# 2021 Notes - Cost of Production

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## List of Main Definitions and Concept

### Short Run

* + - The firm is constrained by a fixed maximum capacity, which means that it can only increases the variable factors of production to increase its production while one of its factors of production is held fixed.

### Long Run

* + - All the factors of production used by the firms can be changed to increase production.

### Marginal Product (MP)

* + - MP is the additional change in output as a result of additional increase in the variable factor of production.

### Average Product (AP)

* + - AP is derived from the total number of products produced divided by the total number of variable factors of production.

### Total Product (TP)

* + - TP refers to the total number of outputs produced by the total number of variable factors of production.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fixed Factors | Variable factors | Marginal Product | TotalProduct | Average Product |
| 1 | 1 | 3 | 3 | 3 |
| 1 | 2 | 5 | 8 | 4 |
| 1 | 3 | 7 | 15 | 5 |
| 1 | 4 | 9 | 24 | 6 |
| 1 | 5 | 6 | 30 | 6 |
| 1 | 6 | 0 | 30 | 5 |
| 1 | 7 | -2 | 28 | 4 |

### Factors of Production

* + - The resources used for production are known as factors of production which can be classified as land (rent), labour (wage), capital (interest) and entrepreneurship (profit).

### Fixed Factors of Production

* + - These are factors of production which cannot be varied during short run to increase production.

### Variable Factors of Production

* + - These are factors of production which can be valued during short-run to increase production.

### Fixed Cost

* + - Cost of production that is incurred due to the use of fixed factors and they do not vary with the level of output of the firm.
		Example: interest payment of borrowing to finance business operation

### Variable Costs

* + - Cost that incurred due to the use of variable factors and the cost will vary with the level of output. Example: Wages.

### Total cost of Production

The total cost production are costs of production incurred due to the utilization of fixed and variable factors of production of goods and services.

### Long run average cost of production

The total cost of production are costs of production incurred due to the utilization of resources for the production of goods and services in the long run.

## 🞹Sources of Internal Economies of Scale

### 2.1 Internal Economies of Scale

* + - Cost savings that are accrued from large scale production of the firm, contributing to the fall of the LRAC due to the firm's expansion of its output.
		- The cost saving is attained by the spread of the total cost of production over a larger number of output or the cost saving gained by lowering the rate of increase in the total cost due to lower cost of inputs. **As seen from the diagram, the average cost will fall from AC1 to Ac2 as the output increases from Q1 to Q2**

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2.2 External Economies of Scale

* + - Cost savings that are accrued to the firm as a result of the expansion of the industry that will raise the efficiency of the firm, contributing to the fall in the LRAC without any change in the production for the firm.

## The cost saving is attained by the gain of efficiency from the use of the infrastructures and facilities provided by the government and integrated activities within the industry which will lower the cost of production. As seen from the diagram, the LRAC will lower down from LRAC1 to LRAC2 as output remains at Q1.

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AC1

AC2

## Sources of Internal Economies of Scale

###  3.1 Technical Economies of Scale

* + - Can be attained as a result of technical improvement achieved in the production process due to the increase in plant size. The cost saving can be seen in these areas:
		- Greater specialization of work to reap the advantage of division of labour, increasing the productivity of the workers and hence, increase in production
		- Better process of production by linking processes so as to reduce wastage of goods and cut down the time period and increase production with the given resources
		- Enhance the capacity of machinery production to allow greater production
		- Allow the use of bigger machinery overcoming the problem of indivisibility of machinery
		- Recycling of waste product to cut down cost

### 3.2 Managerial Economies of Scale

* + - Attained by the employment of specialized workers to raise the efficiency of the firm without increasing the unit cost of production. This is achieved when the specialized staffs manage to increase the production scale allowing the spread of the total cost of production over a large quantity of output.

### 3.3 Commercial Economies of Scale

* + - Attained when the firm manages to reduce the cost of inputs by buying in bulk at favourable rates and through cost saving of advertising cost due to large scale production.

