

LECTURE 2

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1. Review lecture 1

- What is Economics?
The study of how individuals and societies choose to use the scarce resources that nature and previous generations have provided.
- Why we study Economics?
To learn a way of thinking
To understand society
To understand global affairs
To be an informed voter
- **Opportunity cost**— the best alternative that we forgo, or give up when we make a choice or decision.
- **Marginalism, sunk cost, efficient markets, no free lunch**
- **Scope of economics: Micro and Macro**
 - (1) **Microeconomics**—the branch of economics that examines the functioning of individual industries and the behavior of individual decision-making units—that is, business firms and households.
 - (2) **Macroeconomics**—the branch of economics that examines the economic behavior of aggregates—income, employment, output, and so on—on a national scale.
- **Method of Economics: Positive and normative**
 - (1) **Positive Economics**—an approach to economics that seeks to understand behavior and the operation of systems without making judgments. It describes what exists and how it works.
-Divided into Descriptive and Economic theory
 - Theories
 - Models

- Variables
- Principle of Ockham's razor
- Ceteris Paribus or all else equal

(2) **Normative Economics**—an approach to economics that analyzes outcomes of economic behavior, evaluates them as good or bad, and may prescribe courses of action. Also called *policy economics*.

▪ **Expressing Models in Words, Graphs, and Equations**

2. Continuation of Lecture 1

▪ **Cautions and pitfalls in formulating theories and models:**

(1) post hoc fallacy

- Correlation
- Causation

(2) fallacy of composition.

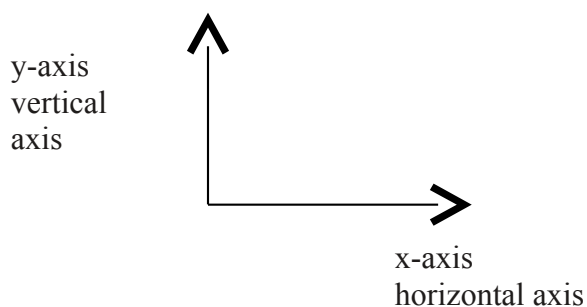
▪ **Empirical economics**—the collection and use of data to test economic theories.

Economic Policy

- The formulation of economic policy requires having **OBJECTIVES**.
- Criteria for judging economic outcomes.
 1. Efficiency
 2. Equity
 3. Growth
 4. Stability

3. Graphing Appendix

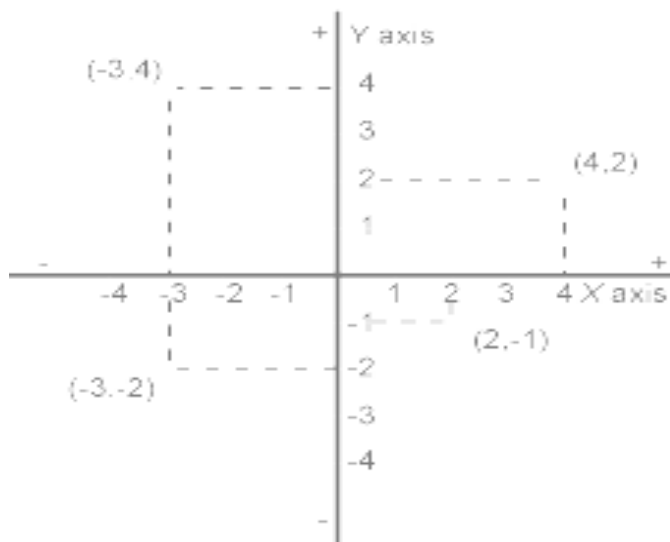
- **Graph**—a two-dimensional representation of a set of numbers or data



- A ***time series graph*** shows how a single variable changes over time.

