Chapter Six

Diversification, Vertical Integration and Mergers

**6.3 Definition**

**1) Diversification**

Diversification means production of a totally different product which is not a substitute for existing product in the market by a firm. Diversification is also called “spreading of its operation by business over dissimilar activities”. According to Penrose, a firm is said to diversify whenever, without abandoning the old product, began to produce new products, including, intermediate goods which are sufficiently different from the other products, which leads to some significant differences in the firm’s production and distribution programs.

 Four different possibilities have been mentioned by Penrose such as

1. When there are additional products within the firm’s existing technical base and market areas.
2. When there are products involving the existing technical base but destined to new market areas.
3. when there are products which involve together new technical base for the existing markets and
4. When there are new products with new technological base for the new market areas.

Therefore, diversification is not only concerned of changes in products but also implies changes in technological base and market areas.

**2) Vertical Integration**

Vertical integration refers to operations by a firm in two or more industries representing successive stages in the flow materials or products from an earlier to a later stage of production or vice versa. It is also called vertical concentration and if the process takes place by merging of two different firms, it is called vertical mergers. It is the integration among the intermediate products used in the production of a commodity. It can be initiated by starting of manufacturing all of them by firm itself or different firms producing goods at different stages of the process merge together.

**3) Mergers**

Mergers refer to amalgamation or integration of two or more firms. The firms under different ownership and management controls come under a unified one through mergers. The terms ‘acquisition’ and ‘take over’ are also used for mergers which implies that firm acquires assets or stocks in part or full, of other firm or firms to get operational control over them.

There are three different situations of mergers such as

1. A horizontal integration or merger of firms whose products are viewed by buyers as identical. i.e. their products have high cross elasticity of demand and supply.
2. Vertical integration or merger of firms where there is a successive functional link between their products input output relation. There may be such integration between a producing and a marketing firm for the same commodity or commodities.
3. A conglomerate integration or merge of firms producing altogether different products, i.e. which are not substitutes for each other (zero cross elasticity of demand and supply) such as merging of a cloth manufacturing firm and a drug manufacturing one. The amalgamated firm in this situation will be a market diversified firm.

**6.4** Motives for Diversification, Vertical Integration and Mergers

**6.4.1 Motives for Diversification**

The motives for diversification depend on its types of activities. There are different types of diversification such as:

**I. Lateral diversification: -**  When a firm produces different goods which diverge from the same process or source or which are used as materials for the same process or market.

For example; 1. A leather tanning firm starts making boots and shoes, it diverge from leather business

 2. A meat seller start to sell horns, bones, hides and raw wool

 3. Soap manufacturer starts chemical manufacturing that is used in soap.

**II. Conglomerate Diversification**

In this type of diversification the product will be quite unrelated. It helps in extension of market power of the firm.

**Advantage**

* 1. It brings stability in earnings through cross subsidization i.e. loss of one product is covered by the gain from other.
	2. It helps to increase the barriers to entry
	3. It provides more options for risk taking for the sake of profits.
	4. It helps to maintain the process of growth and provides better utilization of facilities.

**Motives**

1. When production of one commodity involves another (by product form) to avoid wastages and gain advantages. Example production of mutton and wool, lubricants and raw chemicals along with petroleum refining, coal, coke etc.
2. When market demand for existing products declining.
3. Better utilization of existing facilities such as managerial, research and development and certain machines.
4. The market complimentarity in seasonal demands; for example, production of colors and water sprayers together for holiday festival.
5. Brings more market power by reducing competition
6. An effective barrier to entry to reduce potential competition.

**III. Vertical Diversification:-**Vertical diversification involves process of manufacturing or distribution which precedes or succeeds those in which the firm is already engaged. It can be either backward or forward.

**Backward vertical diversification:-**A firm starts manufacturing products previously purchased from others in order to use them in making it as original product. For example, a chocolate firm may have its own coca plantation, a milk product company may have their own dairy farm, a bakery may have its own flour mill etc.

**Forward vertical diversification:-**When a firm moves nearer to the final market for its product and carries out a function which was previously undertaken by customers is known as forward vertical integration.

Example, a shoe making company starts its own distribution or selling shops; a flour mill may start making its own bakeries.

**Motives**

1. provide security to the firm –for assured sources of supplies (backward)
2. provides economies of linked process
3. Economies marketing by saving transportation, advertisement, procurement and selling costs.
4. Saving by eliminating middlemen
5. Firm gets more market power through size or absolute cost advantage and gives strength to barriers to entry.

**IV. Diagonal diversification**

The diagonal diversification consists of provision with same organization of auxiliary (supportive) goods and services required for several main process or lines of production of the organization. For example, a firm has its own powerhouse to generate electricity or a machine tool making unit. Since such things are required for running almost every processing activity.

