

Week #1 Notes – Economics ~ Law of Increasing Cost

1. **What is Economics? :** Economics is the **study** that examines how people choose to use **scarce** resources in attempting to satisfy their **unlimited** wants."
2. **Microeconomics vs. Macroeconomics:** Economic analysis is divided into two main branches, which are microeconomics and macroeconomics.
 - a. **Microeconomics:** Concentrates on the choices made by individual participants such as consumers, workers, business managers, and investors. The emphasis is on how prices are determined and how prices influence decisions.
 - b. **Macroeconomics:** Concentrates on the overall performance of the economy and the way various sectors of the economy relate one another. Deals with the overall performance of the economy: total production, price level, rate of inflation, employment, unemployment and growth rate.
3. **Scarcity:** is the imbalance between our desires and the means of satisfying those desires.
 - a. Scarcity is the fundamental economic problem not only for poor societies, but also for rich societies.
 - b. Is pollution scarce? If we desire the pollution, the answer is yes. However, in economics, pollution is seen as undesirable concept, so the answer is NO.
4. **Opportunity Cost:** is the highest valued alternative that must be given up to engage in an activity.

Ex. 1: If you are considering the choice between a PC and a Mac, then the opportunity cost of choosing a Mac is the PC, and vice versa.

Ex. 2: Opportunity cost of coming to class: cost of coming to class + cost of your time in dollars.
5. **Marginal Analysis:**
 - a. **Marginal** means extra or next.
 - b. **Marginal analysis** is a step-by-step way of determining how people engaging in rational behavior make choices. It looks the benefits and costs associated with your purchase of each additional unit.
 - c. **Marginal benefit** is the dollar value of the satisfaction you obtain from each additional unit.
 - d. **Marginal cost** is the dollar value of the sacrifice you must make to obtain each additional unit.

Ex. 3:

Marginal Benefit

| # of Baklava | Total Benefit | Marginal Benefit |
|--------------|---------------|------------------|
| 1 | 30 | 30 |
| 2 | 55 | 25 |
| 3 | 70 | 15 |
| 4 | 75 | 5 |

Marginal Cost

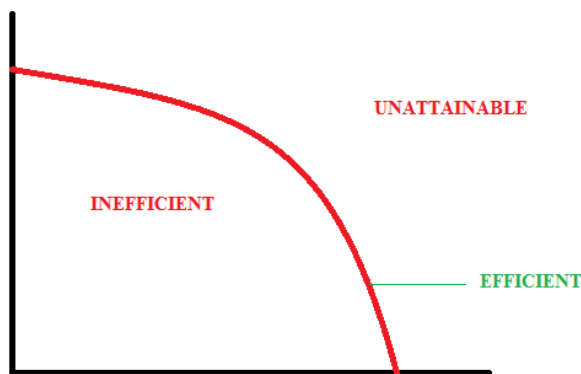
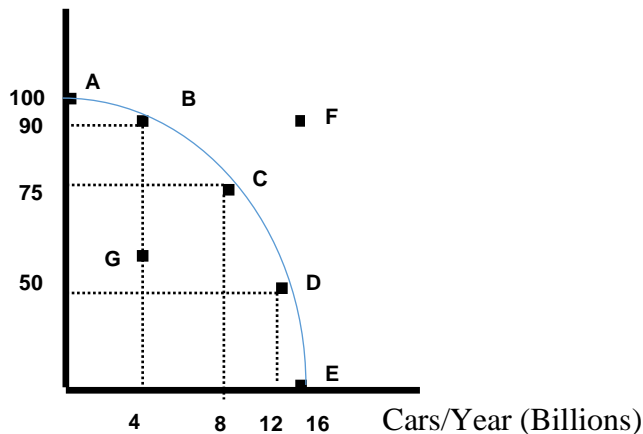
| # of Baklava | Total Cost | Marginal Cost |
|--------------|------------|---------------|
| 1 | 14 | 14 |
| 2 | 28 | 14 |
| 3 | 42 | 14 |
| 4 | 56 | 14 |

Marginal analysis

| # of Baklava | Marginal Benefit | Marginal Cost | Net Gain | Buy or not |
|--------------|------------------|---------------|----------|------------|
| 1 | 30 | 14 | 16 | YES |
| 2 | 25 | 14 | 11 | YES |
| 3 | 15 | 14 | 1 | YES |
| 4 | 5 | 14 | -9 | NO |