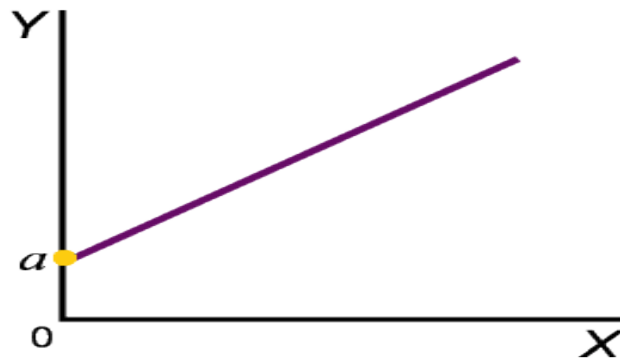
Cartesian coordinates

- **Cartesian coordinates**

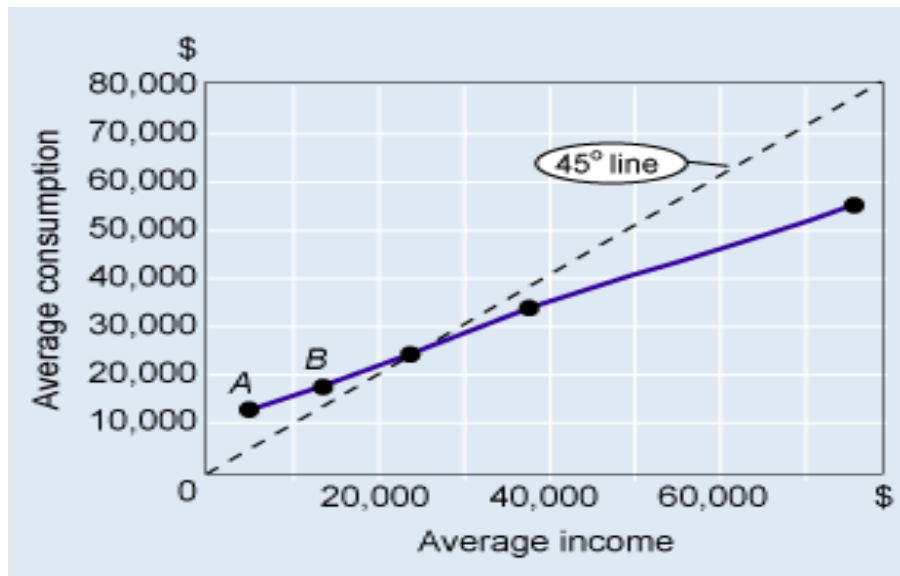


- The ***Cartesian coordinate system*** is the most common method of showing the relationship between two variables.
- The horizontal line is the ***X-axis***
- The vertical line the ***Y-axis***.
- The point at which the horizontal and vertical axes intersect is called the ***origin***.
- The point at which the line intersects the Y-axis (point *a*) is called the ***Y-intercept***. (*See the next graph*)
- ***The Y-intercept, is the value of Y when X = 0.***