**Motives**

The motives are more or less the same as for vertical diversification. In addition to those are:-

1. mopping up (high capital) of excess capacity and
2. reduction of risk

 The motives of all types of diversification can now be summarized in condensed form such as –

1. Profitability which implies fuller utilization of resources at the disposal of firm.
2. Stability motives which imply reduction of risks and uncertainties through assured supplies of resources and markets for main line of production.
3. Growth motive means expansion of productive capacities without being charged for being monopolizing.
4. Market power assures increase in barrier to entry as a result of diversification.

Anew industry will have higher degree of diagonal and vertical diversification where as a matured industry will resort to more lateral diversification.

**6.4.2 Vertical Integration**

Vertical integration refers to the extent to which a single business unit carries on successive stages in the processing and distribution of a product. It also means the behavior of a firm in moving in to another processing or distributing stage either via vertical merger or by setting up new production or distribution facilities. When a firm moves into production of raw material or input, it is called as backward integration and when a firm moves into final production and distribution it is called forward integration. Vertical integration has an important impaction on industrial structure

**Motives**

1. to circumvent (avoid) from sales tax by replacing taxable market transactions by internal transaction.
2. to increase profit
3. to erect barriers to entry
4. for technological cost saving
5. to guarantee input supplies
6. sustain stability and growth
7. determination of price and quantity of industry and
8. to extend monopoly power.

**6.4.3 Mergers**

The motives of diversification are equally applicable to merger also. However, there are other important motives of merger which are not linked with diversification. They are:

1. ***Increase in profitability:*** through increased degree of diversification or increased efficiency and market power though merger.
2. ***Stability in Earnings:*** the profit rates of individual firm may fluctuate as they are exposed to a greater degree of risks. When they merge together there may be little variation in their combined profit rate. The variability of profit rates is measured their variance or standard deviation.
3. ***Stock Market Gain:*** Financial experts attribute the motive of merger largely to stock market gains. Firms would like to merger together, if there is a difference in the market price for their shares in the stock market. There will be mutual gain for them by merger.

For example, let us consider the merger possibilities of two companies, company A and company B.

Company A has 25,000 shares outstanding in the market and earns 15000 as profit after tax an interest. Its earnings per share would then be 0.60.

Company B has 50,000 shares outstanding and earns 50,000 after tax and interest which gives 1 as earning per share.

Now assume that market price of share of company A is 10 times its earning per share i.e. 10 X 0.6 =6 and assume market price of share of Company B is 20 times of its earning per share i.e. 20 X 1 = 20. Thus there is a clear difference between the market price of shares of company A and B. Suppose A mergers with B. Company B offer a higher price for the shares of company A say 10 per share. Company A will accept since it is getting 4 extra over the market price of its share. Company A is in fact having 12500 shares (25,000 X 10/20) merged in company B. So total shares of company B now increased to 62500 and per share it will be 1.04 (65000/62500). If market price of share for company B which acquires company A continues to be 20 times per share it would be 20.80(20 X 1.04). Thus there is a marginal increase of 0.80 in the market price per share for company B which is a net gain after merger.

1. ***Efficiency motive:*** Efficiency is attained in the form of reduction in inventory, transportation cost, research and development, cheaper raw materials due to bulk purchase and better management of the firm due to merger policy.
2. ***Market power motive:*** Market power is a command over pricing and output decision by the firm. It goes up in the case of horizontal merger as potential competition is reduced through merger. Similarly vertical merger in either direction (backward and forward) can increase market power.
3. ***Growth motive:*** A firm grows by expanding itself through mergers. The combined firm after merger will command more assets, more sales and more market power.

Most of the motives of diversification, vertical integration and mergers are common falling into four categories such as:-

1. Profitability
2. stability
3. growth and
4. market power

**6.5 Measurement Approaches**

Measurement of diversification, vertical integration and mergers is required for empirical analysis. There is no unique index of measurement for any of these three market structures.

**6.5.1 Measures of Diversification**

The indices propose and applied to measure corporate diversification are basically similar to those used for measuring market concentration. In measuring diversification the number of industries or products and their shares in output are taken instead of the number of firms and their individual shares in the market.

Diversification

Where Pi = share of the ith product or industry, Wi= weight attached to ith

**6.5.2 Measures of Vertical Integration**

The vertical integration can be measured either by using ratio of value added to sales or ratio of inventory to sales or degree of dependence on input and output markets.

