

**Macroeconomics: Principles & Applications**

CHAPTER 2

*Scarcity, Choice, and Economic Systems*

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**Society's Production choices**

- **Society's choice**
  - How much of its resources to allocate
    - National defense
    - Civilian production
  - Simplifying assumption
    - One kind of military good (tanks)
    - One kind of civilian good (wheat)

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Table 1: Production of Tanks and Wheat

Choice	Tank Production (number per year)	Wheat Production (bushels per year)
A	0	1,000,000
B	1,000	950,000
C	2,000	850,000
D	3,000	700,000
E	4,000	400,000
F	5,000	0

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### Society's Production choices

- **Opportunity cost of producing 1,000 more tanks**
  - If currently producing choice B: 100,000 bushels
  - If currently producing choice D: 300,000 bushels

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### The Production Possibilities Frontier

- **Production possibilities frontier (PPF)**
  - A curve - all combinations of two goods that can be produced
  - With the resources and technology currently available
- **Society's choices**
  - Points inside or on PPF
- **Unattainable**
  - Points outside PPF

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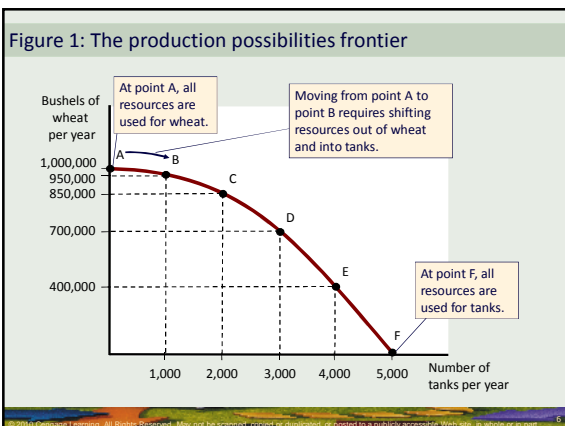
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### Increasing Opportunity Cost

- **Law of increasing opportunity cost**
  - The more of something we produce
    - The greater the opportunity cost of producing even more of it
  - PPF – concave shape
  - More steeper as we move rightward and downward
- **Reason for increasing opportunity cost**
  - Some resources are better suited to some purposes than others

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### The Search for a Free Lunch

- **“There’s no such thing as a free lunch”**
  - “free lunch” – use resources to provide it
  - Society pays an opportunity cost
    - By not producing other things with those resources

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### Operating Inside the PPF

- **Productively inefficient**
  - More of at least one good can be produced
    - Without sacrificing the production of any other good
  - Inside the PPF
  - Firms
    - Try to eliminate productive inefficiency

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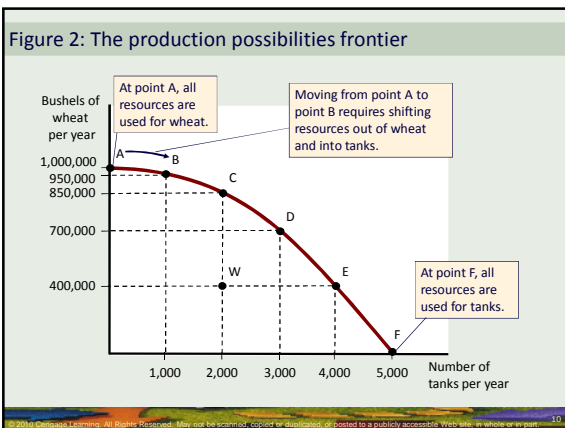
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**Operating Inside the PPF**

- **Productive inefficiency still remains**
  - Inefficiency creates benefits for individuals or groups who will resist changes in the status quo
  - Political obstacles
- **Recessions**
  - Inside PPF
  - Idle resources

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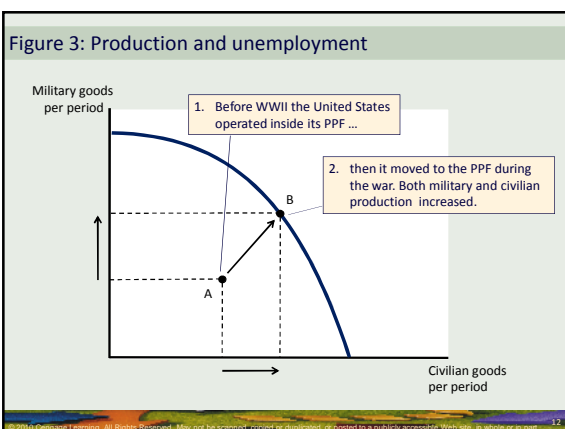
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### Economic Growth

- **Productive capacity – grows**
  - Increase in available resources
    - Physical and human capital
  - Technological change
    - Discovery of new ways to produce more from a given quantity of resources
  - Able to produce more goods

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### Economic Growth

- **Higher productive capacity**
  - Due to technological change or an increase in resources
    - Even when the direct impact is to increase production of just one type of good
    - Greater production of all types of goods