- **Examples:**



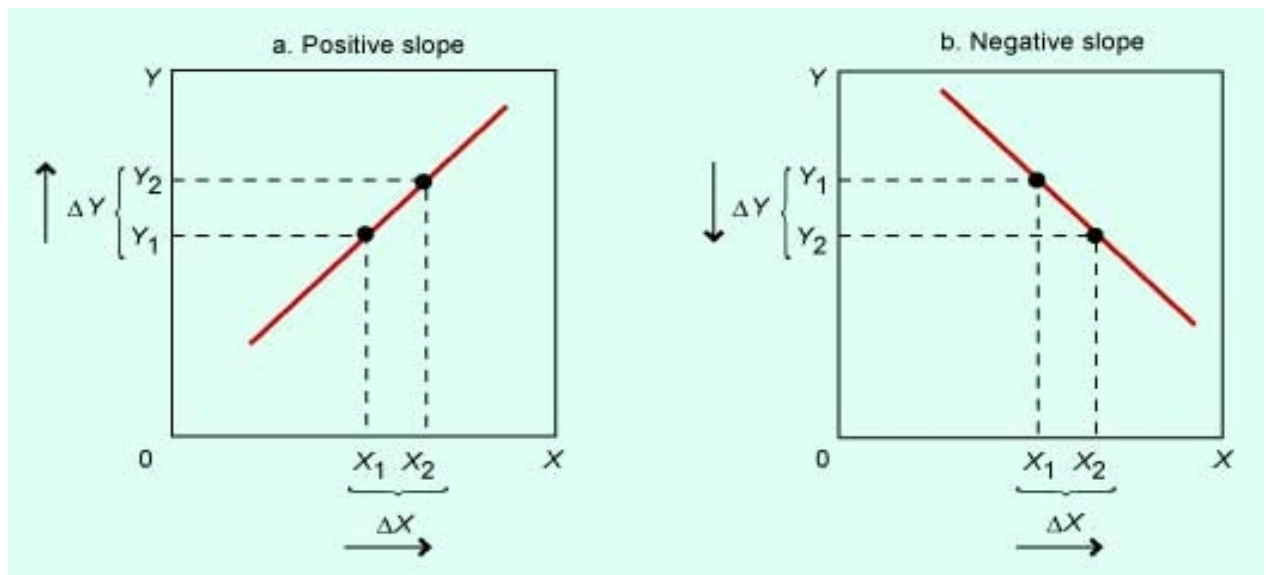
Consumption and spending graph



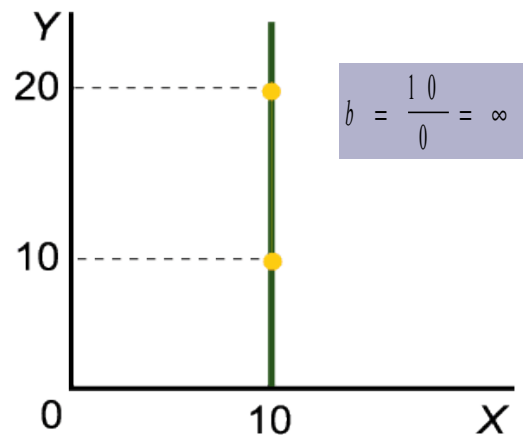
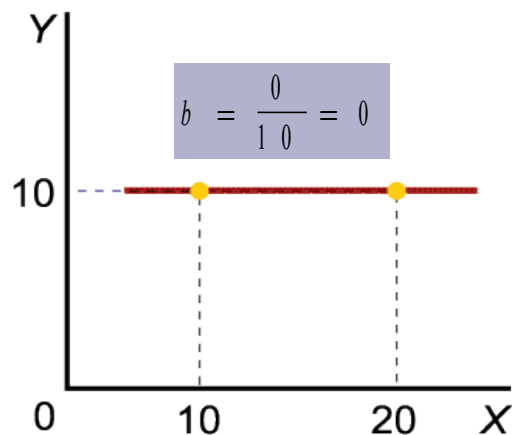
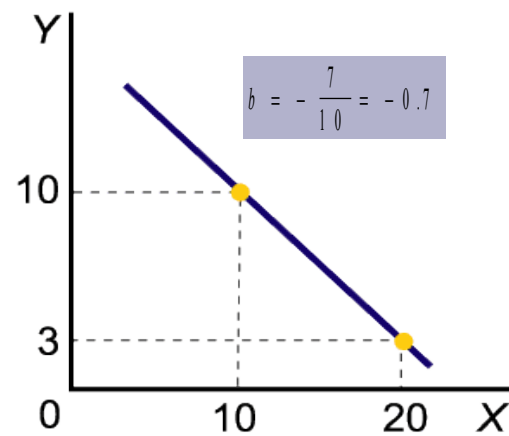
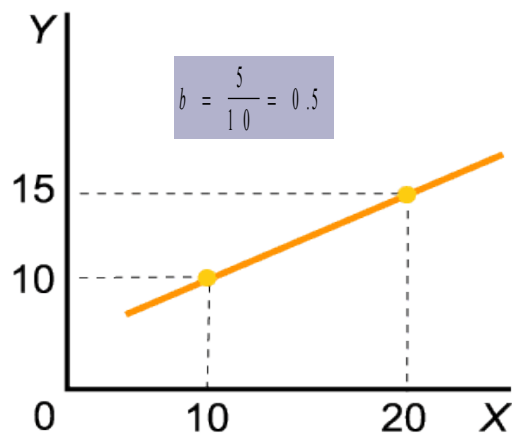
- This line slopes upward, indicating that there seems to be a positive relationship between income and spending.
- Points *A* and *B*, above the 45° line, show that consumption can be greater than income.

