

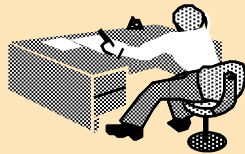
Production Possibilities and Opportunity Cost

- 1. Resources and Technology*
- 2. The Production Possibilities Curve. The Law of Increasing Costs*
- 3. Productive Efficiency.*
- 4. Economic Growth*

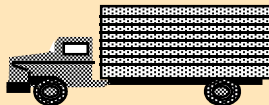
The Process of Production

Inputs

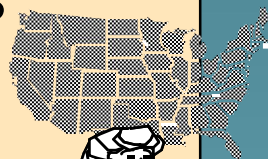
Labor



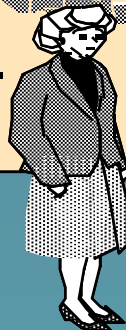
Capital



**Natural
resources**

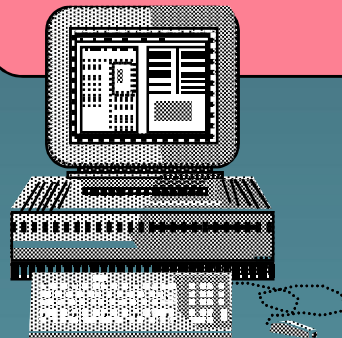


**Entrepren-
eurship**



Production

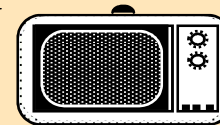
Technology



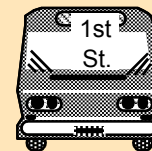
Outputs

Goods

and



Services



Capital is the equipment, tools, structures, machinery, vehicles, materials, and skills created to help produce goods and services.

Natural resources include land used as sites for structures, ports and other facilities, that are used in crude form in production.

Entrepreneurship is the talent to develop products and processes and to organize production to make goods and services available.

Technology is the knowledge of how to produce goods and services.

A Model of Production Possibilities

- *Variables: Outputs of two alternative goods per year.*
- *Assumptions:*
 - 1. Fixed quantity and quality of economic resources*
 - 2. Only two outputs*
 - 3. Some inputs are specialized*
 - 4. Technology is given.*

