Lecture No - 2: Introduction to Managerial Economics
Session Outline

1. Opportunity Cost
2. Measuring and Maximizing Profit
3. Understanding Incentive
4. Marginal and Incremental analysis
5. Model of an economy
1. Opportunity Cost

- Economic agents have to make rational choices in all aspects of business, since resources are scarce and wants are unlimited.

- It is necessary to choose one alternative among various alternatives.

- Rank all the alternatives on priority basis, and then choose the alternative which is on the top of priority list.
1. Opportunity Cost

- The cost of this choice is the benefit of the next best alternative foregone. This is called opportunity cost.

- This choice implies sacrifice of other alternatives. hence cost of this choice will be evaluated in terms of the sacrificed alternatives.
1. Opportunity Cost

- Therefore, opportunity cost is the highest valued benefit that must be sacrificed as a result of choosing alternative.

- Suppose a machine can produce either X or Y. The opportunity cost of producing a given quantity of X is the quantity of Y, which the resources would have produced.
1. Opportunity Cost

If that machine can produce 10 units of $X$ or 20 units of $Y$, then the opportunity cost of 1X is 2Y.

When there is only information about price, no information about quantities produced, then the opportunity cost is the ratio of their respective prices.
1. Opportunity Cost

You may be working in your hometown and suppose you have got another job offer in a city away from your hometown. Now if you select the new offer, you would be foregoing the benefit of staying at home.

So benefit of staying at home is opportunity cost of the new job.
1. Opportunity Cost

A firm may have to make a choice between buying new computers for its employees and installing a new server.

If it opts to purchase the server, the alternatives of buying computers is foregone and would be the opportunity cost of buying the server.
2. Measuring and Maximizing Economic Profit

Economic Cost of Resources

Opportunity cost
What firm owners give up to use resources to produce goods and services.

Market-supplied resources
Owned by others & hired, rented, or leased

Owner-supplied resources
Owned & used by the firm
2. Measuring and Maximizing Economic Profit

Total Economic Cost
- Sum of opportunity costs of both market-supplied resources & owner-supplied resources

Explicit Costs
- Monetary payments to owners of market-supplied resources

Implicit Costs
- Nonmonetary opportunity costs of using owner-supplied resources
2. Measuring and Maximizing Economic Profit

Types of Implicit Costs

• Opportunity cost of cash provided by owners
  Equity capital
• Opportunity cost of using land or capital owned by the firm
• Opportunity cost of owner’s time spent managing or working for the firm
2. Measuring and Maximizing Economic Profit

Economic Profit versus Accounting Profit

Economic profit = Total revenue – Total economic cost
= Total revenue – Explicit costs – Implicit costs

Accounting profit = Total revenue – Explicit costs
Economic Profit versus Accounting Profit

- Accounting profit does not subtract implicit costs from total revenue
- Firm owners must cover all costs of all resources used by the firm
- Objective is to maximize economic profit
Example

Consider an individual who has a CA degree and is considering venturing into the spare parts business rather than going for a corporate job. He invests Rs 3,00,000/- in the business.
2. Measuring and Maximizing Economic Profit

The projected income statement for the year

Sales Rs.100000
Less: Cost of goods sold Rs. 40,000
**Goss Profit** Rs. 60,000
Less: Depreciation Rs.5000
Utilities Rs.4000
Advertising Rs 10,000
Miscellaneous expenses Rs 5000
**Total** Rs (24,000)
**Net accounting profit** Rs 36,000
2. Measuring and Maximizing Economic Profit

Implicit costs

First, the owner has Rs. 3,00,000/- invested in the business. The other best alternative use of this money is a bank account paying a 5 percent interest rate.

Therefore, this investment would return Rs.15,000/- annually. Thus, 15,000 should be considered as the implicit or opportunity cost of having the Rs.3,00,000/- invested in the spare parts business.
The second implicit cost includes the manager’s time and talent. The annual wage return on a CA degree is Rs.50,000/- per month. This is the implicit cost of managing the business rather than working for someone else.
Real economic profit = Accounting profit - return on invested capital plus foregone wages (implicit costs)

Economic Profit = 36,000 - (15,000 + 50,000) = -29,000
Rational decision making requires that all relevant costs both explicit and implicit be recognized.

The concept of economics profit accounts for all costs therefore is a more useful management tool than the more normally defined concept of economic profit.
3. Understanding Incentives

The architecture of an organization comprises:

- Distribution of ownership
- Incentive schemes and
- Monitoring systems

• A positive incentive measure is an economic and institutional measure designed to encourage beneficial activities.
3. Understanding Incentives

Incentive is a measure to promote beneficial activities.

