HS201 - Economics

Indian Institute of Technology Ropar

September 4, 2020

Contents

Chapter 1

Managerial Economics and Theory

Managerial economics applies microeconomics theory to business problem. For example, how to use economic analysis to make decision to achieve firm's goal to profit maximization.

- **Microeconomics**
  Study of behaviour of individual economic agents.

1.1 Economic Cost of Resources

Opportunity cost of using any resource is what the firm owners must give up to use the resourse.

There are two kinds of resources

1. **Market-supplied resources**
   Resources owned by other and hired/rented/leased by the firm.

2. **Onwer-supplied resources**
   Resources owned and used by the firm.

1.2 Economic Costs

Total economic cost is the sum of opportunity costs of both market-supplied resources and owner-supplied resources.

$$Total\ economic\ cost = Explicit\ cost + Implicit\ cost$$

1. **Explicit Costs**
   It is the monetary payments to owners of market-supplied resources.

2. **Implicit Costs**
   Non-monetary opportunity costs of using owner-supplied resources.

   - **Equity Capital**
     Opportunity cost of cash provided
   - Opportunity cost of using land or capital owned by the firm
   - Opportunity cost of owner's time spent managing or working for the firm

1.3 Profit

$$Economic\ profit = Total\ revenue - Total\ economic\ cost$$
$$= Total\ revenue - Explicit\ cost - Implicit\ cost$$

$$Accounting\ profit = Total\ revenue - Explicit\ cost$$

The objective is to maximize **economic profit**.

1.4 Demand

The amount of a good or service consumers are willing and able to purchase during a given period of time is called demand.

The *demanded quantity* is represented by Q_d.

1.4.1 General Demand Function

The six variables that incluence the *demanded quantity* (Q_d) are

Factor	Symbol
Price of good or service	P
Income of consumers	M
Prices of related goods and services	P_R
Taste patterns of consumers	$\mathfrak{T}$
Expected future price of product	P_e
Number of consumers in market	N

Table 1.1: Factors affecting demand function

General demand function

$$Q_d = f(P, M, P_R, \mathfrak{T}, P_e, N)$$

Linear demand function

$$Q_d = a + bP + cM + dP_R + e\mathfrak{T} + fP_e + gN$$

The magnitude of b, c, d, e, f and g shows the effect on Q_d on changing the respective factor. The sign of b, c, d, e, f and g shows the relationship of the factor with Q_d

- Positive sign indicated direct relationship.

- Negative sign indicated inverse relationship.

Table 1.2 shows common dependence.

1.4.2 Direct Demand Function

Direct demand function shows how Q_d is related to product price P when all other variables are held constant.

$$Q_d = f(P)$$

Law of Demand

When all factors other than P are constant, $\dfrac{\Delta Q_d}{\Delta P}$ must be negative. In other words, if price increases, demand will decrease.

Variable	Relation	Sign of slope parameter
P	Inverse	Negative
M	Direct for normal goods	Positive
	Inverse for inferior goods	Negative
P_R	Direct for substitutes	Positive
	Inverse for complements	Negative
$\mathfrak{T}$	Direct	Positive
P_e	Direct	Positive
N	Direct	Positive

Table 1.2: Commonly observed pattern of dependence

1.4.3   Inverse Demand Function

Traditionally, price (P) is plotted on the vertical axis and quantity demanded (Q_d) is plotted on the horizontal axis.
Inverse of the demand function is *Inverse demand function.*

$$P = f(Q_d)$$

1.4.4   Graphing Demand Functions

A point on the demand curve gives two things:

1. Maximum quantity of goods that can be purchased at a given price.

2. Maximum price consumers would pay for the goods.

1.5   Supply

The amount of a good or service offered for sale during a given period of time is called supply.

The *quantity supplied* is represented by Q_s.

1.5.1   General Supply Function

The six variables that inclucence the *supplied quantity* (Q_s) are

Factor	Symbol
Price of good or service	P
Input prices	P_I
Prices of goods related in production	P_r
Technological advances	T
Expected future price of product	P_e
Number of firms producing product	F

Table 1.3: Factors affecting supply function

General supply function

$$Q_s = f(P, P_I, P_r, T, P_e, F)$$

Linear supply function

$$Q_s = h + kP + lP_I + mP_r + nT + rP_e + sF$$

The magnitude of k, l, m, n, r and s shows the effect on Q_s on changing the respective factor.
The sign of k, l, m, n, r and s shows the relationship of the factor with Q_s

- Positive sign indicated direct relationship.

- Negative sign indicated inverse relationship.

Table 1.4 shows common dependence.

Variable	Relation	Sign of slope parameter
P	Direct	Positive
P_I	Inverse	Negative
P_r	Inverse for substitutes	Negative
	Direct for complements	Positive
T	Direct	Positive
P_e	Inverse	Negative
F	Direct	Positive

Table 1.4: Commonly observed pattern of dependence

1.5.2   Direct Supply Function

Direct supply function shows how Q_s is related to product price P when all other variables are
held constant.

$$Q_s = f(P)$$

Law of Supply

When all factors other than P are constant, $\dfrac{\Delta Q_s}{\Delta P}$ must be positive. In other words, if price
increases, supply will increase.

1.5.3   Inverse Supply Function

Traditionally, price (P) is plotted on the vertical axis and quantity supplied (Q_s) is plotted on the
horizontal axis.
Inverse of the supply function is *Inverse supply function.*

$$P = f(Q_s)$$

1.5.4   Graphing Supply Functions

A point on the supply curve gives two things:

1. Maximum quantity of goods that will be offered for sale at a given price.

2. Minimum price necessary to induce producers to voluntarily offer a particular quantity for
   safe.

Bibliography