

BT243: Macroeconomics Notes

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1 Introduction

1.1 Basic Definitions

Scarcity is a situation in which resources are limited and can be used in different ways, so we *must sacrifice one thing for another*.

Labor is the primary source for providing goods and services.

Opportunity cost is what we give up when we make a choice or a decision.

Economics is the study of the choices made by people (*individuals and societies*) who are faced with scarcity. The two major fields are microeconomics and macroeconomics. *Microeconomics* studies consumers and producers. *Macroeconomics* studies the economy as a whole.

1.1.1 Economic questions a society is faced with...

1. What will be produced?
2. How will it be produced?
3. Who consumes the goods and services produced?

1.2 Production Possibility Frontier (PPF)

The **PPF** is a graph that shows all possible combinations of goods and services that can be produced if all resources used efficiently. This is a limit that cannot be exceeded; it represents the best case scenario (in terms of efficiency).

Example 1.1 Consider two goods: defense goods and non-defense goods. With limited resources only certain combinations can be produced; these include the following:

- A 200 units of defense goods and 0 units of non-defense goods
- B 195 units of defense goods and 25 units of non-defense goods (opp. cost = 5)
- C 188 units of defense goods and 50 units of non-defense goods (opp. cost = 7)
- D 175 units of defense goods and 75 units of non-defense goods (opp. cost = 13)
- E 155 units of defense goods and 100 units of non-defense goods (opp. cost = 20)

F 125 units of defense goods and 125 units of non-defense goods (opp. cost = 30)

G 75 units of defense goods and 150 units of non-defense goods (opp. cost = 50)

H 0 units of defense goods and 160 units of non-defense goods (opp. cost = 75)

Opportunity cost increases as specialization in inputs to the labor must be given up.

Graphically, the **PPF** represents the barrier between inefficient use of resources and unachievable levels of production given the scenario. A coordinate under the PPF curve indicates under-utilization of resources. A coordinate above the PPF is an impossible combination and, by definition, unachievable.

The PPF can be shifted (in the positive direction) if there is an *increase in resources* or an *improvement in technology*; this is called **economic growth**. **International trade** can help a nation move beyond their maximum capabilities in terms of consumption (exceed their PPF).

2 Demand and Supply Model

Firms produce and supply their output to the **consumers** who demand the product.

2.1 Demand

The quantity (Q) **demanded** is the amount of a good or service that consumers are willing and able to buy. Willingness and ability are the primary determinants of demand. Price of a product is the main determinant of our willingness and ability to purchase a product.

Determinants of demand:

1. Price of the product (P)

- As the price of a product increases, the quantity of the product demanded decreases.
- As the price of a product decreases, the quantity of the product demanded increases.
- The **Law of Demand** is the negative relationship between price and quantity.

2. Income (M)

- As income increases, the quantity of products demanded (typically) increases.
- As income decreases, the quantity of products demanded decreases.
- For some products these relationships are the opposite. These products are considered ***inferior goods***; such products are demanded more when income is lower due to the nature of the product (e.g. fast food or bus rides).

3. Prices of related goods

- When an increase in the price of one good causes the demand for another good to increase, the two goods are called ***substitutes***.
- For example eating at restaurants and at-home can be considered *substitutes*. If the price of eating at restaurants increases and causes a greater demand for eating-at-home/grocery-shopping (for example), then these two products are considered ***substitutes***.
- When an increase in the price of one good causes the demand for another good to decrease, the two goods are called ***complements***.
- For example gasoline and big-cars can be considered *complements* because as the price of gasoline increases, the demand for big-cars (that burn a lot of gas!) decreases.

4. Taste and preferences of consumers

5. Expectations of consumers

- This refers to consumers' beliefs about future income and prices.

Example 2.1 *Ice-cream cones price-quantity relationship*

$P(\$)$	Q
0	12
0.5	10
1	8
1.5	6
2	4
2.5	2
3	0

There is a negative relationship between P and Q . The graph of price vs. quantity is the ***demand curve***. The demand curve is linear. If income changes, the original relationship between price and quantity changes; thus, the demand curve will shift.

Note 2.1 *A change in price results in movement along the demand curve.*

Note 2.2 *Demand curve shifting...*

- *The demand curve shifts to the right when there is an increase in demand.*
- *The demand curve shifts to the left when there is a decrease in demand.*

Definition 2.1 ***celeris paribus** means "other things being equal". For example when modeling examples, we draw conclusions given that everything besides what we specifically study is constant.*

Definition 2.2 ***Market demand** is—simply—the sum of all individual demands.*