Kerala. Private sector was not interested in setting up units in backward areas due to poor working and low profit.
- 6. Public Sector and Capital Formation-**Public sector plays an important role in capital formation. The share of public sector in total investment during the plans increased initially reached to 60 per cent and then declined. But it remained very high throughout. The contribution of public sector to capital formation assumes particular importance because its investment has taken place in essential infrastructural facilities and key industries. Share of public sector in gross domestic capital formation increase from 3.5 per cent in the first plan to 10 per cent in the eighth plan. However, it come down to about 7 per cent.
- 7. Earning of Foreign Exchange-**The foreign exchange problems often emerge as a serious constraint on the programme of industrialization in developing economy. Public enterprises have contributed in earning foreign exchange to a significant extent. They have contributed to foreign exchange earning in following ways:

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- (a) There is a direct export items produced by public sector undertakings. Some enterprises Hindustan Machine Tools, Hindustan Steel Ltd., The Bharat Electronics Ltd., etc., have been exporting an increasing proportion of their output and earning foreign exchange thereby.
- (b) Some Public Sector enterprises such as State Trading Corporation, Mineral and Metal Trading Corporation earn foreign exchange by providing trading and marketing service.

8. Saving of Foreign Exchange-The Public Sector enterprise have helped not only by earning valuable foreign exchange but also in saving the foreign exchange by producing import substitutes. At the time of independence, India imported capital goods machinery and equipment. A lot of foreign exchange spent on them. After independence, Public sector produced and provided goods which were substitutes of imported goods in this way public sector helped in import substitution and saving a lot of precious foreign exchange also.

9. Check-over Concentration of Economic Power-In capitalist economy, where the public sector is practically non-existent or is of a very small size, economic power gets increasingly concentrated in a few hands and there is increase in the inequality of income and wealth. Public sector helps in checking the concentration of economic power in a few hands and reducing inequalities of income and wealth. Public sector can help in reducing inequalities in the economy in a number of ways:

- Public sector industries can help the workers by giving them higher wages and by providing various welfare services like house, education, medical facilities.
- Thus, the profit earned by the public-sector enterprises can be used by the government either in the industries or spent on special welfare programmes to help the poor people. Poor people will be benefitted by this.
- Public sector can orient production machinery towards the production of mass consumption goods.

In this way the public sector promotes equality of income and wealth distribution and promote overall economic development of the country.

10. Share in Employment-Public sector generates substantial employment opportunities in a situation of wide spread unemployment. There has been two-fold employment opportunities in the public sector:

- (a) Government administration and defence and other government service like health, education, research and other activities that promote economic development.

(b) Economic enterprises owned by the central government, and the state government.

The number of persons employed with government has shown a considerable increase from 71 lakh in 1971 to more than 185 lakh. Public sector employed about 70 per cent of the workers employed in organized sector of the Indian economy.

11. Contribution to Central Exchequer-Public sector enterprises contribute to the resources of the central government by way of dividend, excise duty, custom duty and corporate taxes. In this way, this sector generates resources for the planned development of the country.

13.2.5 Growth and Performance of Public Sector

The performance of private sector units is measured by the yardstick of net profit or loss since the maximization of profit is the sole aim of private sector. The yardstick fails miserably in the case of public sector under takings. Public sector units are frequently started in those sectors where profitability is low and gestation period long. Therefore, the performance of the public sector units should not be judged by what they earn in the form of profit but of the total additions they make to the flow of goods and services in the economy.

In post-independent period the expansion of public sector was undertaken as an integral part of the 1956 industrial policy. The Industrial Policy 1956 gave public sector a strategic role in the Indian economy. At the time of independence country was backward and underdeveloped-basically and agrarian economy with a weak industrial base heavy unemployment, low level of saving and investment and richer absence of infrastructural facilities. Indian economy needed a big push. This push could not come from the Indian private sector. It was assumed at that time that only the government intervention in a big planned way could raise agricultural and industrial production and expand the employment opportunities.

Over the years, operations of CPSEs have extended to a wide range of activities in the manufacturing, engineering, steel, heavy machinery, machine tools, fertilizers, drugs, textiles, pharmaceuticals, petro-chemicals, extraction and refining of crude oil and services such as telecommunication, trading, tourism, warehousing, etc. and a range of consultancy services. In 2006-07, there were 247 Central Public Sector Enterprises with total outlay of Rs 455,409 crore in India, as compared to 5 in 1950. It is evident that both the quantum of investment and number of enterprises have steadily increased. The growth of the public sector is shown in the following table.

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Table 13.1 Growth of the public sector enterprises

plan	No of Enterprises	Total outlay (crore)
I	5	29
II	21	81
III	48	953
IV	55	3902
V	122	6237
VI	186	18229
VII	244	99329
VIII	242	213610
IX	240	324614
X	247	421089
XI	242	455409

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The Table reveals that in the beginning of the first year plan there were only 4 enterprises in the public sector with Rs 29 crore as total investment. It has increased to 242 to enterprises in the eleventh plan with total outlay of Rs 455409 crores. During the eight and ninth five year plan number of enterprises decline and after that it state to increase. Observations are made regarding the performance of CPSEs during the plan period:-

1. The growth of investment in Central Public Sector enterprises increased from Rs. 29 crores in 1951 (first five-year plan) to Rs. 455409 crores in March 2008 in the first year of XI plan. The largest share in the investment is in service sector, followed by electricity.
2. From a mere 5 public sector enterprises in 1950, the number increased to 242 as on 31 March 2008. It excludes banks, financial institutions, ports, railways etc.
3. In 2007-08 the profit making industries increase to 160 from 119 in 2002-03.
4. Number of loss incurring CPSEs, it has come down from 105 in 1997-98 to 53 in 2006-07.
5. Turnover increased to Rs. 9,64,410 Crores in 2006-07, from Rs. 2,76,002 Crores in 1997-98 recording a net worth growth of 349% increased from Rs. 1,34,443 Crores to Rs. 4,52,995 Crores in 2006-07 recording a growth of 337%.
6. The turnover is equal to Rs. 9,64,410 Crores in 2006-07, which is an increase of 349% in comparison to 1997-98 (Rs. 2,76,002 Crores). As regards Net worth, it has increased by 337% in 2006-07 in comparison to 1997-98 (Rs. 1,34,443 Crores), and is presently at Rs. 4,52,995 Crores.
7. Net profit has increased by 599% in 2006-07 in comparison to 1997-98 (Rs. 13582 Crores), and is currently to the tune of Rs. 81550 Crores.

8. The share of output of CPSEs in GDP at market price stood at 8.23 per cent in 2006-07 and 8.21 per cent in 2005-06. The CPSEs made substantial contribution to the Central Exchequer through payment of dividends, interest on government loans and taxes & duties; the major share of contribution to Central Exchequer by the CPSEs was by way of payment of taxes & duties growth of 85.91% followed by dividend (11.74%) and interest (1.33%).
9. It contributed to significant extent in improving the overall employment situation in the country and has acted as a model employer by providing the work a with better wages and other facilities as compared to the private sector. Effective utilization of Human Resources is one of the most important factors for the efficient and profitable functioning of an organization. It has special significance in the management of public sector enterprises. CPSEs employ a large workforce in different disciplines and the successful operation of these enterprises very much depends on the skills and capabilities of the workforce. Out of around 16 lakhs manpower (as on 31.03.07) deployed presently in CPSEs, about 3.65 lakh are in the supervisory and managerial cadres which represent about 22.12% of total manpower. The number of employees during the period has reduced from 19.59 lakhs in 1997-98 to 16.14lakhs in 2006-07, which is a reduction of 17.61%.
10. Public sector has made significant contribution towards achieving social objective. The food corporation of India (FCI) and artificial limb manufacturing corporation of India are two main central public sector enterprises serving social objectives.
11. The average wage for worker in public sector enterprise is also higher than in the private sector.
12. A great deal of investment in central public enterprises is being made through interal resources than through investment from outside.
13. In 1990 a forum of women in public sector was established. Its role included training, providing support services, counseling centre, etc. Out of the total increase in organized women employment public sector is responsible for 63 per cent of increase during 1971 to 2005. Thus, it is clear that public sector has played a major role in empowerment of women.

The Public Enterprises Survey (2016-17), brought out by the Department of Public Enterprises, Ministry of Heavy Industries & Public Enterprises, Government of India on the performance of Central Public Sector Enterprises:

- **Total paid up capital** in 331 CPSEs as on 31.3.2017 stood at Rs 2,33,112 crore as compared to Rs. 2,04,763 crore as on 31.3. 2016 (320 CPSEs), showing a growth of 13.84%.
- **Total Investment (Financial)** in all CPSEs stood at Rs 12,50,373 crore as on 31.3.2017 compared to Rs 11,61,019 crore as on 31.3.2016, recording a growth of 7.70%.

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- **Capital Employed** in all CPSEs stood at Rs. Rs 21,74,120 crore on 31.3.2017 compared to Rs.20,59,529 crore as on 31.3.2016 showing a growth of 5.56 %.
- **Total Gross Revenue from Operation** of all CPSEs during 2016-17 stood at Rs 19,54,616 crore compared to Rs. 18, 34,635 crore in the previous year showing a growth of 6.54 %.
- **Total Income** of all CPSEs during 2016-17 stood at Rs 18,21,809 crore compared to Rs 17, 64,232 crore in 2015-16, showing a growth of 3.26%.
- **Profit** of profit making CPSEs (174 CPSEs) stood at Rs 1,52,647 crore during 2016-17 compared to Rs 1,44,998 crore in 2015-16 showing a growth in profit by 5.28%.
- **Loss** of loss incurring CPSEs (i.e 82 CPSEs) stood at Rs.25,045 crore in 2016-17 compared to Rs.30,759 crore in 2015-16 showing decrease in loss by 18.58 %
- **Overall net profit** of all 257 CPSEs during 2016-17 stood at Rs 1,27,602 crore compared to Rs 1,14,239 crore during 2015-16 showing a growth in overall profit of 11.70%.
- **Reserves & Surplus** of all CPSEs went up from Rs 8,98,510 crore in 2015-16 to Rs.9,23,747 crores in 2016-17, showing an increase by 2.81 %.
- **Net worth** of all CPSEs went up from Rs. 10,79,953 crore as on 31.03.2016 to Rs.11,07,981 crore as on 31.03.2017 showing an increase of 2.60%.
- **Contribution of CPSEs to Central Exchequer** by way of excise duty, customs duty, corporate tax, interest on Central Government loans, dividend and other duties and taxes increased from Rs 2,75,841 crore in 2015-16 to Rs 3,85,579 crore in 2016-17, showing a growth of 39.78%.
- **Foreign exchange earnings** through exports of goods and services increased from Rs 76,644 crore in 2015-16 to Rs 87,616 crore in 2016-17, showing an increase of 14.32%.
- **Foreign exchange outgo** on imports and royalty, know-how, consultancy, interest and other expenditure increased from Rs 3,86,957 crore in 2015-16 to Rs 4,59,210 crore in 2016-17 showing an increase of 18.67%.
- **CPSEs employed** 11.31 lakh people (excluding contractual and casual workers) in 2016-17 compared to 11.85 lakh in 2015-16, showing a reduction in employee strength by 4.60%.
- **Salary and wages** went up in all CPSEs from Rs 1,27,182 crore in 2015-16 to Rs 1,40,384 crore in 2016-17 showing a growth of 10.38%.

