ECON MICRO 6th edition McEachern Solutions Manual

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CHAPTER 2

ECONOMIC TOOLS AND ECONOMIC SYSTEMS

In this chapter, you will find:
Learning Outcomes
Chapter Outline with PowerPoint Script
Chapter Summary
Teaching Points (as on Prep Card)

INTRODUCTION

This chapter emphasizes key ideas in economic analysis, such as opportunity cost, the production possibilities frontier, absolute and comparative advantage, the division of labor and the gains from specialization, and how economic systems answer the three economic questions of what, how, and for whom. All these ideas address the economic problem of how to allocate scarce resources among unlimited wants. The use of graphs was introduced in the Chapter 1 Appendix. In this chapter, graphs are integrated into the discussion.

LEARNING OUTCOMES

2-1 Describe the relationship between choice and opportunity cost

Resources are scarce, but human wants are unlimited. Because you cannot satisfy all your wants, you must choose, and whenever you choose, you must forgo some option. Choice involves an opportunity cost. The opportunity cost of the selected option is the value of the best alternative forgone.

2-2 Explain how comparative advantage, specialization, and exchange affect economic outcomes (output)

The law of comparative advantage says that the individual, firm, region, or country with the lowest opportunity cost of producing a particular good should specialize in that good. Specialization according to the law of comparative advantage promotes the most efficient use of resources. The specialization of labor increases efficiency by (a) taking advantage of individual preferences and natural abilities, (b) allowing each worker to develop expertise and experience at a particular task, (c) reducing the need to shift between different tasks, and (d) allowing for the introduction of more specialized machines and large-scale production techniques.

2-3 Outline how economies function as production systems

The production possibilities frontier, or PPF, shows the productive capabilities of an economy when all resources are used efficiently. The frontier's bowed-out shape reflects the law of increasing opportunity cost, which arises because some resources are not perfectly adaptable to the production of different goods. Over time, the frontier can shift in or out as a result of changes in the availability of resources, in technology, or in the rules of the game. The frontier demonstrates several economic concepts, including efficiency, scarcity, opportunity cost, the law of increasing opportunity cost, economic growth, and the need for choice.

2-4 Describe different economic systems and the decision-making rules that define them

All economic systems, regardless of their decision-making processes, must answer three basic questions: What is to be produced? How is it to be produced? And for whom is it to be produced? Economies answer the questions differently, depending on who owns the resources and how economic activity is coordinated. Economies can be directed by market forces, by the central plans of government, or, in most cases, by a mix of the two.

CHAPTER OUTLINE WITH POWERPOINT SCRIPT

CHOICE AND OPPORTUNITY COST

USE POWERPOINT SLIDE 3 FOR THE FOLLOWING SECTION

Opportunity Cost: The value of the best alternative forgone when an item or activity is chosen. Because of scarcity, whenever people make a choice, another opportunity is forgone.

USE POWERPOINT SLIDE 4 FOR THE FOLLOWING SECTION

Opportunity Cost Is Subjective: Only the individual making a choice can identify the most attractive alternative.

- Calculating opportunity cost requires time and information: learning about alternatives is costly and time consuming; some choices are based on limited or even wrong information.
- Time is the ultimate constraint: even the richest person in the world suffers from scarcity of time; each activity involves an opportunity cost.
- Opportunity cost varies with circumstances: opportunity cost depends on your alternatives.

USE POWERPOINT SLIDE 5 FOR THE FOLLOWING SECTION

Sunk Cost and Choice

Sunk cost is a cost that has already been incurred and cannot be recovered; it is irrelevant for future and present economic decisions.

Economic decision makers should ignore sunk costs and consider only those costs that are affected by the choice.

COMPARATIVE ADVANTAGE, SPECIALIZATION, AND EXCHANGE

USE POWERPOINT SLIDES 6–7 FOR THE FOLLOWING SECTION

The Law of Comparative Advantage: The individual, firm, region, or country with the *lower opportunity cost* of producing a particular output should specialize in producing that output.