Positive and negatively sloped lines

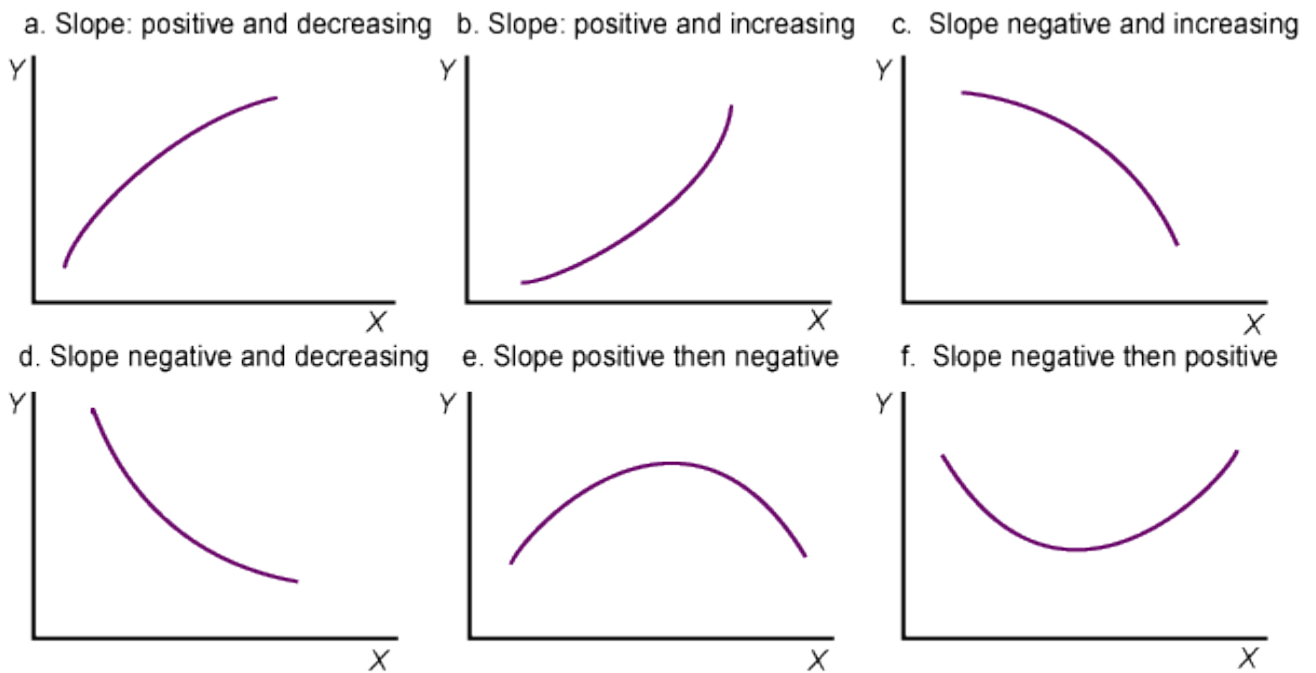
- An **upward-sloping** line describes a **positive relationship** between *X* and *Y*.
- A **downward-sloping** line describes a **negative relationship** between *X* and *Y*.



Calculating Slopes



Types of Slopes



5. The Economic Problem: Scarcity and Choice

- *Human wants are unlimited, but resources are limited or scarce.*
Therefore we must choose **among competing uses of resources** and **among alternative final distribution of what is produced among households.**
- What is a resource?
Resources—anything provided by nature or previous generations that can be used directly or indirectly to satisfy human wants.
e.g. land, wildlife, timber, energy
Buildings, equipment
Human workforce – talents, knowledge etc.

Resources = inputs into the production process = factors of production.
Examples: land, labor, capital (others given in text, we will primarily deal with these three).

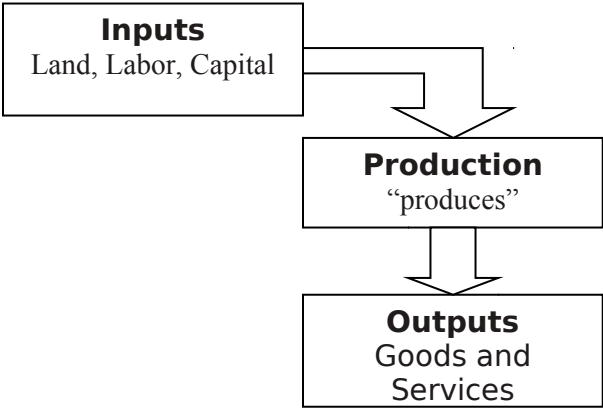
- What is capital?
Capital—things that are themselves produced and that are then used in the production of goods and services. Examples: PC, buildings, equipment, shovel

Use these things to produce other stuff. That makes them inputs in the production process.

Production—the process that transforms scarce resources into useful goods and services.

- the

Inputs
Land, Labor, Capital



Resources or factors of production are **inputs** into the process of production.

Production is process that transforms scarce resources
- the

into useful goods and services.
- Goods and services of value to households are the **outputs** of the process of production. i.e. Usable products

Scarcity and Choice in a One-Person Economy

- Nearly all the basic decisions that characterize complex economies must also be made in a single-person economy.
- Constrained choice* and *scarcity* are the basic concepts that apply to every society.