Box 1. A Production Possibilities Curve

Box 1

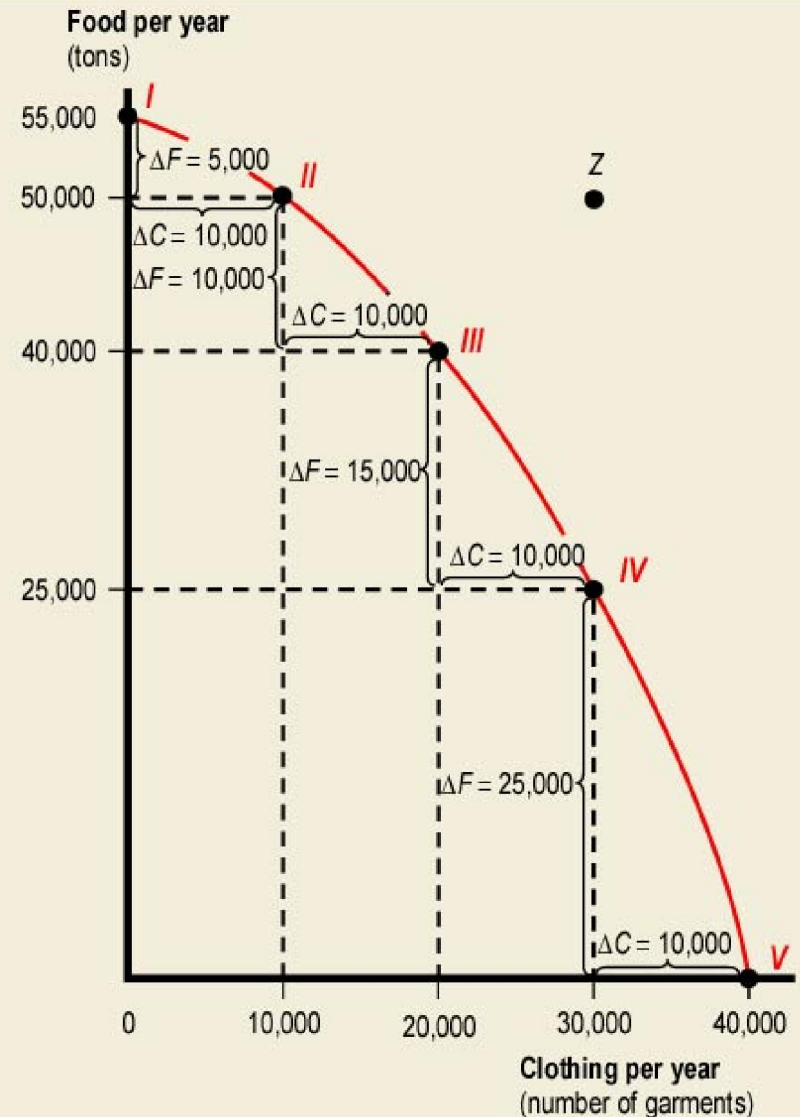
A Production Possibilities Curve

Points on this production possibilities curve show alternative combinations of clothing and food that can be produced in an economy assuming that no other products are made. Each point on the curve gives the maximum amount of one good that can be produced given the output of the other good. To reach a point on the curve, resources must be fully utilized and there must be no waste or mismanagement in production. Point Z is unattainable given available resources and technology.

Annual Production Possibilities for Food and Clothing*

Type of good	Production possibilities				
	I	II	III	IV	V
Food per year (tons)	55,000	50,000	40,000	25,000	0
Clothing per year (number of garments)	0	10,000	20,000	30,000	40,000

* Hypothetical data assuming full utilization of economic resources and no waste or mismanagement in production.



Box 2. Increasing Opportunity Cost of Additional Clothing

Box 2

Increasing Opportunity Cost of Additional Clothing

The opportunity cost of each 10,000-garment batch of clothing increases as more clothing is produced per year.

Opportunity cost of additional clothing
(tons of food per year)

Opportunity Cost of Successive 10,000-Garment Batches of Clothing

Annual output of clothing (number of garments)	Increase in clothing output (number of garments) = ΔC	Opportunity cost of each successive 10,000 garments = ΔF
0		
10,000	10,000	5,000 tons of food per year
20,000	10,000	10,000 tons of food per year
30,000	10,000	15,000 tons of food per year
40,000	10,000	25,000 tons of food per year



The Law of Increasing Costs

- *The opportunity cost of each additional unit of output increases as more of a good is produced over a given period.*
- *The “bowed in” shape of the production possibilities curve reflects the law of increasing costs.*

Productive Efficiency

- *If we achieve productive efficiency, in a given period, when resources and technology are fixed, we can obtain more of one item only by sacrificing the opportunity to produce alternative items.*

Productive Efficiency

- *Exists when the maximum output of any one good is achieved over a period, given:*
 - 1. The output levels of all other goods*
 - 2. Technology*
 - 3. Available resources.*

Division of labor

is the breakdown of a larger process into particular tasks performed by workers who specialize in those tasks.