- **Total Market Capitalization** (M-Cap) of 50 CPSEs traded on stock exchanges of India is Rs 17,76,235 crore as on 31.03.2017 as compared to Rs 12,94,245 crore as on 31.03.2016 showing an increase of 37.24%.
- **M-Cap** of CPSEs as per cent of BSE M-Cap increased from 13.66% as on 31.3.2016 to 14.61% as on 31.3.2017.

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13.2.6 Problems of Public Sector Enterprises

Despite the expansion of the public sector and the important role they have played in the Indian economy through their responsibly good performance there has been a lot of criticism about the performance of public sector enterprise in certain respects. Public sector enterprises are facing a number of problems due to which their performance has been much below expectations. Following are the main problems faced by the public sector enterprises:

1. **Low profit:**- An important criticism leveled against public sector enterprises is that the level of their profit has been low. A number of public sector enterprises have been incurring heavy loss year after year. Among the profit earning enterprises most of them have been earning less profits. Main reason of low profitability is deliberate policy of keeping prices of their product. It is assumed that their credibility is very low. They are termed as inefficient and mismanaged enterprises. It is important to note here that the performance of the public sector enterprises has improved considerably in recent year.
2. **Under-utilization of capacity:**- A large number of public sector enterprises have been facing problem of under-utilization of plant capacity. Most of the public enterprises are underdeveloped they operate at sub-optimal level. The main factors responsible for this are stagnation in the industrial sector, inefficient operation, political interference and poor management and labour disputes, etc.
3. **Location factor:** Location of project has not been done on rational economic consideration like demand for project, availability of raw material, cost of alternative location, etc. Many time political interference have influenced decisions about location projects. This approach has resulted in locating some projects at place which were not suitable from the view point of either demand or cost consideration.
4. **Unprofitable price:**- Price policy in some of the public sector enterprises is another area of concern. No doubt in many cases prices are kept low to promote economic development and to protect the interest of consumers. Public sector has social responsibility. Hence, they operate with social welfare motive such as need to compensate for rising cost and need subsidies for the weaker sections of the society and farmers. Public enterprises have administrated price which are not profitable
5. **In adequate autonomy:**- Public sector enterprises suffer from lack of sufficient autonomy for management. There is a lack of financial autonomy.

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The management has to operate under excessive controls by the relevant Ministry. Public enterprises are unable to take decisions and initiate action on their own. Lack of autonomy may lead to lack of accountability for results.

- 6. Over staffing:-** Generally all public sector enterprises are over staffed. Over staffing refers to the excess manpower over actual requirements. Over staffing increases the cost of wages and brings down productivity per worker. Over staffing does not add productivity but add to inefficiency and delay execution projects.
- 7. Management Gap:-** Most of the public enterprises observe management gaps. Many a times, public sector enterprises remain leader-less for months and years together because of the inability on the part of the government to identify suitable person to head the enterprise. Leader-less enterprise tends to function aimlessly.
- 8. Inefficient Management:-** The management of public sector enterprises is far from satisfactory. Their management is mostly drawn from bureaucrats who function as chairman, managing directors and managers. Most of them are non-specialized and non-technical people. They are not really qualified to run industrial enterprises.
- 9. Burden of sick units:-** A large number of sick units have been taken over by the government. However, they continue to operate at losses. The chances of nursing them back to normal health are bleak. These sick units are a liability to the public sector.
- 10. Bureaucratic Culture:-** Public sector enterprises do not provide appropriate environment to make them dynamic and innovative. It is commonly observed that public sector lacks initiative and innovativeness. The pace of work is low. There are procedural delays faulty planning, and delayed execution of projects. Since top officials of public sector enterprises have civil service background, they tend to act in cautious and unimaginative ways rather than in bold and innovative ways.
- 11. Poor Project Planning and Control:-** There has been uncalled delay in completing various projects. Many of the public sector projects take much larger time to complete than what is initially estimated. Public sector enterprises projects take a very long time to complete because of poor planning and control. This raises the cost of project.
- 12. Over capitalization:-** Several public sector undertakings are over capitalized due to excessive cost of construction surplus plant capacity, heavy over-head expenses, high cost of imported machine and unscientific projects location.
- 13. Pessimistic Atmosphere:-** There is a high degree of pessimism in the functioning of public sector enterprises. Atmosphere of lack of commitment for work, indiscipline, low concern for the economy are some pessimistic traits characterizing the behavior of people working in public enterprises.

13.2.7 Remedial Measures for Improving Performance of Public Sector

*Public and
Private Sectors*

To attain the desired level of efficiency, a suitable political industrial economic and administrative atmosphere is required for public sector enterprises. Following steps should be taken to improve the performance of the public sector in India:-

1. The target of the enterprises must be fixed in quantitative terms.
2. There should be systematic plan to appoint managers. Political intervention should be stopped.
3. If price are not sufficient Public Enterprise will incur losses. This will burden the budgetary resources of the government. Therefore, prices have to be determined rationally.
4. In the preliminary stages of project, detail of decisions like that relating to size, location, type of technology, product mix, etc., must be carefully mentioned so that proper running of the project takes place and the target can attained.
5. Political consideration should not come in the way of running of public enterprises.
6. Private sector should be allowed to enter into those areas which have been reserved for the public sector. This will give birth to competition and increase efficiency and productivity.
7. Public sector should be allowed to raise their funds from capital market. Employees should be allowed to invest in the capital of the enterprise.
8. Cost of labour surplus is very high. Expansion and diversification should be carried out in the product range to utilize surplus labour.
9. Managing changes as a collective effort involving management, trade union and government.
10. Building up an overall culture of productivity and productive efficiency in the whole organization.
11. Changing over from the psychosis of distribution of products to vigorous and aggressive selling and marketing involving consumer satisfaction and after sales services.

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Check Your Progress

1. How are public corporations established?
2. In what ways do the public sector enterprises contribute to the resources of the central government?
3. List the main factors responsible for the underutilization of capacity in public sector enterprises.

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13.3 PRIVATE SECTOR IN INDIA

In the mixed economy of India, private sector plays a complementary role to the public sector. The private sector of Indian economy in the past few years have delineated significant development in terms of investment and in terms of its share in the gross domestic product. The key areas in private sector of Indian economy that have surpassed the public sector are transport, financial services etc.

13.3.1 Meaning of Private Sector

Private sector refers to that sphere of economy where there is private ownership and control over the means of production. Private owner utilize these means for maximum profits and in order to promote one's own interests. In short, when the ownership management and control of business and industrial enterprises are in the hand of private entrepreneurs it is called private sector.

In India Private sector can be conveniently classified in three groups:-

- Unorganized Sector – It includes individual industrial producing units
- Organized sector: It includes large-scale industrial units and big industrial houses.
- Small-scale industrial units

Among these, the numerical strength of the first two categories outweighs the large-scale units. However, the relative real strength is to be judged by the proportionate share in such aggregates as employment, fixed capital, gross output etc. In terms of such criteria these are large scale industrial units that form the backbone of the private sector in India.

13.3.2 Importance of Private Sector

It has been observed that the economic plans were generally a little biased towards the public sector but nowhere was it true that it was against or impartial negatively towards the private sector. In fact, time and again it has been reimposed that private sector has the unique advantage in several areas including skill and entrepreneurial talent. The restrictions that these private sector companies face is in terms of bringing together resources required for building basic but key industries and the fact that getting large capital investment is difficult. The Industrial Policy Resolution, 1956 can be considered key for dealing with these issues and setting a foundation for future. Therefore, it specified that certain key industries were to be reserved for the public sector. For the rest of the industries, private sectors were to be incentivized by being given a good environment through opportunities both financial and otherwise. The new economic policy and other related economic reforms have also introduced a number of opportunities for private sector to flourish and boom.

To tackle the problem of poverty alleviation, the Indian government has taken several steps to increase employment opportunities in the private sector. This would be done by increasing the number of private financial institutions so that purchase of several inputs in terms of education, equipment, infrastructural facilities becomes easily accessible. Other development areas previously restricted as State activities are also now becoming open to acceptance and peaking interest in the private sector for example, there has been interest in areas such as welfare, aid related activities and women empowerment. A number of institutions are now helping the government of India identify the barriers to the entry of private sector in the economy.

Industrial delicensing along with devaluation is now helping private sectors in the economy open up. And even though the pace of development of private sector remains low in comparison to the public sector, there has been significant improvement in terms of investment in the sector.

13.3.3 Role of Private Sector in India

India, being a mixed economy, has assigned a great importance on the private sector of the country for attaining rapid economic development. The role played by the private sector in India can be studied under the following heads-

- 1. Industrial Development:-** During the pre-independence period, the private sector has played a responsible role in Indian economy where it set up and expanded cotton and jute textiles, sugar, paper, edible oil, tea etc. After independence, the national government gave sufficient stress on industrialization. A number of modern industries have been setup in the private sector. The private sector also made a serious attempt to invest on industries producing wide range of intermediate products which include machine tools, chemicals, paints, plastic, ferrous and non-ferrous metals, automobiles, electronics and electrical goods etc. In this way, the private sector has developed the consumer goods industry, producing both durables and non-durables and became self-sufficient in the production of different types of consumer goods.
- 2. Agriculture-** In India, agriculture and other allied activities like animal husbandry, dairying, poultry etc., are playing a dominant role as it contributes nearly 30 per cent of GDP and it provided employment to nearly 67 per cent of the total working population of the country. Such a big sector is completely owned and managed by the private sector.