Scarcity and Choice in an Economy of Two or More

6. Three basic questions must be answered in order to understand an economic system:

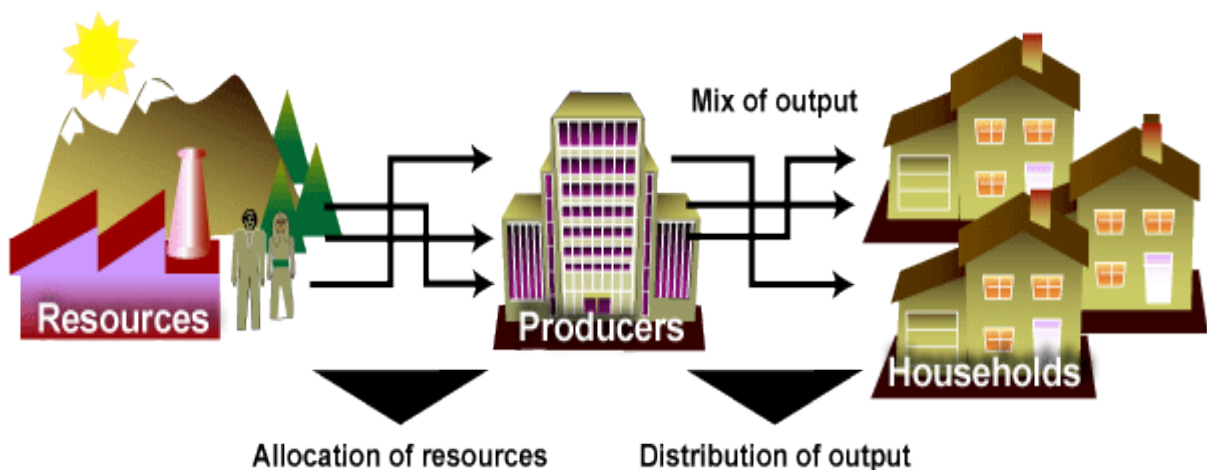
- What gets produced?
 - How is it produced?
 - Who gets what is produced?
- } Focus of economics

The three basic questions:

1. What gets produced?

2. How is it produced?

3. Who gets what is produced?



- Every society has some system or mechanism that transforms that society's scarce resources into useful goods and services

7. Absolute and comparative advantage

- A producer has an ***absolute advantage*** over another in the production of a good or service if it can produce that product using *fewer resources*.
- A producer has a ***comparative advantage*** in the production of a good or service over another if it can produce that product at a *lower opportunity cost*.

Absolute Advantage (ADAM SMITH) and Comparative advantage (DAVID RICARDO)

	Daily Production	
	Wood (logs)	Food (bushels)
Colleen	10	10
Bill	4	8

- Colleen has an ***absolute advantage*** in the production of both wood and food because she can produce more of both goods using fewer resources than Bill.
- **In terms of wood:**
 - For Bill, the opportunity cost of 8 bushels of food is 4 logs.
 - For Colleen, the opportunity cost of 8 bushels of food is 8 logs.
- **In terms of food:**
 - For Colleen, the opportunity cost of 10 logs is 10 bushels of food.
 - For Bill, the opportunity cost of 10 logs is 20 bushels of food.

Absolute Advantage and the Gains From Trade

Daily production		
	Wood (logs)	Food (Bushels)
Colleen	6	1
Bill	1	2

- **Colleen has absolute advantage in Wood**
- **Bill has absolute advantage in Food**

Specialization

- **If Colleen specializes in Wood and Bill in Food**

Daily production		
	Wood (logs)	Food (Bushels)

Colleen	12	0
Bill	0	4

Comparative Advantage and the Gains From Trade

Even if a nation had an absolute disadvantage in the production of both commodities, MUTUALLY ADVANTAGEOUS TRADE is also possible.

Daily production		
	Wood (logs)	Food (Bushels)
Colleen	6	3
Bill	1	2

Colleen has comparative advantage in Wood

Bill has comparative advantage in Food

By specializing on the basis of comparative advantage, Colleen and Bill can produce more of both goods.

Specialization, Exchange and Comparative Advantage

- According to the *theory of competitive advantage*, specialization and free trade will benefit all trading parties, even those that may be absolutely more efficient producers.