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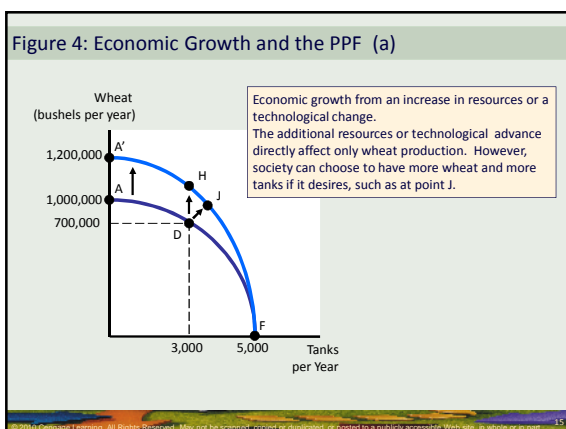
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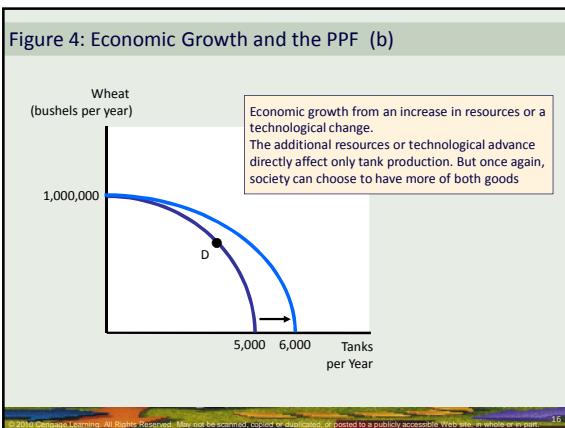
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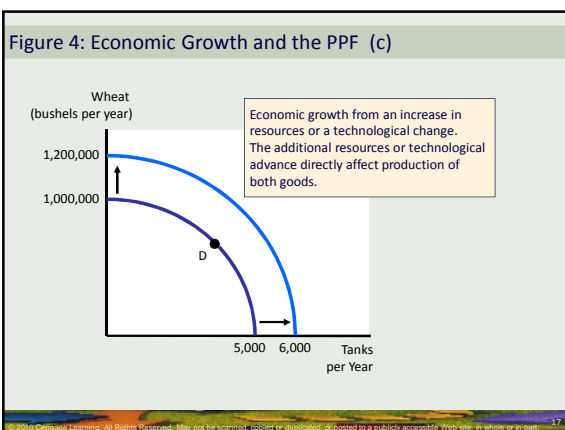
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**Economic Growth**

- **Consumption vs. growth**
  - Economic growth – produce more consumer and capital goods next year
    - Capital
    - Technology
  - Trade-off: less consumer goods this year

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### Economic Growth

- **Consumption vs. growth**
  - Capital - a good and a resource
  - More capital produced this year
    - More capital used in production next year
      - Economic growth
    - Trade-off: less consumer goods this year
  - New technologies – economic growth
    - Use resources for research & development (R&D)
    - Trade-off: less consumer goods this year

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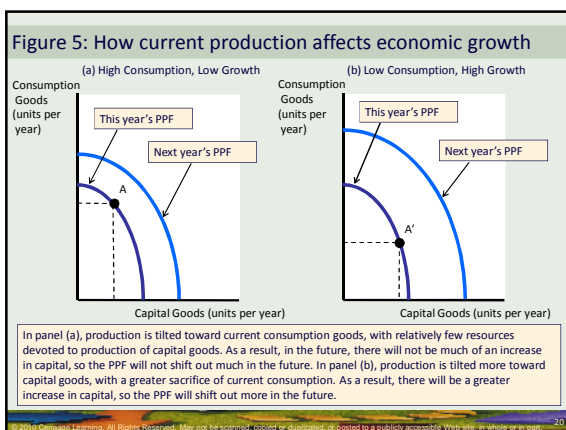
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### Economic Systems

- **Economic system**
  - The way our economy is organized
  - Features
    - Specialization
    - Exchange

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**Specialization and Exchange**

- **Specialization**
  - Method of production
  - Each person concentrates on a limited number of activities
- **Exchange**
  - Act of trading with others
  - To obtain what we desire

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**Specialization and Exchange**

- **Specialization and exchange**
  - Greater production
  - Higher living standards
- **Gains from specialization and exchange**
  - Development of expertise
  - Minimizing downtime
  - Comparative advantage

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**Comparative Advantage**

- **Absolute advantage**
  - Produce a good or service using fewer resources than other producers use
- **Comparative advantage**
  - Produce a good or service at a lower opportunity cost than other producers

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Table 2: Labor requirements for fish and berries

	Labor Required For:	
	1 Fish	1 Cup of Berries
Maryanne	1 hour	1 hour
Gilligan	3 hours	1½ hours