Thus, private sector is quite dominant in respect of agriculture and other allied activities. In India, agriculture is not conducted on commercial basis rather it is managed by the households as much of these activities are in the hands of small and marginal farmers. In India, the new agricultural strategy adopted by the Government has been implemented by the private sector under the active support of the Government.

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3. Trading: Both the wholesale and retail trade in India are in the hands of private sector. In a big country like India, having a huge size of population, the entire trading activities are managed by the private sector in a best possible manner. But in case of scarcity of any essential commodities, the private businessmen have their natural tendency in resorting to hoarding and black marketing of such commodities leading to exploitation of the consumers.

In order to control such illegal activities, the Government has introduced various control and regulatory measures in the form of controls on price, movement of goods and on storage etc. Moreover, the Government has been procuring food grains through its premier organization Food Corporation of India (FCI) and has introduced a huge network of the public distribution system (PDS) to participate in the trading of essential commodities for the interest of the consumer.

Moreover, in respect of international trade, the private sector is playing an important role in its promotion through active government support. The State Trading Corporation (STC) and Minerals and Metals Trading Corporation (MMTC) of the Government are playing a dominant role in this regard. However, in a country like India, the private sector is dominating over the entire trading sector of the country.

4. Rising Domestic Saving:- In the first plan the contribution of private sector in gross domestic product was only Rs 687 crores which was 35 percent of the total play outlay. In the sixth plan saving increased up to 36.396 crores which was 37 percent of total outlay. Recently contribution of the private sector in the gross domestic saving is 671692 crores recorded.

5. Infrastructure: Private sector is also providing an active support to the infrastructural sector of the country. Although, the major areas of the infrastructural sector lies in the hands of public sector but still the private sector is participating in those areas which remain open for it. Private sector has been playing dominant role in respect of road transport, water transport etc. from the very beginning.

But after the introduction of New Industrial Policy, 1991, the Government has opened some areas like power generation, air transport etc. for the participation of the private sector. Accordingly, in the post- 1991 period, the private sector has been actively participating in those new areas like power generation, air transport, building highways and bridges on Build, Operate and Transfer (BOT) basis etc.

6. Services Sector: The services sector of the country is almost totally under the control of the private sector. The entire community and personal services, which contributed nearly 11.1 per cent of GDP in 1994-95, is entirely managed by the private sector in most rational manner. The entire professional services, repairing services, domestic services, entertainment

services etc. are solely rendered by the private sector throughout the country. The entire wholesale and retail trade in the country is also being managed by the private sector. Moreover, the major portion of the transportation; especially in the road transport is also managed by the private sector. With the growing liberalization of Indian economy in recent years, the private sector is being assigned with much greater responsibility in various spheres of economic activities.

7. **Much diversified Structure:** Another important aspect of the growth of the private sector is the increase in the diversification of the industrial products.
8. **Small Scale and Cottage Industry:** In India, small scale and cottage industries are playing an important role in the industrial development of the country. The entire small scale and cottage industry is owned and managed by the private sector. As these industries are mostly labour-intensive in nature, thus they can utilize the local employment opportunities suitably. The importance of these industries can be visualized from the fact that in 2010-11 the small scale and cottage industries, numbering 311.52 lakh units, have generated employment to the extent of 732.19 lakh, produced output worth Rs. 10957.6 million and contributed nearly 40 per cent of the total exports of the country.

Considering the importance and the various problems faced by these industries, the Government has taken various steps for the promotion and development of these industries. These measures include both credit and non-credit measures. In India, there is vast potentiality for the expansion of the small sector. The Government has also announced a small-scale Industrial Policy, 1991 for the promotion and development of the sector. The most important peculiarity of this sector is that the small scale and cottage units of the country, producing variety of products would continue to remain within the control and management of the private sector.

9. **Role in the Indian Economy:** The private sector is playing an important role in Indian economy. The importance of this sector in the economy of the country can be visualized from the fact that it contributes to the major portion of national income and employment. The role of private sector is quite dominant in agriculture and allied activities, small scale industry, retail trade etc.
10. **Capital Formation:-** Economic development depends upon the rate of capital formation.
11. **Rising Foreign Private Investments:-** An aspect of the growth of the private sector is a large increase in the presence of the foreign private companies with a sizeable segment of industries under their ownership and control.

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Again, as per 1991 census, the percentage of population working in the government sector, including public enterprises and government administration was only 7 per cent and the remaining 93 per cent of the working population are engaged in the private sector. Thus, even after making a huge volume of investments in the public sector and completing more than 50 years of planning, Indian economy is still broadly based on the private sector.

Private sector is commanding a great control and presence in the non-strategic and light areas of the industrial sector including both durable and non-durable consumer goods, textiles, chemicals, automobiles, foods, electronics, etc. It is leading the development of these industries along with promoting the expansion of small scale and cottage industries.

13.3.4 Progress and Performance of Private Sector

There are both favourable and unfavourable facts associated with the private sector which operates presently in India.

Favourable Factors- The following are some of the positive factors:

1. Government's economic plans have been beneficial to the private enterprises as they provided crucial infrastructure support necessary for their development as well as the establishment of very big market.
2. The initial economic plans of the Indian economy reflected a policy of promoting indigenous products thereby banning the import of such products that might compete with the locally produced goods. This policy had a negative aspect as the private companies were being able to become profitable even when their products were top quality. The new policy promotes competition and aims for better efficiency and higher productivity.
3. Incentives in the form of tax holidays and developmental rebates have helped private sectors develop their business profitably. This support has also been extended by the government through benefits in the income tax and through providing infrastructural facilities regarding land, factory building, power etc.
4. The government has aided the private sector through the establishment of different developmental and financial institutions have been set up by government which have covered the financial needs of these companies by providing long-term loans, underwriting their share and debenture issues, and providing feasibility studies and other services relating to their projects. This has been a major reason for the growth and development of the private sector.
5. Performance of the private sector can be evaluated on the basis of its profitability. Three types of profitability rates can be studied for this evaluation
 - i. ratio of total profit on invested capital

- ii. ratio of total profit to net sales and
- iii. Ratio of net worth to net profit on these measures, the performance is appreciable these profitability ratios also compare well with those of the Indian branches of multinational corporations and the Indian subsidiaries if the foreign companies.

Unfavourable Factors- The private sector of Indian economy is also adversely affected by the huge number of permits and enormous time required for the processing of documents to initiate a firm, however the Central Government has decided to abolish MRTP Act and incorporate a Competition Commission of India to bring the public sector and the private sector at the same platform. The following are some unfavourable factors-

- 1) Heavy taxation has been a problem for private sector in India. Such taxation policy disincentivises production and immobilises funds which might have flowed towards industrial undertakings.
- 2) The corporate sector also heavy relies on financial institutions and other government agencies. A recent study of 400 large companies that accounted for over 50 percent of private corporate turnover revealed that the public sector has a significant presence in most of these owning over 50 percent equity in a large number of these companies.
- 3) The new economic policy environment, is problematic for private enterprise in the context of foreign capital and enterprise. This is specially so on the following counts-
 - i. Foreign companies work in the business-friendly environment of their countries, whereas Indian private enterprises still face stringent laws and regulations.
 - ii. Indian businesses also have to face the negative impacts of high interest rates which lowers their profits and returns on equity employed. This also restricts their ability to make fresh investments and grow.
 - iii. Indian business still functions under the outmoded company law. This makes it difficult for Indian companies to compete with and become multinationals in the true sense of the term.
 - iv. The long delays in approvals for land, pollution etc., makes it difficult for private companies to function efficiently.
- 4) The slow move towards liberalisation has had an adverse impact on the Indian businesses which have not yet adapted to working in the global economy. Overestimating the threat perception, business have been defensive and only talk of buying back shares of companies under its control. Indian business must realise that oligopolistic enterprises with no exportable surplus may be large in a self-sufficient economy but are puny, unviable in an economy going global.

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- 5) Legal barriers to growth negatively affect a large majority of industrial sectors with high growth potential. It is imperative and urgent that reforms are brought in every sector of the infrastructure. Consequently, growth in almost all sectors of interest to the private enterprises is paralysed by the slow development of laws.

After studying both sides of the picture, it can still be concluded that private sectors are being given a lot of benefits in the economy. After all, being an economy which follows a socialist pattern of society, it can not be expected of the government to favour private enterprises more than the public sector.

13.3.5 Problems and Prospects of Private Sector

Following are the some problems with which the private sector in India is suffering:

- 1. Low Priority Industries:-** The first important limitation of the private sector in India is that during the last four decades it has invested most of its capital on the development and expansion of consumer goods industries, having low priority elitist bias, like television and other electronics man-made fibres, refrigerators, automobiles, perfumes and cosmetic etc.
- 2. Lack of Finance and Credit:-** Although the large scale industrial corporate units of the private sector are mobilising their funds from banks, development financial institutions and from market through sale of their equities or debentures but the small scale industries are facing acute problem in raising funds for their expansion.
- 3. High Cost/ Price Economy;-** Another serious failing of the private Industries is that its costs in general are large and the price of products unduly high. Barring a small number of companies which are efficient and show good profitability ratios many are inefficient. Their conversions costs i.e. cost of converting input into outputs are large.
- 4. Heavy Taxation:-** Private sector in India has been operating in an environment of heavy taxation before the recent scaling down of tax rates in 1997-98. Heavy taxation acted as a disincentive to increased production and in mobilised funds which might have flowed into industrial undertakings.
- 5. Industrial Sickness:-** A common feature of the private sector is the growing industrial sickness in many lines of industrial and business activity. Engineering, cotton, jute textile were prone to industrial sickness, but in these days almost all industries—large, medium and small, units faces this problem.
- 6. Industrial Disputes:-** As compared to public sector enterprises, the private sector enterprises suffer from more industrial disputes. Differences and conflicts between the owners and employees regarding wage, bonus, retrenchment and other issues frequently emerge.
- 7. Concentration of Economic:-** The next fault that is laid at the door of the private corporation sector industries is that its operations and functioning

have resulted in the concentration of economic power in a few hands or industrial houses. It is pointed out that some 20 big industrial houses dominate, the private corporate industrial scene, block the entry of many entrepreneurs and misuse their enormous economic clout to create political lobbies in their favour by using means, fair and foul.