Capital Goods and Consumer Goods

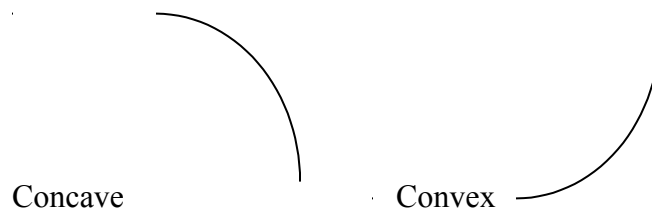
- *Capital goods* are goods used to produce other goods and services.
- *Consumer goods* are goods produced for present consumption.
- *Investment* is the process of using resources to produce new capital. Capital is the accumulation of previous investment.
- The opportunity cost of every investment in capital is forgone present consumption.

8. Production Possibilities Frontier (PPF)

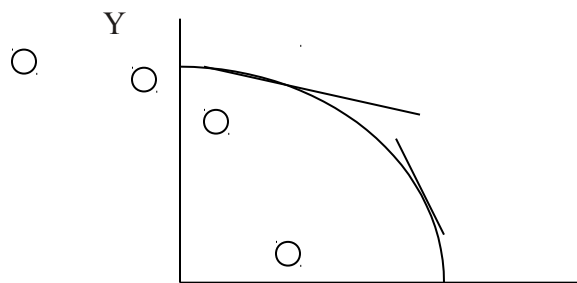
- Production possibilities frontier—graph that shows all the combinations of goods and services that can be produced if all of society's resources are used efficiently.
- The production possibility frontier curve has a negative slope, which indicates a trade-off between producing one good or another.



- In general, PPF's are NOT straight lines.
- They are CONCAVE curves
- Example of concave and convex curves



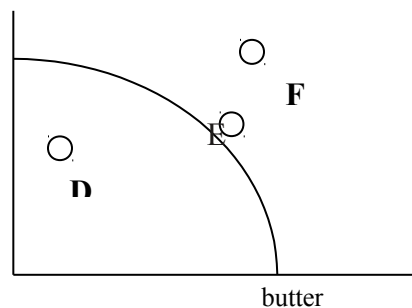
- In general, a PPF should look like this:



- We can produce two goods, X or Y_X
- We can choose to only produce X (point A) and no Y.
- Or to produce only Y and no X. (point B)
- Or, more realistically, we will produce somewhere in between, e.g. C or D.
- These are all possible points on the PPF.

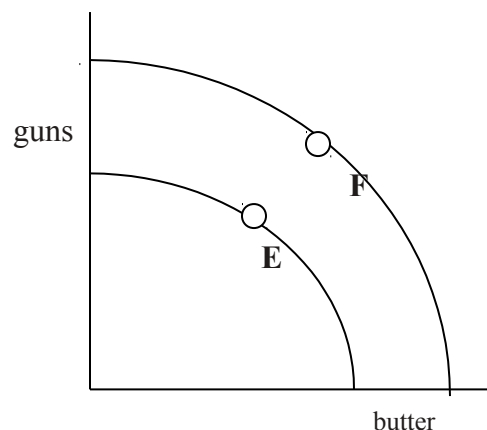
- All points on the curve are combinations of output produced using full resource employment and production efficiency. They are both achievable and efficient.
 - Production efficiency means producing a given combination of outputs at least cost.
 - This implies producing the maximum quantity of both goods given society's resources and technology.
- Points inside the curve are achievable but are inefficient or resources are not fully employed at these points.
- Points outside the curve are not attainable.
- Different points on the PPF show the quantities of each of the two goods.
- Negatively sloped because they face opportunity costs.
- Concave because they face increasing opportunity costs.