### 3.4 Financial Economies of Scale

* + - Attained when the firm is able to have cheaper source of fund to finance their business due to the size of their operation, enabling them to obtain lower interest rate in their borrowing or the issue of shares to obtain more fund.

### 3.5 Risk Bearing Economies of Scale

* + - Attained when the large firm spread risks, eliminates them though diversification in production, making the firm less vulnerable to changes in market conditions.

***It is important to explain the sources of the economies of scale based on the context of the industries such as supermarket, banking, petrol retailing stations, hospitals and others.***

**Qn: How EOS can be attained by the supermarket?**

1. **Technical EOS**

-Division of labour

-Use of machinery (point of sales system)

1. **Managerial EOS**

-Buyer-select the right product for sale in supermarket 🡪 increased sales 🡪cost of rental for production ↓

1. **Commercial EOS**

-Successful advertising

-↑sales🡪cost of goods sold↓

1. **Financial EOS**

-Borrow directly from retail market – incur low cost of borrowing for business

1. **Risk-bearing EOS**

-Different types of products for sale

-↑TR – sustain business operation

**Qn: Explain the advantage of large firm in the particular industry**

a. EOS (How LRAC is lowered)

b. Mkt adv

(Market power/forms of efficiency)

Explain how the concept of EOS affect the price and output decision.

Reap EOS – cost saving – decrease in AC and MC – decrease price and increase in output – raise competitiveness and create BTEs

## Sources of External Economies of Scale

* + - Sources of cost reductions, which accrue to the firm from the growth in the size of the industry.
		- The firm's cost per unit of output decreases as the size of the whole industry grows. Firms, regardless of size, benefits from expansion of the industry.

### 4.1 Economies of Concentration (Network system – CTE,PIE)

* + - When an industry is concentrated, firms benefit from the concentration of resources, facilities and infrastructures. All these facilities will help the firm increases its efficiency and lower cost of production for the whole industry.

### 4.2 Economies of Information (R&D)

* + - Derived from the publication of trade and technical journals, central research institutions. These efforts will help the firm gain greater knowledge to raise its efficiency and improves its productivity in many aspects, lowering cost of production.

### 4.3 Economies of Disintegration (Outsourcing - handphones)

* + - Allows the firms to split certain parts of production and source for inputs, which can be produced by the common suppliers. The supplier of these inputs can gather the total production and concentrate the production to bring down the cost of these inputs.

## Sources of Internal Diseconomies of Scale

* + - Internal diseconomies of scale occur as the firm becomes inefficient of production when it exceeds certain level of production beyond its efficiency level of production. This will lead to a rise of the average cost of production as seen from the diagram as the average cost rises from AC2 to C3 as output increases from Q2 to Q3.



### 5.1 Administrative Diseconomies of Scale

* + - Occur due to weak coordination as there are too many departments in the firm. This will create weak control and coordination in the organization, leading the rise of inefficiency and average cost of production too.
		- Too many operational procedure – waste time and incur more manpower cost

### 5.2 Managerial Diseconomies of Scale

* + - Conflicts due to different organization cultures
		- Occur due to the complexity of decision-making and frictions among the various departments due to the size of the firm. The various departments have different perspectives, and conflicting aims and thus this undermines the efficiency of the organization. This will lead to the rise of the average cost of production.

### 5.3 Low labour morale

### As the firm grows too big, hierarchy alienation is seen as the lower level workers feel a sense of loss. The absence of a sense of belonging undermines the morale of the workers and interest in their work. Consequently, the productivity of the organization will decrease. Workers trapped in a repetitive, mundane job with limited interests in success of firm, decrease quality and increased cost in quality control.

## Sources of External Diseconomies of Scale

* + - It occurs when the industry is over-stretched in term of resources and facilities; the cost of production will rise throughout the industry as the inefficiency will affect the productivity of the firm. **As seen from the diagram, the LRAC will rise from LRAC1 to LRAC2 without any change in the output of the firm.**

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6.1 Excessive use of resources

* + - Increasing demand for factors of production creates stress on the availability of resources, demanding the cost of resources to rise, such as labour cost as the issue of scarcity arises.