***1. Ratio of value added to sales***

  
 *= Total V.A*

 *Total Sales*

The upper limit of this ratio is 1. If the activities are less integrated, there will be more transactions between firms, so less will be the value of CVi

(Value added = sales minus expenditure on material input including fuel and power )

1. ***Ratio of inventory to sales.***



Ii= value of stock of product i

Si = sales in value of product i

Increasing number of productive stages undertaken by affirm will raise I. So greater the ratio, greater will be the degree of vertical integration.

1. ***The degree of Dependence on Input and output markets***

In this measurement approach, two separate indices can be developed.

1. ***Backward vertical integration: -*** this is calculated with ratio of total inter firm purchases or transfer of inputs at a particular stage to total volume of inputs at that stage or production.
2. ***Forward vertical integration: -*** this is the ratio of total inter firm transfers of output of a particular stage expressed as a proportion of the total output of that stage.

 Among the three measurement indices, the use of value added to sales ratio has an edge over other two methods since it is popular in empirical analysis.

**6.5.3 Measures of Merger**

Two approaches are generally followed in the measurement of merger.

1. Just to count the number of mergers taking place during a specified period. Most of the empirical studies on merger followed this approach because of its simplicity.
2. The second approach to measure merger is to take the percentage of employment acquired firm in total employment of the concerned industry or entire manufacturing sector employment.

Mergers are typically divided in to horizontal, vertical and conglomerate mergers. Among these horizontal mergers is a major factor in ongoing merger activity. It was Williamson who argue that merger activity produces some social benefit and it is necessary to trade off social costs and benefits of the merger. However, a horizontal merger has the effect of increasing the market power of the merged firms, enabling them to raise prices and profits. This leads to argue against mergers.

Williamson focused on economies of scale or real cost savings as a defense of horizontal mergers with the help on the ‘native’ trade off model. This is explained with the following diagram.

Price

 P2

 P1

 e

a

A1

c

AC1

 b

 g f

AC2

d

Out put

 0

A2

 Out put X2 X1 X3

 Diagram -1

Assume for simplicity a competitive market with transport cost **AC1** and a market demand curve **D**. In competitive market equilibrium price is equal to **MC** and unit cost, **P1** and competitive output is **X1.** Assume a series of merger take place giving rise to real cost savings which reduce costs to **AC2** .Such cost savings may come from economies of scale, superior management and rationalization of production. If the merged firm continues to charge either **P1** or less, the consumers are no worse off and there is saving of resources in producing **X1** output equal to **P1cge.**

Suppose the post merger price rose to **P2** from **P1,** output is restricted to **X2** .The consumer surplus is reduced by **P2acP1** . If we treat the transfer of utility from consumer to producer as neutral, then the net welfare loss is area **abc (A1**). Against this, the savings of cost for **X2** output is **P1bde (A2)**. The overall net social benefit of the merger is the difference between A2 and A1. Williamson points out this as positive for small cost saving owning to merger. Example: **-** a10% rise in price is offset by 1.2% cost saving while 20% rise in price is offset by 5.8% cost saving. Hence a small cost benefit may offer an important defense for horizontal merger.

**Criticism**

 However, the argument on the assumption that the transfer of income from consumer to producer is treated as neutral is criticized. Consumer loss more heavily will increase the social cost of merger and hence require greater cost saving to make merger beneficial.

Further, even if the merger produces positive net social benefits, it does not represent an ideal solution. Consumers could bribe the merged firm to produce X3 out put at a price equal to AC2 by paying a sum equal to the monopoly profit area **P2ade**. The gross consumer benefit from such a move is **P2afe**, giving a net consumer benefit of **adf.** This area ‘**adf**’ would measure the social costs of a permissive merger policy compared with the first best optimum of pricing at lowest MC. But the introduction of polices such as price regulation or nationalization mat secure the first best optimum. At the same time the nationalized industries may suffer from political interference and inability to attract top quality management so that lowest cost of production AC 2 may not be attainable.

The **second argument** of merger policy is that mergers give rise to cost to rise because of lack of competitive pressures according to Leibenstein. He coined the term X- inefficiency to denote the effect on economic welfare. This is shown the following diagram.

Price

 P2

 e

 P1

 a

A1

 d

AC2

 b c

AC1

D

A2

 X2 X1 out put

 Diagram -2

 0

The competitive price is P1 and outputs is X1 .Following a merger price rises to P2 and in addition cost rise to AC2 .In the absence of a cost rise, the price effect of merger is to reduce the consumer surplus by area **P2acp1**, of which area **P2abP1** would be a transfer to producers leaving **‘abc’ (A1)** as net welfare loss. Because of the cost increase, producers receive only **p2ade** as profit. The increase in cost represent a pure waste of resources equal to area **p1bde (A2)**must be added to the welfare loss. Thus both the price increase and cost increase contribute to the reduction in social welfare and the merger is unambiguously bad.