Helps to resolve moral hazards

Principal – agent problem: conflict of interest between manager and owner of the firm:-

‘Managers are more interested in maximization of their own benefits, instead of maximizing corporate profit’. 
3. Understanding Incentives

Asymmetric information

**Adverse Selection**: Immoral behaviour that takes advantage asymmetric information before a transaction. Example-Medical insurance

**Moral Hazards**: where the behavior of one party may change to the detriment of another after a transaction has taken place.
3. Understanding Incentives

For example, persons with insurance against automobile theft may be less cautious about locking their car, because the negative consequences of vehicle theft are now (partially) the responsibility of the insurance company.
3. Understanding Incentives

To resolve moral hazard

To invest in monitoring and surveillance and other methods of collecting information about the behavior of the party subject to moral hazard.

To align the incentives of the party subject to moral hazard with those of the less informed party.
3. Understanding Incentives

Types of Incentive Scheme

**Performance Pay** :- Incentive schemes resolve the moral hazard by tying payments to some measure of performance.

The scheme depends on a link between the unobservable action and some observable measure of performance.
3. Understanding Incentives

**Performance Quota:**

Minimum standard of performance, below which a worker is subject to penalties. The penalties could include deferral of promotion, reduction in pay or even dismissal.
3. Understanding Incentives

Performance Quota:-

Cost-effective way of inducing the worker to choose the economically efficient level of effort.

It is cost-effective because it does not reward effort below or above the economically efficient level.

It focuses the incentive at the economically efficient level of effort.
3. Understanding Incentives

**Relative Performance Incentive:** In some situations, the moral hazard can be resolved in a very natural way without imposing risk.

By gauging performance on a relative basis, the incentive scheme cancels out the effect of extraneous factors to the extent that they effect all workers equally.
4. Marginal Analysis

- Concept of Marginality deals with a unit increase in cost/revenue/utility.
- Marginal Cost/revenue/utility is the change in the total cost/revenue/utility due to unit change in output.
4. Marginal Analysis

- Marginal cost/revenue/utility is the total cost/utility/revenue of the last unit of output.
- \( MC_n = TC_n - TC_{n-1} \), Where \( n \) is the number of units of output.
4. Marginal Analysis

- Profits = Revenue – Costs
- Change in total revenue arising from a unit change in the output (Q): \( MR = \frac{dTR}{dQ} \)
- Slope (calculus derivative) of the total revenue curve
- Change in total costs arising from a unit change in the output (Q): \( MC = \frac{dTC}{dQ} \)
- Slope (calculus derivative) of the total cost curve
### 4. Marginal Analysis - Example

<table>
<thead>
<tr>
<th>No. of Unit</th>
<th>A: Total Revenue</th>
<th>Marginal Revenue</th>
<th>B: Total Cost</th>
<th>Marginal Cost</th>
<th>A-B: Profit</th>
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<tr>
<td>1</td>
<td>20000</td>
<td>-</td>
<td>4000</td>
<td>-</td>
<td>16000</td>
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<tr>
<td>2</td>
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<td>42000</td>
<td>8000</td>
<td>12000</td>
<td>4000</td>
<td>30000 (desired activity level)</td>
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<tr>
<td>4</td>
<td>46000</td>
<td>4000</td>
<td>16000</td>
<td>4000</td>
<td>30000 (absolute activity level)</td>
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</table>
4. Marginal Principle

To maximize profit, output should be increased up to the point where $MR = MC$

$MR > MC$ means the last unit of the output increased revenue more than it increased costs

$MR < MC$ means the last unit of the output increased costs more than it increased revenue
4. Incremental Analysis

In reality variables may not be subject to unit change always.

Incremental concept is applied when the change is not necessarily in term of single unit, but in bulk.
4. Incremental Analysis

- Estimates the impact of decision alternatives.

- **Incremental cost:** as the change in total cost as a result of change in the level of output, investment etc.

- **Incremental revenue:** as the change in total revenue resulting from a change in the level of output, prices etc.

- Manager always determines the worth of a decision on the basis of the criterion that IR>IC.
4. Incremental Analysis

Example

- An increase in the sales of firms due to introduction of online selling – *Incremental Revenue (IR)*
- Cost of launching the online selling mechanism – *Incremental Cost (IC)*
- If IR > IC – Decision of introducing online mechanism is right.
4. Marginal vs. Incremental Analysis

- Marginal relates to one unit of output.
- Incremental relates to one managerial decision - Multiple units of output is possible.
Model of an Economy: Real Flows and Money Flows (opposite direction to each other)
Session References

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Micro Economics : ICFAI University Press