8. **Threat from Foreign Competition:-** The process of Liberalisation unleashed in 1991 has opened up the gates to foreign investors and the government has progressively introduced measures to open up the economy to foreign competition. This process of globalisation and integration of the Indian economy with the world economy has led to an unequal competition- a competition between giant MNC (Multinational Companies) and dwarf Indian enterprises. Besides foreign companies have the advantage of business friendly environment in their countries, while Indian private enterprises have still to cope with many controls and regulations.
9. **Declining Share of Net value Added in Total Output:-** A survey of 50 private companies shows that, their aggregate value of output increased by 57.3 percent their total net value added increased by 45 percent the share of net value added in output declined from 23.11 percent to 21.32 percent. This shows a decline in efficiency of these companies. A fall in the share of net value added in output mean that the same amount of raw-materials now generates less output.
10. **Restrictions:-** Corporate sector in India notwithstanding all the recent reforms, continue to be subject to a number of restrictions. In a recent study conducted to gauge the extent of economic freedom, India has been ranked a lowly 118th in the list of 150 countries the world over.

13.3.6 Reasons Behind the Low Contribution of Private Sector

Considering the importance of the private sector, the Government has been undertaking various supporting measures for promotion and development of this sector. But as this sector is mostly guided by the profit motive and have little consideration about the national and social goals, thus the Government has enacted various legislative measures for the control and regulations of the private sector during the last four decades. But too much control and regulations imposed on the private sector has resulted in a lot of hurdles on the path of their development leading to a slow rate of growth of the economy. The main reasons behind the low contribution of the private sector in infrastructural development activities are that:

- The small and medium scale companies in the private sector of Indian economy suffer from lack of finances to welcome the idea of extending their business to other states or diversify their product range.
- The private sector of Indian economy also suffers from the absence of appropriate regulatory structure, to guide the private sector and this speaks for its unorganized framework.

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- The unorganized framework of the private sector is interrupting the proper management of this sector resulting in the slowdown of its development.

Realising this problem, the Government has introduced the policy of economic liberalisation for the uninterrupted growth of the private sector through the announcement of new and liberal industrial policy in 1991 and also introduced some other industrial policy reforms in the subsequent years.

13.3.7 Suggested Measures for Private Sector

In a view of above, if the private sector is expected to meet its obligation, it is imperative that some further steps are taken by the government. Among these the major ones can be counted as follows-

1. The market for corporate control should be allowed to operate without regulatory interference. Both domestic and foreign, individual, institutional and corporate investors should be permitted to participate in the corporate control market.
2. Financial institutions which are typically controlled by the government have a large percentage of ownership in many organizations. However, they are pursued a policy of siding with the incumbent management in all issues. Thus, they have failed in their fiduciary responsibility of monitoring and disciplining corporate managements. Therefore, the government financial institutions should divest their holdings and let ownership reside with private financial institutions and individuals.
3. There should be dramatically less regulation of investment and financing activities that the privatized firms can pursue to maximize the value of their shares. Central and state license regulations should be eliminated.
4. The private corporate sector is accused of corruption, different other forms of economic crimes, and in general showing little regard for the law of land. Part of the problem lies in the lack of transparency in corporate accounts, which often cloak massive fudging. This, combined with inadequate strength in investigative agencies, makes the task of unearthing crooks and prosecuting them even more difficult. One systematic improvement would be mandatory consolidation of accounts in any group-that would force every company to reveal the total complexity of transfers within a group. The forthcoming Companies Act amendment must make consolidated accounts compulsory and not optional. Meanwhile, since deregulation is rendering many officials surplus, they should be retained to provide additional manpower to the investigative agencies.
5. Along with the above good corporate governance need be emphasized. Good corporate governance is all about accountability. As financial markets become global the demands of institutional investors from advanced nation and the requirements of their stock market will eliminates which are poorly

governed and whose shareholders are cheated. The only way for Indian business to survive will be prove itself equal to the global norms and embrace the emerging universal code of goods corporate governance.

6. A more sensible exit policy is warranted. National resources are wasted by insisting that regardless of the level of demand for the products of a corporation. It should remain in operation. Without sacrificing the interest of labour, the exit policy should permit allocation of corporations' assets to their most productive use.

Private sector and the public sector has to play a mutually interacting role, as a recent simulation study on the relative roles of two sectors in the Indian economy concludes: "...the present discussion in the country on the relative role of public and private sectors in the economy is misplaced. While the public sector needs reforms, the possibilities of substitution by private sector may be extremely limited given the stage and the structure of the economy. There is scope for improving the production function of both sectors." It is wrong to view the relationship between the public and private sector as zero sum game where increased prosperity for one sector must be achieved at the expense of the other. The reality however is that the prosperity of both these sectors in inextricably inter-linked

Check Your Progress

4. How is private sector categorized?
5. Name the profitability rates that can be studied for evaluating the performance of private sector.

13.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Public Corporations are established after passing a bill in the Parliament.
2. Public sector enterprises contribute to the resources of the central government by way of dividend, excise duty, custom duty and corporate taxes.
3. The main factors responsible for the under utilization of capacity in public sector enterprises are stagnation in the industrial sector, inefficient operation, political interference and poor management and labour disputes, etc.
4. Private sector can be conveniently classified in three groups:-
 - Unorganized Sector – It includes individual industrial producing units
 - Organized sector: It includes large-scale industrial units and big industrial houses.
 - Small-scale industrial units

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5. Three types of profitability rates can be studied for the evaluation of the performance of private sector:
- ratio of total profit on invested capital
 - ratio of total profit to net sales and
 - Ratio of net worth to net profit

13.5 SUMMARY

- During the colonial period, when India was a part of British India, industrial policies and economic policies in general were essentially shaped by British interests.
- At the time of independence, activities of the public sector were restricted to a limited field. There were few 'Public Sector' Enterprises in the country. The country was facing problems like inequalities in income and low levels of employment, regional imbalances in economic development with a weak industrial base, low level of savings, inadequate investments, and infrastructure facilities. and lack of trained manpower.
- The 1948 Resolution envisaged development of core sectors through the public enterprises. Public Sector would correct the regional imbalances and create employment. After independence, the area of activities of the Public sector expanded at a very rapid speed.
- Public sector enterprise is that enterprises which is owned and managed by government. Public enterprises are regarded as the main instrument of accelerating the growth rate of industrial output.
- The share of the industrial sector in G.D.P. at Factor Cost has increased slowly but steadily during the plan period. Government developed backward state and regions by setting up giant undertakings. Thus the major proportion of public investment was directed towards backward states and regions. Public sector has made significant contribution towards achieving social objective.
- In the mixed economy of India, private sector plays a complementary role to the public sector. When the ownership management and control of business and industrial enterprises are in the hand of private entrepreneurs it is called private sector.
- Private sector can be grouped by three organised, unorganised and small industries. The government has fixed a specific role to the private sector in the field of industries, trade and service sector. The importance of this sector in the economy of the country can be visualized from the fact that it contributes to the major portion of national income and employment.

- Private sector is playing a positive role in the development and expansion of aforesaid group of industries. Besides, the development of small scale and cottage industries is also the responsibility of the private sector.
- The private sector of Indian economy is also adversely affected by the huge number of permits and enormous time required for the processing of documents to initiate a firm.
- The unorganized framework of the private sector is interrupting the proper management of this sector. Considering the importance and the various problems faced by these industries, the Government has taken various steps for the promotion and development of these industries. The private sector and the public sector have to play a mutually interacting role.

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13.6 KEY WORDS

- **Public sector:** It refers to all the industrial and commercial enterprises which are owned by the government itself or by some other agency on behalf of the government.
- **Private sector:** It refers to that sphere of economy where there is private ownership and control over the means of production.

13.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What are the different types of public enterprises?
2. Give any two problems faced by public sector in India.
3. Give classification of private sector.
4. List any four problems faced by public sector in India.
5. State the favorable aspects of private sectors.
6. What are the reasons behind the low contribution of the private sector?
7. List any four problems faced by private sector.

Long Answer Questions

1. Discuss rationale of public sector in India.
2. Explain the growth and performance of public sector.
3. Discuss the achievements of public sector.
4. What are the main problems of public enterprises? Give remedial measures for improving performance of public enterprises.

5. Discuss the importance of private sector.
6. Discuss progress and performance of private sector.
7. What are the reasons behind the low contribution of the private sector?
Suggest measures for the improvement of private sector.

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13.8 FURTHER READINGS

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BLOCK - IV
INDUSTRIAL TECHNOLOGY

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**UNIT 14 INDUSTRIAL
TECHNOLOGY AND
DEVELOPMENT**

Structure

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14.0 INTRODUCTION

Economic development depends to a large extent, on the state of technology available in a country. Technology is the technical knowledge used in production or embodied in capital or machinery. In the broader sense, it can be regarded as a factor input or resource. It is evidently closely related to technical knowledge and it includes not only the engineering aspect of production but also management and marketing activities.

In other words, technology includes methods used in non-marketed activities as well as marketed activities. In the words of Frances Stewart, 'It includes the nature and specification of what is produced-the product design as well as how it is produced. It encompasses managerial and marketing technique managerial and marketing techniques as well as techniques directly involved in production. Technology extends to services-administration, education, banking and the law,

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for example- as well as to manufacturing and agriculture. A complete description of the technology in use in a country would include the organisation of productive units in terms scale and ownership.’ Thus it refers to the body of ‘skills, knowledge and procedures for making, using and doing useful things.’

14.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the meaning of technology
- Describe the role of technology in the industrial development
- Explain the concept of technology transfer
- Discuss some of the recent reforms to encourage the industrial sector

14.2 MEANING OF TECHNOLOGY

Technology is considered as the basic factor in the process of economic growth. Technological change means technical knowledge used in the production of capital and machinery. The various changes in technology lead to increase in the productivity of labour, capital and other factors of production. Technological progress comprises of creation of skill, new means and methods of production, new uses of raw-materials and wide spread of machinery. Technology is the most powerful means of wresting power from nature in all possible way. Advancement in scientific research has given rise to most of the sophisticated new technology. The economists define technology as knowledge used in production, commercialisation and distribution of goods and services. However, as technology can be used in various forms such as machinery, equipment process and skill. Now-a day it is known as means for the survival and progress of human community around the globe.