6.2 Rise of externalities

* + - Third party effects
		- Stress on facilities will lead to the rise of externalities, raising the cost of production for the society and the industries For example, pollution and traffic congestion

6.3 Excessive Competition

* + - Increase wage cost of workers
		- Greater competition will mean the there will be greater wastage in the form of excessive advertising which will only increase the cost of production but no increase in the demand

## 🞹Reasons for the Survival of Small Firms

### 7.1 Nature of Product (niche market) – raise consumer satisfaction

* + - Some services require personal attention, such as a haircut, tailoring, shops selling accessories, etc. Individual attention is required to cater to the needs of the customers. In most cases, such services cannot be handled by machines as the goods cannot be standardized, i.e. mass production is not possible. Craftsmanship is vital, e.g. ladies' fashion, costume, watches and jewellery, hand-printed batik, etc.

### 7.2 Skills of the Entrepreneur – improve adaptation to changes

* + - If the entrepreneur is highly educated, knowledgeable and skilful, he would be able to improve the productivity of the organization. He will ensure the survival of the small firm.

### 7.3 Geographical Location

* + - The small firm will be able to provide the consumer convenience as it will locate itself near to the consumer.

### 7.4 Adaptability and Flexibility

* + - The adaptability and flexibility of small firms make it attractive for small firms to remain small. The firm can adapt easily to changing economic conditions. Their factors of production are not specialized as in the case of the larger firms, like the blast furnace of an iron and steel mill which cannot be used for other purpose.

However, firms can still be big despite the need of personal services🡪can standardize services – can conduct mass sales

### 7.5 Disadvantages of Large Firms

* + - Development of a bureaucratic organization
		- Extensive division of labour (will lead to lower productivity)
		- High wages for professionals
		- Intense and hence expensive competition
		- increasing risks (unwillingness to undertake risks can also deter expansion)

**Question for discussion:**

 **Explain why small firms can proliferate despite the challenges of big organization**

**Explain why monopolistic competitive form of market structure prevails despite its inefficiency** (adv of small firms)

**Explain why small firms can proliferate despite the challenges of big organization**

Introduction – features of small firms / state that the advantages of small firm will help them overcome the competition from large firms

Main body

approach 1 –identify all possible challenges of bid firms (1 para)

* how small firms will react to overcome the challenges (advantages of small firms) ( 3 or 4 points)

approach 2 – identify one source of challenges / identify and explain how small firm overcome the challenges due to its advantage

Conclusion

## 8. Distinguish between Internal and External Economies of Scale

Note: the comparison must be made on the basis of a variable that allows the differentiation of the two types of economies of scale.

###  Definition of Economies of Scale

It refers to cost savings and gained in production accrued to a firm in the production of output resulting in returns to scale.

###  The Difference in Definition between Internal and External Economies of Scale

Internal economies of scale are cost savings that are accrued from large scale production of the firm which will contribute to the fall of the LRAC as result of the firm’s expansion of its output. The cost saving is attained by the spread of the total cost of production over a larger number of output or the cost saving gained by lowering the rate of increase in the total cost due to lower cost of inputs. As for the external economies of scale, there are sources of cost reductions, which are accrued to the firm from the growth in the size of the industry. The firm’s cost per unit of output decreases as the size of the whole industry grows. Firms, regardless of size, benefit from expansion of the industry.

However, when the firm exceeds a certain production level, the diseconomies of scale will set in. Similarly, the diseconomies of scale will set in when the industry’s resources capacity is over-stretched and thus contributes to inefficiency.

### Sources of Internal and External Economies of Scale

The sources of internal economies of scale can be classified as technical economies of scale, managerial economies of scale, financial economies of scale, commercial economies of scale and risk-bearing economies of scale while the external economies of scale can be seen from the gain from the concentration of facilities and resources, concentration of information and disintegration of industries.

### Impact on the Cost of Production

When internal economies of scale occur, the production level of the firm will increase which will allow the total cost to be spread over a larger number of outputs and this will contribute to the fall in long run average cost of production. As for external economies of scale, it will occur when there is greater efficiency in the industry as whole and there is a reduction in the long run average cost while the firm’s production level remained unchanged.