6. **Rational Behavior:** means that in deciding on any action you compare the marginal benefit of that action with its marginal cost.
- For each additional unit:
If $MB > MC \rightarrow$ Go for it (Consume this extra unit)
If $MB < MC \rightarrow$ Avoid it (Don't consume this extra unit)
 - Is a person rational if he/she consumes the extra unit when $MB = MC$? Yes, he/she is indifferent between consuming or not. Thus, keep consuming until $MB < MC$ (When net gain is negative)
7. **Resources:** Economic resources are the inputs used in the process of production.
- Labor:** Services of individuals in the production process of goods and services. Physical and mental efforts.
 - Capital:** The equipment, tools, machinery, vehicles, skills (human capital) to help produce goods and services. Can we say "financial resources" are also capital? No, if they are used as an input in the production process, then we can call them capital. Otherwise: NO.
 - Natural Resources:** Land used as sites for structures, ports and other facilities, timber, petroleum, timber, environmental quality and etc.
 - Entrepreneurship:** is the talent to develop products and processes and to organize production to make goods and services. Entrepreneurs are innovators and risk takers.
8. **Technology:** is the knowledge of how to produce goods and services. Alleviates or diminishes scarcity by making workers, capital and land more productive.
9. **Outputs:** Goods and services
10. **Production Possibilities Curve/Frontier (PPC/PPF):** A curve showing the maximum attainable combinations of two products that may be produced with available resources and current technology.
- Assumptions for non-linear PPC:**
 - Fixed resources.
 - Two classes of outputs for simplicity.
 - Some inputs are specialized (The more specialized a worker, the higher the opportunity cost of transferring him/her to another type of work).
 - Technology is fixed and does not change during the year.

Computers/Year (Billions)



b. What do these points mean?

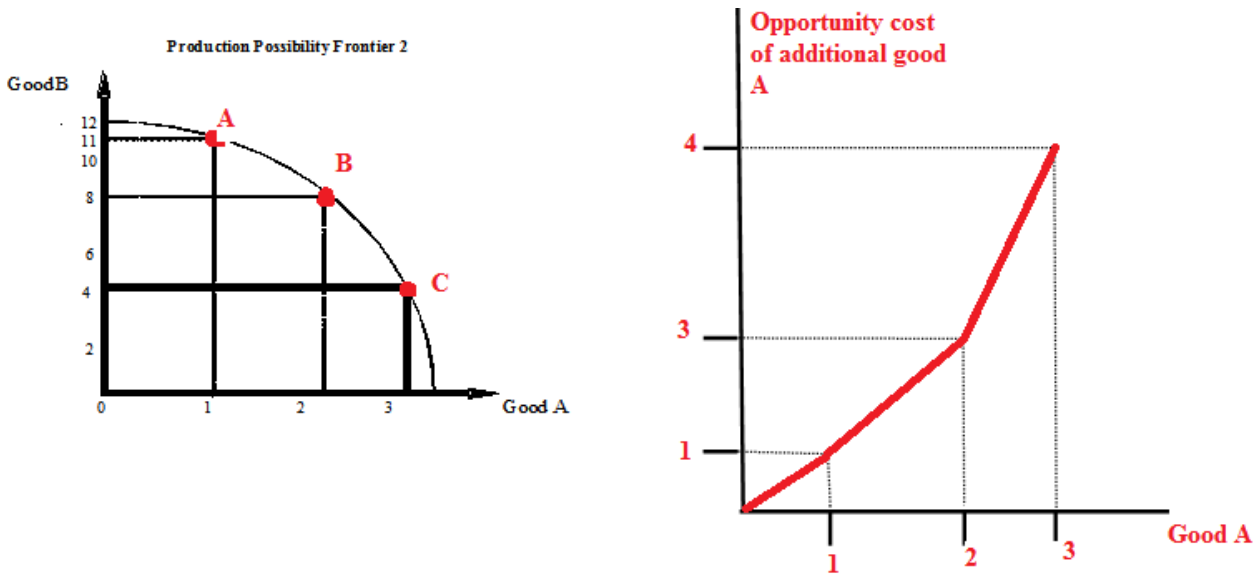
- i. All points on or within the production possibilities curve represent possible annual combinations of goods that can be produced. Differences between efficient, inefficient, and unattainable?
- ii. Any point along the PPC Curve represents the full utilization of available resources.
- iii. **Productive Efficiency:** is attained when the maximum possible output of any good, given the output of the other goods, is produced. It means that we cannot reallocate economic resources to increase the output of any good or service without decreasing the output of some other goods and services.
- iv. Point A: all resources are devoted to computers and 100 billion are produced (efficient).
 Point E: all resources are devoted to cars and 16 billion are produced (efficient).
 Point G: resources are underutilized, wasted or mismanaged (inefficient).
 Point F: this point is unattainable given available resources and technology.

c. Opportunity Cost and the PPC:

- i. Starting at Point A – where 100 billion computers are produced, if we move to point B, we must give up 10 billion computers but we get 4 billion cars as a result. The opportunity cost of the first 4 billion cars is 10 billion computers.
- ii. Moving from point B → C: The opportunity cost of the 4 billion cars is 15 billion computers.
- iii. Moving from point C → D: The opportunity cost of the 4 billion cars is 25 billion computers.

iv. Moving from point D → E: The opportunity cost of the 4 billion cars is 50 billion computers.

11. Law of Increasing Costs: The opportunity cost of each additional unit of output of a good increase over a period of time as more of that good is produced.



Because some resources are specialized, the opportunity cost of each additional unit of output increases as more of a good is produced over a given period. So, specialized resources implies the “bowed in” (concave) shape of the production possibilities curve that reflects the law of increasing costs.

→ What is the shape of PPF if we don't assume specialized resources?