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### Comparative Advantage

- **Maryanne's opportunity cost of:**
  - One cup of berries = 1 fish
  - One fish = 1 cup of berries
- **Gilligan's opportunity cost of:**
  - One cup of berries = ½ fish
  - One fish = 2 cups of berries
- **Gains from comparative advantage**
  - Higher total production

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Table 3: A beneficial change in production

	Change in Fish Production	Change in Berry Production
Maryanne	+1	-1
Gilligan	-1	+2
Total Island	+0	+1

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### International Comparative Advantage

- **A nation**
  - Comparative advantage in producing a good
    - If it can produce it at a lower opportunity cost than some other nation
- **Greatest total production of every good or service**
  - When nations shift production toward their comparative advantage goods
  - And trade with each other

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Table 4: Labor Requirements for Soybeans and T-Shirts

	Labor Required For:	
	1 Bushel of Soybeans	1 T-Shirt
<b>United States</b>	1/4 hour	1/4 hour
<b>China</b>	5 hours	1 hour

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Table 5: A Beneficial Change in World Production

	Soybeans (Bushels)	T-Shirts
United States	+10	-20
China	-8	+40
<b>Total World Production</b>	<b>+2</b>	<b>+20</b>

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**Resource Allocation**

- **Three questions:**
  1. Which goods and services should be produced with society's resources?
  2. How should they be produced?
  3. Who should get them?

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**Three Methods of Resource Allocation**

- **Traditional economy**
  - Resource allocation - long-lived practices from the past
  - Stable and predictable
  - Little innovation and technological change
  - Stagnant economies

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**Three Methods of Resource Allocation**

- **Command or centrally planned economy**
  - Resource allocation - explicit instructions from a central authority
- **Market economy**
  - Resource allocation - individual decision making
  - Markets and prices

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**Resource Allocation**

- **Market**
  - A group of buyers and sellers with the potential to trade with each other
  - Global
  - Local
- **Price**
  - Amount of money that must be paid to a seller to obtain a good or service

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**Resource Allocation**

- **Resources - allocated by the market**
  - People must pay for their purchases
  - Forced to consider the opportunity cost to society of their individual actions
  - Markets - able to create a sustainable allocation of resources

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**Resource Allocation**

- **Resource allocation in the U.S.**
  - **Market capitalism**
    - Market - How resources are allocated
    - Capitalism - One way that resources are owned
- **Capitalism - economic system**
  - Most resources are owned privately
- **Socialism - economic system**
  - Most resources are owned by the state

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**Using the Theory**

**Are we saving lives efficiently?**

- **Productive inefficiency in saving lives**
  - Inside PPF
  - Allocation of lifesaving resources
  - Cost per year of life saved: \$150 - \$66,000,000

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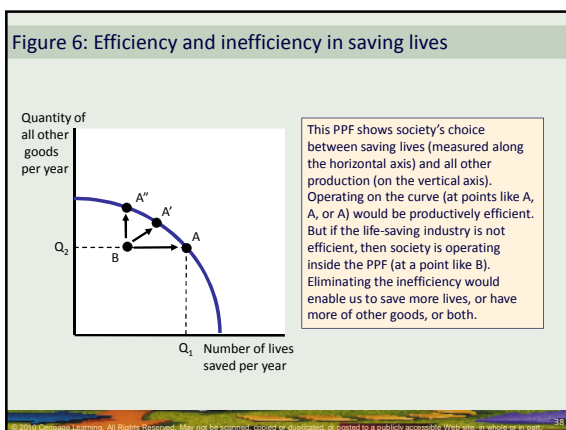
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**Table 6: The cost of saving lives**

Method	Cost per Life-Year Saved
Brief physician antismoking intervention: Single personal warning from physician to stop smoking	\$150
Sickle cell screening and treatment for African-American newborns	\$236
Replacing ambulances with helicopters for medical emergencies	\$2,454
Intensive physician antismoking intervention: Physician identification of smokers among their patients; three physician counseling sessions; two further sessions with smoking cessation specialists; and materials—nicotine patch or nicotine gum	\$2,587
Mammograms: Once every three years, for ages 50–64	\$2,700
Chlorination of water supply	\$4,000

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Table 6: The cost of saving lives

Method	Cost per Life-Year Saved
Next step after suspicious lung X-ray:	
PET Scan	\$3,742
Exploratory Surgery	\$4,895
Needle Biopsy	\$7,116
Vaccination of all infants against strep infections	\$80,000
Mammograms: Annually, for ages 50–64	\$108,401
Exercise electrocardiograms as screening test:	
For 40-year-old males	\$124,374
Heart transplants	\$157,821
Mammograms: Annually, for ages 40–49	\$186,635
Exercise electrocardiograms as screening test:	
For 40-year-old females	\$335,217
Seat belts on school buses	\$2,760,197
Asbestos ban in automatic transmissions	\$66,402,402

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