### Reasons for the Merger and Acquisition of Firms

1. To reap the advantages of economies of scale – only possible under certain situation (business which are of the same nature)
2. To raise the profile of the organization when a firm takes over the brand name of another company – Lenovo buy over IBM
3. To attain rationalization of capacity of production - ↑pdn to lowest AC level
4. Increase market share by taking over the share of the market of the competitors when there is horizontal integration.
5. To provide greater control over the consumer market when there is vertical forward integration
6. To provide greater control of the supplier of goods and resources for backward integration
7. To create greater stability for the company when it is more diversified.
8. To spread risk over products, market and sources of supply to cut down loss due to the instability of the market.

### 8.6 Possible Problems Encountered during Mergers and Acquisition

1. Possible intervention by the government as it creates social problems due to consumer exploitation (charging at higher price) as there is the development of market power and the impact of retrenchment.
2. May not be able to attain economies of scale due to complexity of the organization and differences in the production and distribution channel
3. May experience diseconomies of scale when the firm expands beyond the optimum level of production.
4. Over-stretch the firm’s resource capacity and thus leading to possibility of business failures. (↓availability of business resources)

**9. Impact of Merger** (Firm, Society, Consumer)

9.1 Impact on the Firm

a) Benefits to the Firm

* Firms can reap Economies of Scale to lower average cost of production, enabling the firm to raise profitability
* Expand the size of market as a result of a larger market share
* provide sizeable market demand which will provide the incentive for the firm to engage in research and development to raise product innovation and productivity
* enable the firm to control the market share to raise market power by decreasing price or controls the administrative process
* The firm can reduce the risks of their business as it has a greater market share to diversify their sources of market demand
* They can create greater fund and gather more resources to compete more effectively against foreign firms and to compete in the international market

b) Detriments to the firm

* May stretch out the resources of the firm (cash-stripped/lack of staff) as the size of the production expands too extensively
* May experience diseconomies of scale which leads to rise in average cost of production
* May incite regulation from the government as firm may gain excessive market power such as the violation of the anti-trust law or the regulation in the aspect of retrenchment from mergers

**Qn: To what extent will mergers and acquisition be beneficial?**

a. Effects – lower price and improvement of quality of products

🡪limitations – will not pass cost savings to consumers & improve their R&D

9.2 Impact on the Consumers

a) Benefits to the consumers

* May be able to buy the goods at lower price level as the cost saving gained by the firm is passed onto the consumers
* May be able to enjoy the benefit of quality products and a greater variety of goods and services by the R&D made by the firm

b) Detriments to the consumers (Merger tends to greater market power)

* Consumer exploitation may occur as the firm with greater market power is likely to raise price and reduce output to conduct profit maximization
* Reduce consumer choices if the firm has extensive market power whereby the firm can only provide a few

9.3 Impact on the society

a) Benefit to the society

* Provide greater stability to the economy as the firms can develop a key industry to provide economic growth which will provide more employment and tax revenue for the society
* Raise the growth of the economy as the merger will allow the firm to engage in R&D and compete in the international market which will help the economy to raise export demand, leading to greater national income and employment

b) Detriments to the society

* The firm will experience production inefficiency and allocative inefficiency as the production level as the production is where the price level does not equal to minimum average cost of production and does equal to marginal cost. Consequently, the production will experience inefficiency in production and there will be welfare loss for the industry (deadweight loss) and thus the society does not attain social optimization in resource allocation (The firm is unable to attain production and allocation efficiency as the production equilibrium level attained at the profit-maximization level where MC=MR is at the excess capacity of production where the production does not equal minimum average cost of production or marginal cost)
* Greater inequality will surface, creating social dissatisfaction as the firm will gain supernormal profit due to market power which will undermine the majority of the market
* The economy may experience higher incidence of unemployment in the initial part of the merger as the firm will try to cut down duplication of operation and excessive production procedure to raise the efficiency of the merger.