Absolute advantage versus comparative advantage

- **Absolute advantage**: The ability to produce a product with fewer resources than other producers require.
- **Comparative advantage**: The ability to produce a product at a lower opportunity cost than other producers face. Resources are allocated most efficiently when production and trade conform to the law of comparative advantage.
- Absolute advantage focuses on who uses the fewest resources, while comparative advantage focuses on what else those resources could produce.

USE POWERPOINT SLIDE 8−9 FOR THE FOLLOWING SECTION

Specialization and Exchange

Barter: A system of exchange in which products are traded directly for other products

Money: A medium of exchange in economies with extensive specialization

USE POWERPOINT SLIDES 10–11 FOR THE FOLLOWING SECTION

Division of Labor and Gains from Specialization

Division of labor: Breaking down the production of a good into separate tasks

Specialization of labor: Focusing work effort on a particular product or a single task

- Takes advantage of individual preferences and natural abilities
- Allows workers to develop more experience at a task
- Reduces the need to shift between tasks
- Permits the introduction of labor-saving machinery
- May be tedious and injury prone because of repetitive motion

THE ECONOMY'S PRODUCTION POSSIBILITIES

USE POWERPOINT SLIDES 12–16 FOR THE FOLLOWING SECTION

Efficiency and the Production Possibilities Frontier

The production possibilities frontier (PPF) is a simple model designed to depict the production capabilities of an economy, given current resources. The PPF assumes the following:

- Output is limited to two broad classes of products: consumer goods and capital goods.
- Production takes place over a given time period.
- The economy's resources are fixed in quantity and quality over this period.
- The available technology does not change during the period.
- The "rules of the game" are fixed.

The PPF identifies possible combinations of the two types of goods that can be produced when all available resources are employed efficiently. Resources are employed efficiently when there is no change that could increase the production of one good without decreasing the production of the other good.

Efficient production: Getting the most from available resources, indicated by points *along* the production possibilities frontier

Inefficient and unattainable production

Inefficient production: Points *inside* the PPF

Unattainable production: Points outside the PPF

USE POWERPOINT SLIDE 17 FOR THE FOLLOWING SECTION

Shape of the Production Possibilities Frontier

The PPF derives its *bowed-out* (concave) shape from the law of increasing opportunity cost.

Opportunity cost increases as the economy produces more of one good and less of the other because resources in the economy are not all perfectly adaptable to the production of both types of goods.

If all resources were perfectly adaptable to alternative uses, the PPF would be a straight line, reflecting a constant opportunity cost along the PPF.

USE POWERPOINT SLIDES 18–21 FOR THE FOLLOWING SECTION

What Can Shift the Production Possibilities Frontier?

Economic growth: Reflected by an outward shift of the PPF

Changes in resource availability: People working longer hours, war

Increases in the capital stock: More capital goods produced during this period shifts the PPF outward the next period

Technological change and more know-how: Discoveries that employ resources more efficiently

Improvements in the rules of the game: Improvements in the formal and informal institutions that support the economy shift the PPF outward

USE POWERPOINT SLIDE 22 FOR THE FOLLOWING SECTION

What We Learn from the PPF

It illustrates the concepts of efficiency, scarcity, opportunity cost, economic growth, and the need for choice.

It does not tell us which combination to choose. How society goes about choosing depends on the nature of the economic system.

USE POWERPOINT SLIDES 23–29 FOR THE FOLLOWING SECTION
ECONOMIC SYSTEMS
Three questions every economic system must answer:
- What goods and services are to be produced?
- How are goods and services to be produced?
- For whom are goods and services to be produced?

Pure Capitalism: Individual decision-making through markets includes:
- Private ownership of all resources.
- Market prices generated in free markets guide resources to their most productive use.
- Goods and services are channeled to consumers who value them the most.
- Adam Smith: market forces allocate resources as if by an "invisible hand"—an unseen force that harnesses the pursuit of self-interest to direct resources where they earn the greatest reward.
- **Pure Market System: Flaws**:
- No central authority protects property rights, enforces contracts, or ensures that rules of the game are followed.
- People with no resources to sell could starve.
- Some producers may try to monopolize markets by eliminating the competition.
- The production or consumption of some goods involves damaging byproducts (i.e., pollution).
- Private firms have no incentive to produce public goods.
- Market economies experience economic fluctuations
- Because of these limitations, *government* has been given some role in most market economies.