14.2.1 Role of Technology in Economic Development: India as a Global Hub

Technical progress and economic development are intimately related to each other, although the relationship is a complicated one. Technological progress is the logical concomitant of economic development and economic development, in turn, depends to a large extent on technical change which leads to an increased output per unit of labour. It refers to a change in the production embodying all known techniques. It is thus the availability to technology that determines the efficiency of production and pace of growth. In the words of H Bhabha, ‘What the developed countries have and the underdeveloped lack is modern science and an economy based on modern technology. The problem of developing the underdeveloped countries is, therefore, the problem of establishing modern science in them and transforming their economies to one based on modern science and technology’. Modern technology is changing rapidly and no country can hope to maintain steady advance

unless it keeps pace with current developments. There are three basic classifications of technological progress:-

- Neutral
- Labour-saving and
- Capital-saving.

Neutral technological progress takes place when higher output levels are achieved with the same quantity and combination of factor inputs. Simple innovations like those that arise from the division of labour can result in higher total output levels and greater consumption for all individuals. By contrast, progress may either be labour-saving or capital-saving technological progress, i.e., higher level of output can be achieved with the same quantity of labour or capital inputs.

Technological progress may also be labour or capital-augmenting. Labour-augmenting technological progress occurs when the quality or skills of the labour force improve and upgrade. Similarly capital-augmenting technological progress results in the more productive use of existing capital goods as for example, the substitution of steel for wooden ploughs in agricultural production.

The source of economic progress can be traced to a number of factors but investments that improve the quality of existing physical and human resources, that increase the quantity of these same productive resources and that raise the productivity of all or specific resources through invention, innovation and technological progress will continue to be the basic factors in accelerating economic growth. The origin of modern technology in the Western countries can be traced back to the industrial revolution. In most European and American countries, the economic and social institutions were such that they facilitated and encouraged the development and use of modern technology. There existed a class of dynamic and daring entrepreneurs who were prepared to take risks and introduce innovations which promised them large profits and as a result a whole breed of new commodities entered the markets.

Innovations in the Western countries were both *cost-reducing* and *demand-increasing* and it paved the way for expanding market for the industrial goods. This served as an incentive for the entrepreneurs to produce more new and improved products with the help of more and more advance technology. Once this process was started, it gained momentum and the competition spread beyond national frontiers into the sphere of international trade. The spread effects of the inventions and innovations led to more sophisticated and technically superior goods at low costs to the consumers. In other words, technological changes and innovations were primarily responsible for the economic development of the Western countries.

The example of Japan is most revealing on the role of technology in economic development. This country like other pre-industrial societies was mainly dependent on agriculture a century ago but today it has surpassed almost all the advanced countries of the world in economic progress—thanks to the application of modern

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technology in the economic field. Besides the massive importation of technology, the Japanese made concerted efforts to absorb, adopt and expand it to their own needs and requirements and also to generate their own advanced technology. In addition, all steps were taken to create the proper environment for the successful introduction of new techniques of production. In this connection Cairncross observe, 'There was from the outset a deliberate efforts to acquire experience abroad. Many Japanese went overseas to study industrial practice and the government set out to build new industries using foreign equipment and methods. There was an outlook congenial to the importation of technology and continuous search for those areas where technological transfer had most to offer or would encounter least difficult.' The rapid economic progress of the Western countries and Japan abundantly shows the role of technology as a factor contributing to accelerated rate of economic growth.

M.G.K Menon, an eminent scientist, has strongly pleaded for the use of modern techniques known in the world today in the fields like modern electronics connected with computers, communication technology, methods of surveying earth-resources, search for alternate energy technologies, etc. In his own words, 'This is not for handwaving or prestige, but because it represents the best investment.' The late Vikram Sarabhai was also strongly in favour of developing satellite technology in India and paradoxically enough, it is more economical than the conventional network of telegraph, telephone, radio and television service. In this connection, S.Sampath, Deputy Director I.I.T, Chennai observes, 'Advancing technology, properly understood, harnessed and rationally used, will be the horse that will draw the chariot of our development into the Promised Land of economic well-being and an improved quality of life for all of us.'

One of the most important causes of the poverty of underdeveloped countries is that they suffer from technological backwardness. In these countries, the low level of technical knowledge can easily be seen in the high cost of production and low productivity of labour and capital. The uneven development of technology has created technology gap in two types of countries particularly during the last century.

No doubt, one can find in an underdeveloped country like India the most modern technology being used side by side with the most primitive in the same industry, yet the fact remains that the impact of modern techniques is extremely limited both in extent and depth. Majority of the productive units still make use of the techniques which can be described as 'inferior' when compared with those of their counterparts in advanced countries. A United Nations Study observes, 'While some of this new technology has reached the underdeveloped countries, it has only affected certain limited sectors of their economics and has not permeated their social and economic structures: the main fields of production are largely untouched.' It goes on to say, 'unless a special effort is made, the process of technological development in the underdeveloped countries will be relatively slow and the gap in technology will continue to grow wider as the cumulative scientific progress of the developed countries accelerates.'

It is, thus, clear that under-developed countries can solve their problems of poverty, hunger and unemployment only by an extensive use of modern technology in all its aspects. Technical progress and innovations bring about limitless opportunities of progress and result in greater output, shorter working hours, the creation of a host of skilled jobs, production of new and better quality goods and services, more efficient use of raw-materials, improvement in the quality of life, etc.

However, it is sometimes pointed out that modern technology as it exists today in the advanced countries of Europe is not suitable for underdeveloped countries. It is highly capital-intensive and will lead to displacement of labour and thus cause unemployment besides it is exploitative in nature and uses resources such as metal and fossil fuel faster than they are created by natural processes. Besides, it has high pollution rate. But these objections and other simply point to the adoption of appropriate technology relevant and conducive to the requirements of under-developed countries. It needs no stressing that the wide application of technology alone can solve the economic problems of stagnant and backward economies and usher in an era of hope for their learning millions.

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14.3 TRANSFER OF TECHNOLOGY TO UNDERDEVELOPED COUNTRIES

Technology transfer implies that transfer of technical knowledge from one country to another either through deliberate government policy or by private channels of communications. The agencies involved in the transfer of technology are government, commercial enterprises such as multinational corporations, private agencies or international non-profit organisations. Modern technology has entered the underdeveloped countries mostly along with foreign capital and enterprises in primary industries producing for exports such as mining, petroleum, plantation etc.

14.3.1 Need for Transfer of Technology

It has been observed that the main cause of poverty in underdeveloped countries is that they suffer from the technological backwardness. The main reason of economic backwardness is the low level of technological advancements as the economic development and technological advancement are co-related to each other. A specific level of technological advancement is the necessary pre-condition for rapid growth. It is therefore, the level of technology which acts as index of the economic development in the country. In fact, the technology can be regarded as primary source in economic development and the various technological changes contribute significantly in the development of under developed countries. The task of technological change or technological adoption is very difficult in underdeveloped countries because it is capital intensive. It is observed that the absence of proper technological change slow down the economic growth.

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Technological advancement and economic growth are interrelated. Rapid rate of growth can be achieved through high level of technology. Schumpeter observed that innovation or technological progress is the only determinant of economic progress. Thus it is the technological progress which keeps the economy moving. Invention and innovations have been largely responsible for rapid economic growth in developed countries. The need for technology transfer to LDCs from the developed countries arises on the following grounds:

- 1. To overcome Backwardness:-** LDCs are in the backward state of technology. Their technological backwardness is reflected in high average cost of production despite cheap labour in low productivity of labour and capital, in the predominance of untrained and unskilled workers, and in high capital output ratio. Technological backwardness in turn has led to their economic backwardness which is reflected in poverty, inequalities and unemployment. The transfer of technology from the developed countries brings advanced production techniques and machines, innovations in products and skilled personnel organization experience, marketing techniques etc. thus technology transfer is required to overcome the backwardness of the LDCs.
- 2. To Fill Technological Gap:-** There exists a wide technological gap between the indigenous stock of technology and technology required for faster growth in the LDCs. This gap can be bridged by technology transfer from the developed countries. Modern technology supplements the available indigenous technology and also helps in modifying and adapting advanced technology in the LDCs. According to Prof. Euznets, LDCs most import modern technology to accelerate their productive capacity in the short run because they cannot wait until they themselves invent or modify the technology of advanced countries. But as they adopt modern technology they must develop their indigenous technical skills by adapting modern technology in keeping with their factor endowments.
- 3. To Increase Productivity:-** The transfer of technology from the developed countries is required by the LDCs to increase the productivity of labour, capital and other factors of production in order to lower the per unit cost of production. This can be done by transferring capital-intensive technologies from the developed countries.
- 4. To Make LDCs Competitive:-** The LDCs require transfer of technology to make their economies competitive in the international market. These countries mostly export unprocessed products, raw materials and substandard articles. As a result, their products fetch low prices because their competitive power is weak in the world market. By technology transfer, they can protect their economic interest by making their goods competitive in the international market. This is possible by developing export-oriented and import-substitution industries through technology transfer.

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- 5. To Reduce Poverty, Inequalities and Unemployment:-**The three pressing problems of the LDCs are poverty, inequalities and unemployment which can be solved by raising the level of income of the people. By transferring labour-intensive technologies from the developed countries, the LDCs can provide larger employment opportunities to the poorer people. This tends to raise their incomes and helps in reducing poverty and inequalities.
- 6. To Increase the Growth Rate:-** Technology transfer is needed by the LDCs to increase the growth rate of their economics. For this long-term policy of technology transfer is required for them. Prof. Edward Chen¹ has classified the long term economic growth in relation to the technology level into three stages according to him the critical determinant of long term economic growth difference between T (technology level) and W (wage level) $Y=F(T-W)$ where Y is the rate of economic growth.

