



SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution

Coimbatore -35



Department of Mechanical Engineering

19MEE301- Engineering Economics and Cost Analysis

**UNIT – I: BASIC ECONOMICS**

**Economies of Small and Large Scale**

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# Economies of Scale



**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**

**the greater the quantity of output produced** the **lower the per-unit fixed cost**

Economies of scale also result in a fall in average variable costs (average non-fixed

costs) due to the output

expansion achieved by various strategies as a result of economies of scale.



# Economies of Scale





# Effects of Economies of Scale on Production Cost

➤ It reduces the per-unit fixed cost

➤ It spreads over more output than before

➤ It reduces per-unit variable costs

➤ It increases the efficiency of the production process

➤ It is a result of increased production, fixed costs are spread over more output than before

➤ This occurs as the expanded scale of production increases the efficiency of the production process



# Types of Economies of Scale

## Internal Economies of Scale -

### Internal Economies of Scale (IEoS)



**Technical economies**  
i.e. containerization



**Specialist capital machinery / technology**



**Purchasing economies**  
(monopsony power)



**Large scale application of the division of labour**



**Using specialist managers across the supply chain**



**Financial economies**  
e.g. lower interest rates on loans



**Risk-bearing economies**  
from diversification



**Network economies** — which helps to lower marketing costs



# Types of Economies of Scale

## External Economies of Scale -

External economies of scale are economies of scale enjoyed by entire industry. For instance, suppose the government wishes to increase steel production. In order to do so, the government announces that all steel producers who employ more than 50 workers will be given a 20% tax break. Thus firms employing less than 100 workers can potentially lower their average cost of production by employing more workers.

Thus an example of an external economy of scale is one that affects the entire industry or the economy.



# Sources of Internal Economies of Scale

## Internal Economies of Scale (IEoS)



Technical economies  
i.e. containerization



Specialist capital  
machinery /  
technology



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Risk-bearing  
economies from  
diversification



Network economies  
which helps to lower  
marketing costs



# Sources of Internal Economies of Scale



## 1. Purchasing

Firms might be able to **lower average costs** by **buying the inputs** in large quantities or through a common purchasing process in bulk or from special wholesalers.

## 2. Managerial

Firms might be able to **lower average costs** by **improving the management structure** with more efficient and better skilled or more experienced managers.

## 3. Technological

**technological advancement** might be able to lower the production process through the use of new machinery and new technology.





# Sources of Internal Economies of Scale



## 4. Marketing

Firms might be able to **lower average costs** by **spreadign the high cost of advertisement** on TV and newspaper across a large level of output.

## 5. Research and Development economies

Firms might be able to **lower average costs** when developing **new and better products.**



# Sources of External Economies of Scale



- An area has a high concentration of skilled workers
- Specialist and local input firms can supply parts and services
- An area has an good transportation network
- An area has excellent reputation for producing particular goods

# Risk Bearing in Economies of Scale

- It can be done by diversification
- Diversification imparts strength and stability, and makes it less vulnerable to changes in commercial fortune
- There is also diversification of markets, sources of supply, and processes of manufacture
- **Internal Disconomies of scale**
- **External disconomies of scale.**



# Diseconomies of Scale -Internal



**The disadvantages of large scale production that can lead to increasing average costs**

- Problems of management
- Maintaining effective communication
- Co-ordinating activities
- Demotivation and alienation of staff
- Loss of ownership and control



# Diseconomies of Scale -External



**Occur when too many firms in one area.**

- Price of labour rises due to high demand
- Land and factories become scarcer and rent begins to rise
- Transportation cost also increases.



# Internal economies - Summary

## Internal Economies & Diseconomies of Scale

Advantages

### Internal Economies of Scale:

- Procurement economies
- Marketing economies
- Managerial economies
- Financial economies
- Technical economies
- R & D economies
- Risk-bearing economies
- Welfare economies

Disadvantages

### Internal Diseconomies of Scale:

- High capital requirement
- Management becomes difficult
- Scarcity of Raw materials
- Mass customization
- Maximum technology capacity
- Expands production risk



# External economies - Summary

## External Economies & Diseconomies of Scale



### External Economies of Scale:

- Skilled labour workforce
- A good reputation
- Specialized Suppliers
- Specialist Services
- Specialist Market
- Improved Infrastructure



### External Diseconomies of Scale:

- Increasing Operating Cost
- Increase Competition
- Scarcity of Raw materials
- Increase Technology Cost
- Increase Labour Cost



# Technical Activity - Eg - Bread



What are the things are required to manufacture bread ?  
Match with the Factor of Production

|            |                      |
|------------|----------------------|
| Land       | Wheat                |
| Labour     | Farmer/baker         |
| Capital    | Tractor/oven/battery |
| Enterprise | Chocolade France     |





# THANK YOU