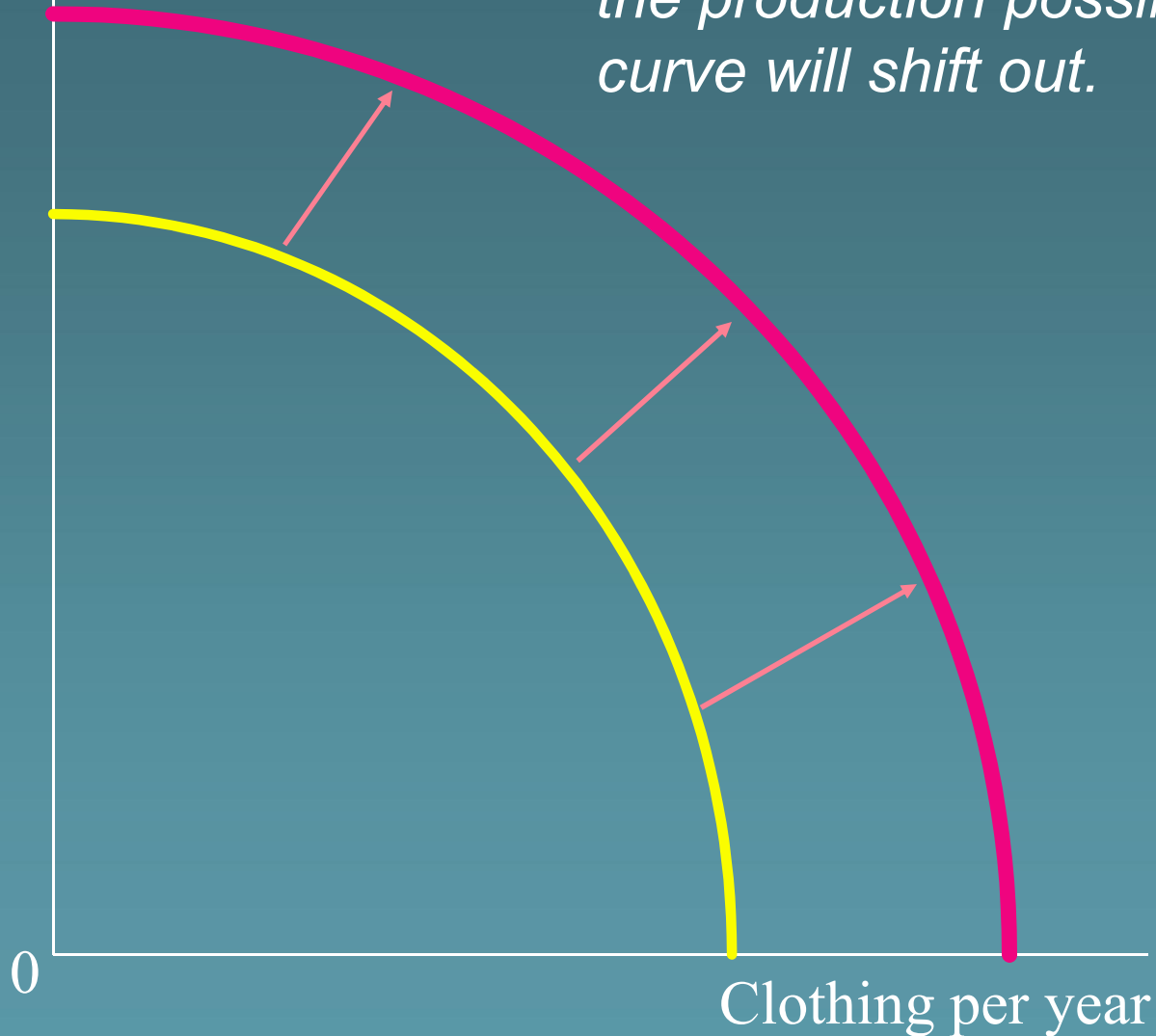
Economic growth is an increase in production possibilities.

The sources of economic growth are:

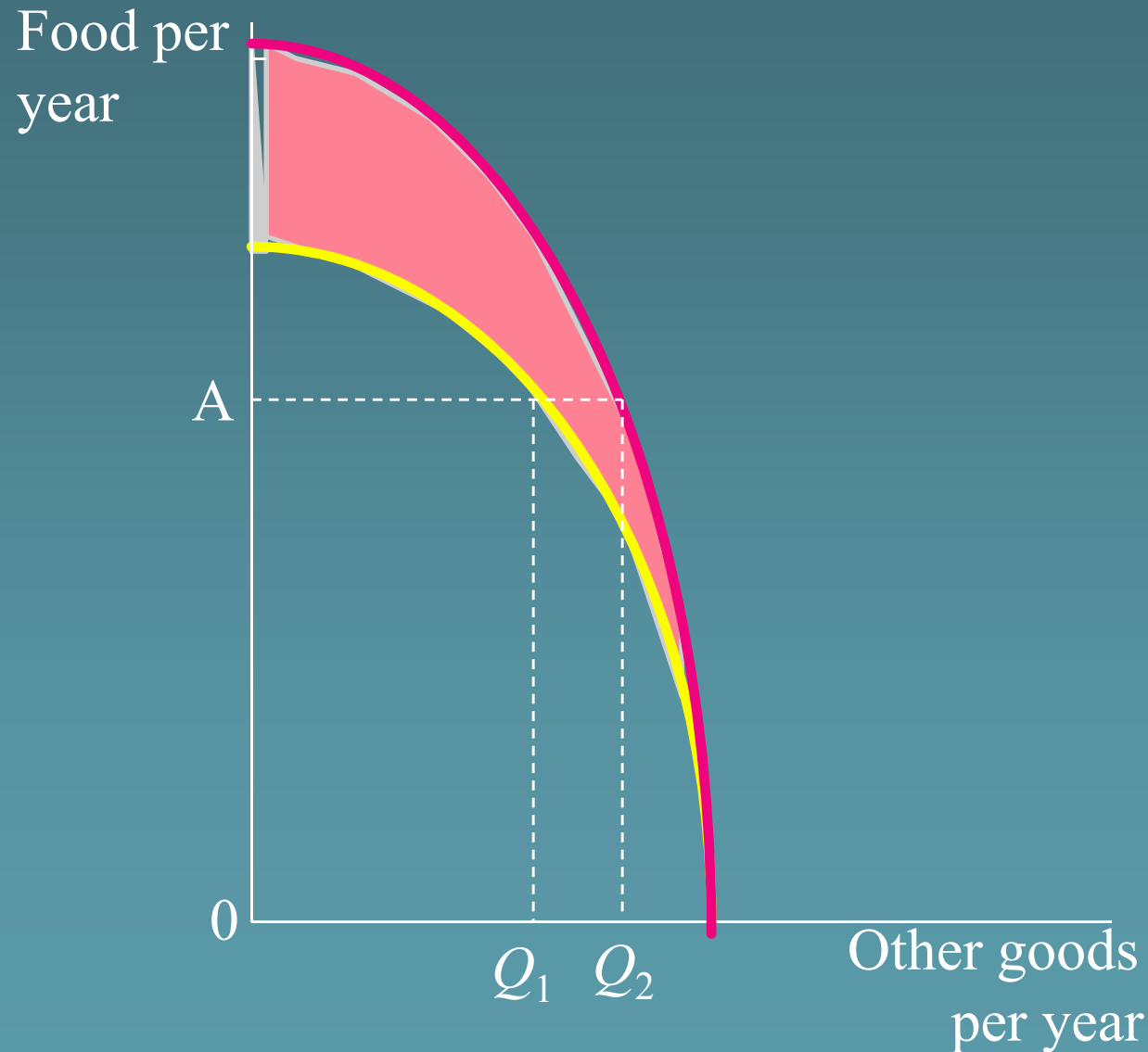
- 1. Resource growth*
- 2. Advances in technology*
- 3. Improvements in resource quality.*

Food per
year

*Economic growth means
the production possibilities
curve will shift out.*



Economic growth in one sector increases production possibilities in all sectors.



Investment in new capital, improved technology, and education are the major determinants of economic growth. Investing for the future generally requires sacrifice of current consumption. The greater a nation's rate of investment, the greater its rate of economic growth.

Box 7**Consumption, Investment, and Economic Growth**

The more investment in the current year, the greater the growth in production possibilities in future years. Nation A invested more than nation B and, as a result, nation A's production possibilities curve shifts out farther in the future than nation B's.