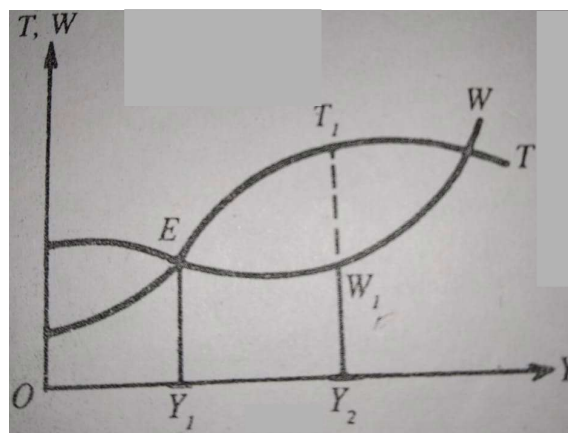


Fig. 14.1 Technology Level and Wage Level

In the first stage, the rate of growth is slow because the technology level (T) is lower than that of wages (W) as explained in Figure 1. In the figure, the T Curve is like a logistic curve with an increasing growth rate at first and then a decreasing rate. The W curve is S-shaped with the rate of increase decreasing at first because of unemployment and increasing at a later stage when labour becomes scarce. The low income countries fall in this stage which is to the left of point E in the figure. It is in the second stages from OY_1 level onwards that the growth rate is fast increasing because T is fast increasing and is higher than W. The majority of LDCs of Southeast and East Asia and Latin America fall in this stage. Technology transfer increases the technology level and widens the gap between T and W, thereby increasing the rate of economic growth (F). It is $T_1 - W_1$ at OY_2 level in the figure. After OY_2 level, the third stage begins in which economic growth slows down after majority. The T curve is increasing as a decreasing rate and the W curve is rising at an increasing rate because of relatively scarcity of labour. This is the stage in which the developed countries are today.

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7. **To Develop Basic and Key Industries and Infrastructure:-** The LDCs need technology transfer to develop basic and key industries and infrastructure. Such countries lack in basic and key industries and such infrastructure as transport, communications, power, etc. Their natural resources lie dormant and remain unutilised, underutilised or misutilised. This is because all these involve high risks, large capital, long gestation period and modern technology for their development. Thus technology transfer is required by the LDCs to build their infrastructure, establish new industries, tap natural resources and open new areas.

8. **To Solve Balance of Payments Problem:-** Transfer of technology is also needed by the LDCs to ease their balance of payment of payments situation. When the transfer of technology brings capital, machinery, knowhow, experts, etc., there is a greater inflow of resources without little remittances abroad in the early stage of development. Repatriation of profits, royalties, etc. begin after the recipient firms become fully operational and break-even. Further, by helping in the establishment of export-oriented and import-substitution industries, the transfer of technology tends to increase exports and reduce imports, thereby improving the balance of payments position of the LDCs.

9. **To Solve Socio-Economic Problems:-** Transfer of new technologies prove efficient in solving many of the pressing social and economic problems of the LDCs which retard their economic growth. For instance, the Green Revolution has shown that how the use of modern science and technology can boost grain production and put an end to malnutrition and famine in overpopulated LDCs and even make them self-sufficient in the production of food grains.

10. **To Save Time and Money:-** Moreover, the LDCs can make use of the already tested and existing benefits of modern technology without having to traverse the difficult path through which the developed nations had to pass through to achieve the present high technological level, thereby saving their time and money.

The LDCs need technology transfer for their rapid and all round economic development. It is essential for increasing the productivity of men and machines, for building infrastructure, developing agriculture and industry so as to make them internationally competitive, for exploiting and making and optimal use of their natural resources, and for developing labour, organisational, administrative and entrepreneurial skills etc. Thus technology transfer is an engine of growth for LDCs.

Check Your Progress

1. What does technological progress comprises of?
2. When does labour-augmenting technological progress occur?
3. Why do LDCs require transfer of technology?

14.4 CHANNELS AND PROBLEMS OF TECHNOLOGY TRANSFER

Let us analyse the channels and problems of technology transfer.

14.4.1 Channels of Technology Transfer

There are four channels or modes of technology transfer from one country to another and across enterprises. They are as follows:

- (i) **Transfer of Knowledge:-** The transfer of technology takes place when knowledge about modern technologies is passed on through scientific exchange in the form of research journals, books and other published material.
- (ii) **Commercial Channels:-** Technology is also transferred through commercial channels on a bilateral basis from private firms, mostly MNCs to state-owned enterprises, and branches of MNCs operating in the LDCs. This is also known as intra-firm technology transfer which is in the following forms:
 - (a) Turnkey project
 - (b) Specialised services such as financial, managerial, engineering, construction, etc;
 - (c) “project packed” sales of technology which may include raw materials, machinery, equipment, spare parts, management, brand names, patents, trader marks, licensing, joint ventures, wholly owned subsidiaries, etc.;
 - (d) “process packed” sales of technology which include complete production processes or plants alongwith market survey, product-mix, drafts, designs, technical specification, know how, commissioning, supervision, and services of experts for training local personnel;
 - (e) “technological package” or “simple direct” sales of technology which include “embodied” or outright sales of machinery and equipment or consulting services (disembodied) like managerial, marketing, including access to foreign markets, and other expertise; and
 - (f) “unpacked” sales of technology or direct investment in the form of machinery, equipment, raw materials, processed products, commissioning, designing, licensing, training, management or supervision.
- (iii) **Government Channel:** The transfer of technology also takes place through government channels in the form of technical assistance which is not related to the direct promotion of commercial goals. This is usually in the form of providing educational and training facilities to students and personnel of the LDCs in colleges and institutions in developed countries. Further, experts and advisor come to the LDCs to advise and train people in various fields of economic activity such as establishing steel plants, hydroelectric projects, oil exploration, and building other infrastructure.

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(iv) **International Organizations:** Many international organizations under the aegis of the UN, the European Community, the Asian Development Bank, etc. promote the transfer of technology to the LDCs through training of their personnel, providing vocational training, conducting seminars and short-term course, helping in research by providing necessary equipment, sending specialists and consultants to impart training in various fields, to evaluate natural and economic resources, etc. The transfer of technology through governments and international organizations are mostly in the form of aid.

Thus technology is transferred from developed to developing countries through a number of channels enumerated above. But out of them, the commercial channels are more effective, popular and important in contributing to the economic development of LDCs than the other channels, even though they create many problems for the LDCs.

14.4.2 Problems in Technology Transfer

The problems transfer of technology from the developed countries to LDCs arises both from the suppliers and buyers of technologies. Problems arise from the supply side because the technological markets are mostly imperfect and occupied by the MNCs. On the demand side, the purchasers of technologies have weak bargaining power due to backwardness, urgency of importing technologies, and lack of information about the availability of appropriate technologies. Consequently, the suppliers exploit the purchaser of technologies. Given these two basic factors, problems relating to the transfer of technology are discussed as under:

- 1. Primitive Environment:-** The utilisation of modern technology requires a particular type of social environment which should facilitate the utilisation of modern technology. Unfortunately, social institutions as they exist in most of the underdeveloped countries are unsuited to the new techniques. Peoples are not enthusiastic for the introduction of new techniques. In traditional agriculture, the farmers prefer to continue with their traditional methods of cultivation under the plea that what was good for his ancestors must be equally good for him too. The use of modern technology in such situations involves several difficulties. Therefore, there is need to bring about fundamental changes in the entire traditions and cultural pattern of the people before the transplantation of new technology to these country.
- 2. Technological Dependence:-** When the MNCs or private firms enter into agreements with firms in the LDCs for the transfer of technologies, they restrict their right to use or change or transfer the technology according to their discretion or requirements. This leads to technological dependence.
- 3. Lack of Basic Facilities:-** New techniques are expensive and require modern equipment and a number of other facilities. Besides a considerable degree of skill and training are needed for the application of modern technology to production. Capacity of country to absorb modern technology depends on its possessing adequate number of trained personnel. Only

fully trained and competent scientists and engineer can judge the merits of latest technologies developed abroad and make a right choice of appropriate technologies. The twin requirements for absorption of new technology are availability of capital and training facilities for an adequate number of personnel. It is rightly marked that capital and technology are joint input in one process, the use either of which involves necessarily the use of other. Technological progress involve necessarily the investment of capital in human being and in training and instructing them in new technology, and administrative processes for its transmission in capital goods embodying it, and in capital works and facilities supporting and developing the whole process. But under developed countries lack all these requisites. The deficiency of capital and lack of trained and skilled labour force prevents them from scrapping of the old techniques and using up-to-date and modern techniques instead.

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- 4. Diverse Conditions:-**The conditions for acceptance of knowledge vary from country to country because of the difference in their social structure political condition, economic environment, level of education and skill etc which call for different methods of transfer. The problem therefore, arises as to whether the technology as it exists in advanced countries is not flexible enough to adjust to the need of underdeveloped countries. This is an intricate problem as the answer depends upon a number of considerations such as level of education, availability of capital, the state of knowledge and skill obtaining in different countries. The problem, thus is not merely of importing technology available in advanced countries but of adopting it to the resources and needs of the underdeveloped countries which are different from those of the developed ones. Technology evolved for the cultivation of land in developed countries may not be successful in underdeveloped countries because the quality of land and climatic condition are different therefore, the underdeveloped countries will need different type of manures and system of crop rotation.
- 5. High Costs:-** The seller prefer to sell technologies in ‘project packages’ which are tied to specific projects or products. The buyers are compelled to buy such technologies which require the purchase of raw materials, machines, spares parts and services of parent companies at costs much higher than those prevailing in the competitive world market. It is estimated that they are normally higher by 30-40 per cent.
- 6. Hinder Development of Local Entrepreneurship:-** Often, the MNCs transfer new technologies to their own branches in the LDCs. But these branches do not share the new technologies with local firms and use them for their own benefits. As a result, new technologies do not enter other spheres of national economies and thus reduce the opportunities for the development of local entrepreneurship.

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7. Manipulate Prices:- When the MNCs transfer technologies and operate their own branches in the LDCs, they manipulate the prices of their products to their own advantage and thus keep most of the gains to themselves. If restrictions are placed by the host country on the transfer of profits to the parent company, they use these profits in holding the majority shares of other companies, thereby spreading their economic strength in the country and preventing the growth of related industries locally.