▪ PPF
guns
Y



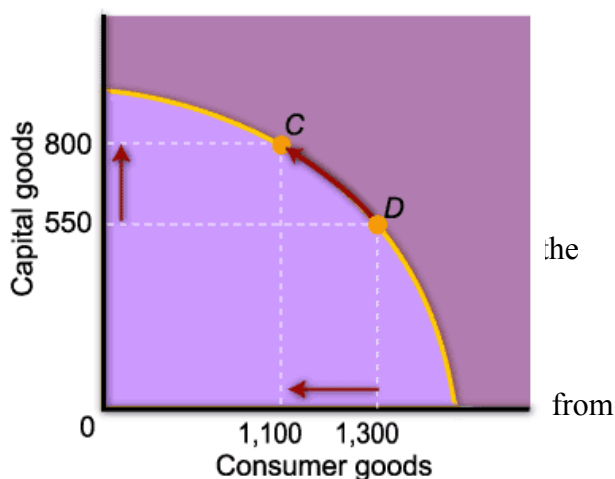
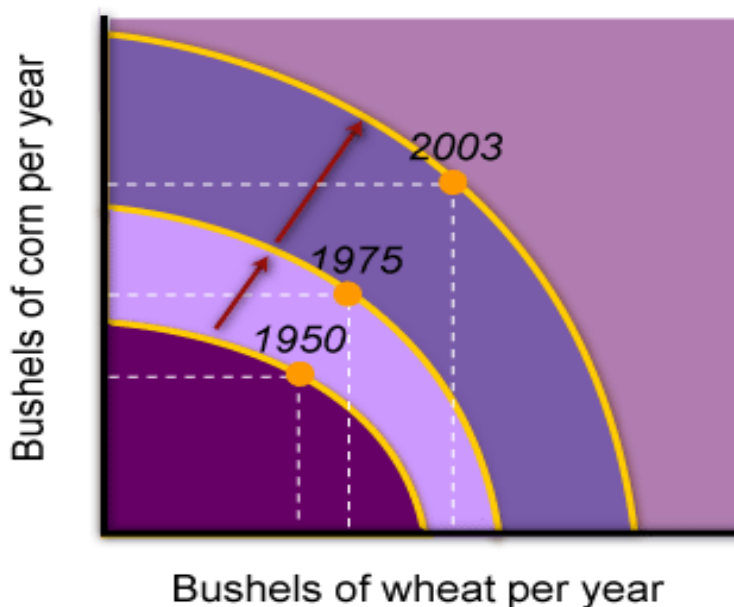
- D is achievable but inefficient.
 - It is inefficient b/c we could have more guns, more butter, or more of both.
 - Some resources are not being used.
- E is on the PPF so it is a point of full resource employment and production efficiency.
- F is unattainable with current resources and technology.
 - To get to point F we would need economic growth.

9. Economic Growth

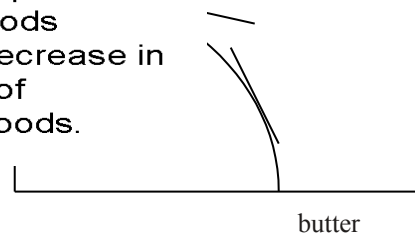


- Economic growth pushes the PPF out/away from the origin
- Increase in total output of an economy
- An outward shift means that it is possible to increase the production of one good without decreasing the production of the other.

- Occurs when a society acquires new resource or when society learns to produce more with existing resources.
- New resources – larger labor force or increased capital stock
- Improved productivity – technical change and innovation, the discovery and application of new, more efficient production techniques, e.g. assembly line.
- Two most important sources of growth: accumulation of capital and technological advances.
- Not every sector of the economy grows at the same rate.



- A move along the curve illustrates the concept of opportunity cost.
- From point D, an increase the production of capital goods requires a decrease in the amount of consumer goods.

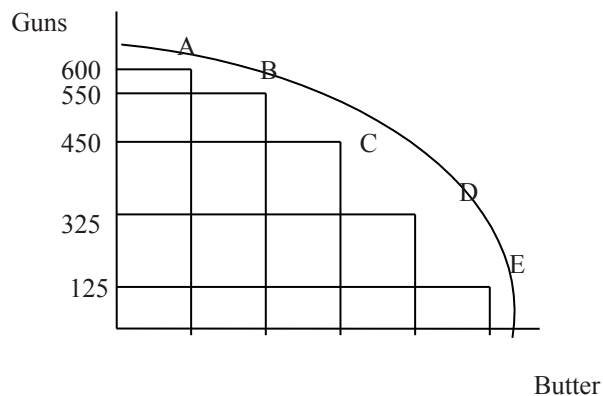


- Negative—means to increase production of the good on the x-axis (here consumption goods), we need to decrease production of the y good. And vice versa, if we want to produce more y, we need to give up some x.
- Concave—means we face increasing costs. I.e. need to give up more and more of y for each additional unit of x or vice versa, (need to give up more and more of x for each additional unit of y).

- The slope of the PPF is the Marginal Rate of Transformation (MRT).
 - **The Marginal Rate of Transformation (MRT)**—The slope of the Production Possibility Frontier. It is negative and it changes to show **law of increasing opportunity costs**.