8. Tax Evasion:- At the time of technology transfer, the foreign firms insist on large tax concessions from the host country in the form of tax holiday, repatriation of large percentage of profits, high royalties for the use of patented technology, high wages for the expertise, etc. As a result, they are able to avoid taxes and earn large profits.

When technology transfer is of the direct investment type, the MNCs which operate their branches in the LDCs resort to tax evasion through 'transfer pricing'. They are largely engaged in intra-firm trade by shipping goods from one industry to another or providing services from the parent office to all the branches in different countries. They charge arbitrary prices in such intra-firm transactions and manipulate their account so as to evade taxes in the host country.

9. Exploitation of Workers: When technology transfer is tied to the training of workers in new skills and trade in the host country, they are unable to shift to other industries. Thus the mobility of labour is restricted. As a result, such firms exploit the workers by forcing them to work for longer working hours. This causes psychological and nervous strains. If the workers are engaged in chemical and allied industries, they are liable to professional diseases.

10. Social Tensions:- There are large wage differentials between workers trained in new technologies and workers engaged in local firms in the LDCs. Such wage differentials increases income inequalities. An elite class of workers is created which leads to a dual society and causes social tensions within the economy, thereby retarding growth.

11. Limited Labour Absorption:- Developed countries mostly transfer capital intensive technology to the LDCs which has limited labour absorption capacity. Such a technology fails to solve the acute problem of unemployment in LDCs.

12. The Problem of Payments for Technology :- Technology generation and industrial innovations are commercial ventures and as such technology import requires payments for the same. The cost of generating the technology must be determined with a view to decide the magnitude of payment but such an assessment is not easy. Then howsoever liberal the terms of transfer may be payments either in the form of royalty or outright purchase is bound to be colossal. The only way out of complications arising from the outflow of such a volume of resources is to generate one's own technology. In this connection, the new order declaration has laid down that all efforts should be made:

- i. To formulate an international code of conduct for the transfer of technology corresponding to needs and conditions prevalent in developing countries.
- ii. To expand significantly the assistance from developed to developing countries in research and development programmes and in the creation of suitable indigenous technology.
- iii. To give access on improved terms to modern technology and adapt that technology as appropriate, to specific economic, social and ecological conditions and varying stages of development in developing countries.
- iv. To adapt commercial practices governing transfer of technology to the requirements of the developing countries and to prevent abuses of the rights of sellers.
- v. To promote international cooperation in research and development and the legitimate utilisation of natural resources and all sources of energy

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13. Outmoded Technology:- Often, the MNCs export outmoded and discarded technology to the LDCs. Such a technology is somewhat cheap and of a lower capital intensity, but it entails high costs in terms of repeated breakdowns and constant repairs. In the absence of the availability of spares parts in the supplier country, such technologies become useless and bring huge loss to the purchasers in the LDCs.

14.4.3 Measures to Accelerate Transfer of Technology

To accelerate the process of transfer of technology in developing /less developing countries some suggestions are made as under-

1. The successful transfer to technology needs an adoption of liberal trade policy towards manufacturing project in order to increase latest import capacity.
2. Policy of protection and import substitution may be better for the efficiency of production and quality of goods.
3. Large international agencies like IMF, World Bank, IFC should come forward and encourage foreign technology which is the most suitable to these countries.
4. For the transfer of technology selected personnel should be sent to advanced countries to learn technology. Special entrepreneurial class should be created for this purpose.
5. In order to encourage transfer of technology concrete steps should be taken to impart education and training. Moreover, there must be special advisory and extension service with a view to promote the use of latest technology in small industries.

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6. Developing countries should design their industrial licensing policy such way so that it may not hamper transfer of technology.
7. Multinational and international firms have a special role in dissemination of advanced technology. They should design technology based on indigenous material.

14.4.4 Appropriate Packages of Technology Transfer

In the light of the problems faced by the LDCs in technology transfer, the question arises: what is the most appropriate package of technology transfer for them? Technology transfer as a package consists of capital, technology, managerial and marketing skills and information services rather than just the flow of financial resources.

The most appropriate package of technology transfer should be one that contributes to increasing the level of technology, generating employment, reducing inequalities and increasing the growth rate in the LDCs. It is generally argued that the technologies transferred to the LDCs are very capital-intensive for the given factor endowments and factor market conditions prevailing in them. But the developing countries have different factor endowments and factor market conditions. They are also in different stages of growth. It is therefore, better to have an eclectic approach for explaining the most appropriate package of technology transfer to the LDCs. Prof. Edward Chen applies Dunning's Eclectic Theory to explain the most appropriate technology transfer to the LDCs.

The first factor in the eclectic approach is the product to be produced. Prof. Vernon's Product Cycle Hypothesis suggests that the production of a product goes through three distinct stages: the new product, the maturing product and the standardised product. In the new and maturing product stages, the production processes are relatively more capital-intensive and technology-intensive than in the standardised product stage. So, firms producing in these two stages transfer their technologies aiming at the domestic market of the LDCs. They, therefore, transfer capital-intensive technologies to the LDCs. When the product becomes standardised, the production process becomes more labour intensive and skill-intensive. In this stage, firms transferring their technologies aim at exploiting the lower cost structure of the LDCs. They, therefore, transfer labour-intensive technologies to LDCs. Such technologies are used in the LDCs to manufacture for exports to the technology-exporting countries or to other developed and developing countries.

It can be concluded on the basis of the Product cycle Hypothesis that for the LDCs producing for exports, the more appropriate technology transfer should be labour intensive. This is because the production of standardised products for exports is more in line with their comparative advantage and technology used is more appropriate to the local conditions. This has been the case with many Southeast and East Asian countries.

On the other hand, the LDCs engaged in the production of products at the maturing stage primarily for the domestic market should transfer basically capital-intensive and technology-intensive techniques from abroad. Such activities include mining and the manufacturing of automobiles, machine tools, electrical equipment and a variety of consumers goods. This has been the case in many countries of Latin America and Africa. This is because domestic market-oriented firms do not have comparative advantages over the foreign suppliers of such products.

The second factor that governs the most appropriate technology transfer to the LDCs is the stage of economic development of an LDC. Countries with different levels of development exhibit different characteristics in terms of: (i) the availability of skilled labour and managerial staff; (ii) the range of available techniques; and (iii) the extent of factor-price distortions. The availability of skilled labour and managerial staff is essential for the effective supervision of workers for the use of labour-intensive techniques. If the extent of factor price distortions is small and the range of available techniques is large, a more appropriate package of technology transfer to the LDCs in the form of capital, technology, managerial and marketing skills and information technology is possible. But in those LDCs where various institutional barriers in factor markets exists in the form of labour codes and protectionist policies, they result in serious factor distortions and structural characteristics pointing towards low level of development.

Last but not the least, an LDC should import such a package of technology that is easy to learn, diffuse and assimilate in keeping with their factor endowments and technological capabilities. The acquisition of technological capability is the most important factor to overcome the problems faced by an LDC. Technology capability is the capacity 'to produce more efficiently, to establish better production facilities and to use the experience gained in production and investment to adapt and improves the technology in use. The main way of doing this is to build on what can be obtained from abroad while developing local capabilities in areas where it takes the most sense'. In other words, technological capability is meant to select, diffuse and build on established technology from abroad. It can be promoted by government action in providing education, training and R&D facilities, fostering internal and external competition and encouraging the development of information services and quality control in the LDCs. The right use of technology transfer in the LDCs depends on the existence of technological capabilities.

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Check Your Progress

4. What are unpacked sales of technology?
5. Name the factor on which the capacity of the country to absorb modern technology depends on.
6. What do foreign firms insist on at the time of technology transfer?

14.5 RECENT CENTRAL GOVERNMENT INITIATIVE TO ENCOURAGE INDUSTRIAL SECTOR

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Small business/small scale industry contributes significantly towards industrial production of the country. They produce variety of products ranging from traditional ones to hi-tech ones. SSIs uses traditional technology to produce simple items and high-tech products are produced with sophisticated state of art technology. Government has to play major role in strengthening the technological base of SSIs. The various steps taken by the Indian government for the technological upgradation are as follows:

1 Incentives to SSI Units acquiring ISO-9000 Certification: The government has been considering a scheme to enhancement the international competitiveness of the Small Scale Sector. As a step in that direction, Government is operating a scheme to provide incentives to those Small Scale Undertakings who acquire ISO- 9000 Certification or its equivalent.

2 Salient Features of the Scheme: Following are the features of the scheme-

- i. The scheme envisages reimbursement of charges of acquiring ISO-9000 or its equivalent to the extent of 50 percent of the cost subject to the maximum of ₹ 75.000.
- ii. The application of reimbursement should be submitted to the Development Commissioner (SSI), Nirman Bhawan New Delhi 110001 along with copies of the following documents-
 - permanent SSI/Ancillary Registration Certificate of DIC/State Director of Industries valid as on date.
 - ISO-9000 series certification or its equivalent award of the units.
 - Documents showing proof of payment of charges made to the Certification Agency.
- iii. The small Scale/ancillary Undertaking are eligible to avail the incentives.
- iv. The scheme is administered by Development Commissioner (SSI).
- v. The scheme is applicable for one hundred Small Scale /Ancillary Units on first come first serve basis.
- vi. The proposal for reimbursement would be scrutinised and approved by a screening committee set up under the Chairmanship of Additional Secretary and DC (SSI).

3. Ancillary Development Programme:- The main of this programme to incentivize both the public and private companies to outsource or offload the parts of their production process, intermediaries, services, etc., to ancillary units. There are of course advantages to all the stakeholders. The large-scale units have several advantages like saving in investments, inventories, employment of labour etc., along with getting the items of the desired specification, while the small scale unites benefit from getting assured market

for their products, availability of technical assistance and improved technology from the parent units.

For the promotion of this ancillary programme in the country the Small Industry Development Organization is the nodal agency of the Central Government and Ancillary Division at Headquarters. Constant liaison has been maintained with administrative ministries both at Central and State levels, Development of Public Enterprises, public/private sector undertakings and other industrial development agencies through various programmes. These include exhibitions, buyers-seller meet, plant level committee meeting, State level ancillary meeting, visit to public/private undertakings, etc. vendor development programmes, etc.

A major part of SISIs in the country at important cities for the promotion of fruitful and lasting contracts between large medium undertakings and small scale ancillary units are sub-contracting exchanges. The SCXs are responsible for keeping information regarding the spare capacity for different facilities as available with the competent small scale units. These SCXs also obtained such items from large units which are required by them and can be manufactured in the small scale sector. These SCXs organise contacts between Buyers and Sellers through different programmes like Vendor Development Programmes, Buyers and Seller Meet and Exhibition etc.

There has been increased stress on the development of ancillary industry in the new development policy in the country. This has been mentioned through the development of existing SCXs and setting up of new SCXs by industrial associations and other non-Governmental Organisations. As a part of the follow-up of new industrial policy, existing SCXs have been equipped with latest equipments. Additionally, there have been increased efforts to equip these SCXs with other facilities like FAX, computer Terminals, etc. for judicious utilisation of services. SCXs established by industrial organisations will be eligible for registration as SSSBE and will entitled to get benefits as available to tiny sector units.

Getting timely funds and payments from the parent units was one of the major problems faced by most of the ancillary units. To remedy this problem, an act has been passed under which interest is payable on the delayed payment by large undertakings. State Level Ancillary Advisory committees have been set up in almost all the states to provide advisory recommendations for infrastructural facilities and to recommended measures for the promotion of ancillary industry in the state and to monitor the outcome of these efforts. SLAACs have members from SISIs. State industries Department, Industrial Associations, Large Undertakings, Industrial Development Agencies, Banks, Financial Institutions etc.

Other Activities

- Vendors development programme
- Indigenisation of defence items
- State Level Ancillary Advisory Committee Meeting

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- Plant Level Committee Meetings
- Registration with SCXs
- Supplies to Public Sector Undertakings
- Standing Committee/Ancillary Development
- Ancillary Development Programme

Small Entrepreneur Management Assistance Scheme:-The Scheme envisages creating a corps of suitably trained multidisciplinary Barefoot Manager/Small enterprise management assistants out of unemployed non-technical graduates with the twin objectives of:

- Making readily available to the SSI units suitably trained Management Assistants
- Open up employment avenues for graduate particularly from non-technical streams
- The Scheme will be implemented by reputed NGOs/VOs/Management Institute and monitored by SIDO with the help of its field setup and State Governments. This Scheme will also be implemented through autonomous training institutes of SIDO and Central/State Government.

The assistance envisaged in the Scheme is one time capital grant not exceeding ₹ 3 lakhs per beneficiary NGOs etc. for procuring the key inputs of training infrastructure like training aids/equipments, computer, data base, library etc and for recurring grant assistance at the rate not exceeding ₹ 1500 per trainee or ₹ 30,000 per batch of 20 trainees per beneficiary association /NGOs.

Entrepreneur Development Programme:-The main aim of programme is to identify persons with entrepreneur, quality, to promote them and to train them through a structural trainee course so as to make them competent enough to set their tiny and small scale industrial venture with the help from different agencies. The programme undertaken under this scheme are-

- A trainee course at an expenditure of ₹ 20000/- for 30 participants for a duration of 4 week. The financing pattern was set up in 1986 and upwards revision is presently under consideration.
- Identification, selection, and motivation of potential entrepreneur through intensive campaign and seminars at a cost of ₹ 5000/- per programme.

A course fee ₹ 500 per participant is charged in metropolitan city and ₹ 2000 per participant in non-metropolitan city, 50 per cent fee is charged for a SC/STs participants.

National Manufacturing Competitiveness Programme

Management Trainee Programme:-There has been a greater push from the Government of India to upgrade the technology and improve quality of the products of the SSIs Sector. The overall objective being to assist the sector to face newer challenges and retain its prominent position in the industrial scenario of the country.

Government of India has consequently taken up various plan schemes. One of the schemes under this programme has been to assist the state government to

set up mini tools rooms and trainee centre to provide facility for design and manufacture of tools and to improve skill of tools makers thereby helping SSIs sector in the field of Tool Engineering. It was decided with the approval of the planning commission, it will implemented as a centrally sponsored scheme. It has been further decided that:

- The state government will prepare project documents supported by demand survey and obtained approval of their competent authorities in the state. They will decide the implementing agencies and also agree to make necessary provision in their budget to cover the cost to borne by the state agencies. Thereafter, their proposal will be sent to office of the Development Commissioner (SSIs), Nirman Bhavan, New Delhi - 110011 for sanction central assistance.
- The One time central financial assistance will be equal to 90 per cent of cost of machinery/ equipment in the case of new Mini Tool Room and 75 per cent cost of machinery/ equipment in the case of existing Tool Room.
- Office of DC (SSIs) will scrutinise the proposal and obtain approval of standing finance committee/ expenditure finance committee of the ministry of SSIs and ARI and inform the state government accordingly.
- Central assistance will be released to states/state Agencies in instalment, on receipt of specific requests from the state governments after the states have created necessary infrastructure and finalised the procurement of machines.

Skill Development Programme:- The main aim of this scheme is to provide training to skilled workers engaged in the small scale industries. Further, this programmes aimed to equip small industries with better and improved technologies of production. As a part of this programme, the Small industries service Institutes in their workshops organise regular course in various technical trades and manufacturing process.

National Manufacturing Competitiveness Programme:- Under the National Manufacturing Competitiveness Programme(NMCP) for MSMEs, this all India campaign was launched which has specific components that are aimed at enhancing the competitiveness of the enterprise in this sector so as to withstand global and organised competition and to thrive through better technologies and skills. The NMCP seeks to integrate the best elements of industrial competitiveness in the SME sector, which has often been unable to afford and adoptf such practices and techniques. The following are the ten components of the National Manufacturing Competitiveness Programme NMCP implemented recently-

- Lean Manufacturing;
- Design Clinics;
- Setting up New Mini Tool Rooms;
- Marketing Assistance of MSME and Technology Upgradation Activities.
- Promotion of Information and Communication Technology ICT in MSMEs

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- Support for Entrepreneurial and managerial Development of MSME through Incubators.
- National Campaign for investment in intellectual property rights
- Marketing Support/Assistance for MSMEs.
- Energy Efficiency and Quality upgradation support for MSMEs.
- Quality Management Standard and Quality Technology Tools for MSMEs

Check Your Progress

7. What are the benefits of ancillary development programmes for large scale industries?
8. State the main aim of the entrepreneur development programme.

14.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Technological progress comprises of creation of skill, new means and methods of production, new uses of raw-materials and wide spread of machinery.
2. Labour-augmenting technological progress occurs when the quality or skills of the labour force improve and upgrade.
3. The LDCs require transfer of technology to make their economies competitive in the international market.
4. Unpacked sales of technology or direct investment are commercial channel of technology transfer in the form of machinery, equipment, raw materials, processed products, commissioning, designing, licensing, training, management or supervision.
5. Capacity of country to absorb modern technology depends on its possessing adequate number of trained personnel.
6. At the time of technology transfer, the foreign firms insist on large tax concessions from the host country in the form of tax holiday, repatriation of large percentage of profits, high royalties for the use of patented technology, high wages for the expertise, etc.
7. The large-scale units have several advantages like saving in investments, inventories, employment of labour etc., along with getting the items of the desired specification.
8. The main aim of the Entrepreneur Development Programme is to identify persons with entrepreneur, quality, to promote them and to train them through a structural trainee course so as to make them competent enough to set their tiny and small scale industrial venture with the help from different agencies.

14.7 SUMMARY

- Technology is considered as the basic factor in the process of economic growth. Technology is the technical knowledge used in production or embodied in capital or machinery. In other words, technology includes methods used in non-marketed activities as well as marketed activities.
- Technological progress is the logical concomitant of economic development and economic development, in turn, depends to a large extent on technical change which leads to an increased output per unit of labour, it refers to a change in the production embodying all known techniques.
- Modern technology is changing rapidly and no country can hope to maintain steady advance unless it keeps pace with current developments. There are three basic classifications of technological progress Neutral, Labour-saving and Capital-saving. The wide application of technology alone can solve the economic problems of stagnant and backward economies.
- Transfer of Technology implies that transfer of technical knowledge from one country to another either through deliberate government policy or by private channels of communications.
- Technological advancement and economic growth are interrelated. Rapid rate of growth can be achieved through high level of technology. Schumpeter observed that innovation or technological progress is the only determinant of economic progress. Thus it is the technological progress which keeps the economy moving. Invention and innovations have been largely responsible for rapid economic growth in developed countries.
- The need for technology transfer to under develop countries from the developed countries arises due to **overcome** Backwardness, To Fill Technological Gap, To Increase the Growth Rate, To Solve Balance of Payments Problem etc.
- The problems transfer of technology from the developed countries to LDCs arises both from the suppliers and buyers of technologies. The deficiency of capital and lack of trained and skilled labour force prevents them from scrapping of the old techniques and using up-to-date and modern techniques instead.
- When technology transfer is tied to the training of workers in new skills and trade in the host country, they are unable to shift to other industries. Thus, the mobility of labour is restricted.
- Government has to play major role in strengthening the technological base of SSIs. The various steps taken by the Indian government for the technological upgradation of industrial Sectors -Incentives to SSI Units acquiring ISO-9000 Certification, Ancillary Development Programme, Small Entrepreneur Management Assistance Scheme, Entrepreneur Development Programme, National Manufacturing Competitiveness Programme, Management Trainee Programme.

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14.8 KEY WORDS

- **Technological change:** It means technical knowledge used in the production of capital and machinery.
- **Technology transfer:** It refers to the transfer of technical knowledge from one country to another either through deliberate government policy or by private channels of communications.

14.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What do you mean by technology?
2. List any four problems of transfer of technology.
3. Mention the classification of technological progress.
4. What are the channels of transfer technology?
5. What is skill development programme?

Long Answer Questions

1. What is the role of technology in industrial development? Discuss.
2. What is the need of Transfer of Technology to underdeveloped countries?
3. What are the problems of transfer of technology? Suggest measures to overcome the problem.
4. Explain the steps that have been taken by the government for the technology upgradation of the country.
5. Discuss in the detail the following schemes:
 - Management Training Programme
 - Skill Development Programmes
 - Entrepreneurship Development Programme
 - Ancillary Development Programme
 - National Manufacturing Competitiveness Programme

14.10 FURTHER READINGS

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