11. Law of Increasing Opportunity Costs

Point on PPF	Guns	Butter
A	600	100
B	550	200
C	450	300
D	325	400
E	125	500

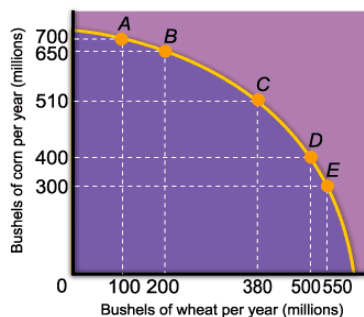


- A
s

we move from left to right, to get the same amount of butter, we need to give up more and more guns.

Why is this?

- Because factors of production are **not homogeneous** (they are not all the same).
- Resources are not homogeneous – different abilities, etc. and therefore to produce more and more of one commodity encroaches on resources that are less efficient for that commodity. That is why we face increasing opportunity costs.



- The negative slope of the ppf curve reflects the *law of increasing opportunity cost*. As we increase the production of one good, we sacrifice progressively more of the other.

12. Economic Systems

- **The economic problem:** Given scarce resources, how, exactly, do large, complex societies go about answering the three basic economic questions?
- **Economic systems** are the basic arrangements made by societies to solve the economic problem. They include:
 - Command economies
 - Laissez-faire economies
 - Mixed systems
- In a **command economy**, a central government either directly or indirectly sets output targets, incomes, and prices.
- In a **laissez-faire economy**, individuals and firms pursue their own self-interests without any central direction or regulation.
- The central institution of a laissez-faire economy is the **free-market system**.
- A **market** is the institution through which buyers and sellers interact and engage in exchange.
- **Consumer sovereignty** is the idea that consumers ultimately dictate what will be produced (or not produced) by choosing what to purchase (and what not to purchase).
- **Free enterprise:** under a free market system, individual producers must figure out how to plan, organize, and coordinate the production of products and services.
- In a laissez-faire economy, the **distribution of output** is also determined in a decentralized way. The amount that any one household gets depends on its income and wealth.
- The basic coordinating mechanism in a free market system is price. **Price** is the amount that a product sells for per unit. It reflects what society is willing to pay.

Since markets are not perfect, governments intervene and often play a major role in the economy. Some of the goals of government are to:

- Minimize market inefficiencies
- Provide public goods
- Redistribute income
- Stabilize the macroeconomy:
 - Promote low levels of unemployment
 - Promote low levels of inflation

Recap:

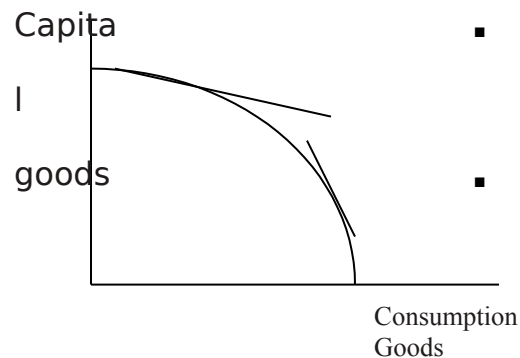
- Increasing costs, PPF is concave.
- Increasing costs b/c inputs are not homogeneous.
- Law of increasing opportunity costs: The marginal rate of transformation (MRT) is the slope of the PPF. The slope of the PPF is not only negative, but also increasing (the curve is concave). This implies increasing opportunity costs. Since the PPF gets steeper as you move along the horizontal axis, greater quantities of

- the good on the vertical axis must be given up in order to produce on more unit of the good on the horizontal axis.
- Points inside the curve are inefficient. Resources are either unemployed or are used inefficiently.
- Points outside the curve are desirable but unattainable given the amount of resources available in the economy and current technology.
- Points on the curve – resources are fully and efficiently employed.
- Economic growth – shifts curve out and to the right.

Current versus Future Consumption

- Done all this 2 goods – both current consumption.
- Could also show the tradeoff between current and future consumption.
- One way is to graph capital goods versus consumer goods.
- **Capital goods**—Goods used to produce other goods and services.
- **Consumer goods**—Goods produced for present consumption.
- **Investment**—The process of using resources to produce new capital. Capital is the accumulation of previous investment.

The Opportunity Cost of every investment in capital is forgone present consumption.



- PPF illustrates: scarcity, unemployment, inefficiency, opportunity costs, law of increasing opportunity costs, economic growth, and gains from trade.
- Helps us to discuss The Economic Problem.