Pure Command System: Resources are directed and production is coordinated not by market forces but by the "command," or central plan, of government.
- In theory, property is owned communally; central plans spell out answers to what, for whom, and how much; and individual choices are incorporated into central plans (communism).
- **Pure Command System: Flaws**:
- Running an economy is so complicated and requires so much information that some resources are used inefficiently.
- Because nobody in particular owns resources, each person has less incentive to employ them in their highest-valued use, so some resources are wasted.
- Central plans may be more reflective of the preferences of central planners than the preferences of society.
- Because government is responsible for all production, the variety of products tends to be more limited than in a capitalist economy.
- Each individual has less personal freedom in making economic choices.
- Because profit has no place in a command economy, people have less incentive to invent new and better products or find more efficient ways to make existing products

USE POWERPOINT SLIDE 30–31 FOR THE FOLLOWING SECTION
Mixed and Transitional Economies
No country exemplifies either type of economic system in its pure form.
The United States represents a mixed system, with government directly accounting for about one-third of all economic activity. In addition, government regulates the private sector in a variety of ways (e.g., antitrust laws, workplace safety, environmental quality, and zoning activities).

Economies Based on Custom or Religion: Molded largely by custom or religion—for example, the caste system in India or charging interest under Islamic law.

CHAPTER SUMMARY

Resources are scarce, but human wants are unlimited. Because you cannot satisfy all your wants, you must choose, and whenever you choose, you must forgo some option. Choice involves an opportunity cost. The opportunity cost of the selected option is the value of the best alternative forgone.

The law of comparative advantage says that the individual, firm, region, or country with the lowest opportunity cost of producing a particular good should specialize in that good. Specialization according to the law of comparative advantage promotes the most efficient use of resources.

The specialization of labor increases efficiency by (a) taking advantage of individual preferences and natural abilities, (b) allowing each worker to develop expertise and experience at a particular task, (c) reducing the need to shift between different tasks, and (d) allowing for the introduction of more specialized machines and large-scale production techniques.

The production possibilities frontier, or PPF, shows the productive capabilities of an economy when all resources are used efficiently. The frontier's bowed-out shape reflects the law of increasing opportunity cost, which arises because some resources are not perfectly adaptable to the production of different goods. Over time, the frontier can shift in or out as a result of changes in the availability of resources, in technology, or in the rules of the game. The frontier demonstrates several economic concepts, including efficiency, scarcity, opportunity cost, the law of increasing opportunity cost, economic growth, and the need for choice.

All economic systems, regardless of their decision-making processes, must answer three basic questions: What is to be produced? How is it to be produced? And for whom is it to be produced? Economies answer the questions differently, depending on who owns the resources and how economic activity is coordinated. Economies can be directed by market forces, by the central plans of government, or, in most cases, by a mix of the two.

TEACHING POINTS

1. This chapter contains several fundamental concepts that should be fully discussed because they are used throughout the text to discuss economic choice in a variety of settings. When discussing opportunity cost and choice, be sure to distinguish between those costs that are associated with marginal decision making and those that are not (i.e., sunk costs). Also, many students will not immediately recognize that non-monetary costs are components of opportunity costs so it helps to emphasize this point.

2. Comparative advantage is a second important concept emphasized in this chapter. For additional examples of comparative advantage, consider the classic example in which an attorney can type and file faster and more accurately than a secretary. Because of comparative advantage, it will usually be beneficial to hire a secretary rather than to do the typing and filing since the opportunity cost is lower. Another example would be for Hawaii to specialize in pineapple growing and then trade with Idaho for potatoes. This chapter makes the point that opportunity cost is a relative concept, based on relative rather than absolute resource requirements in the production of goods. Because comparative advantage implies the specialization of resource use, trade becomes important in allocating goods to consumers. Students often note that self-reliance is an admirable concept. The discussion of comparative advantage shows that specialization and exchange lead to a more efficient allocation of resources.

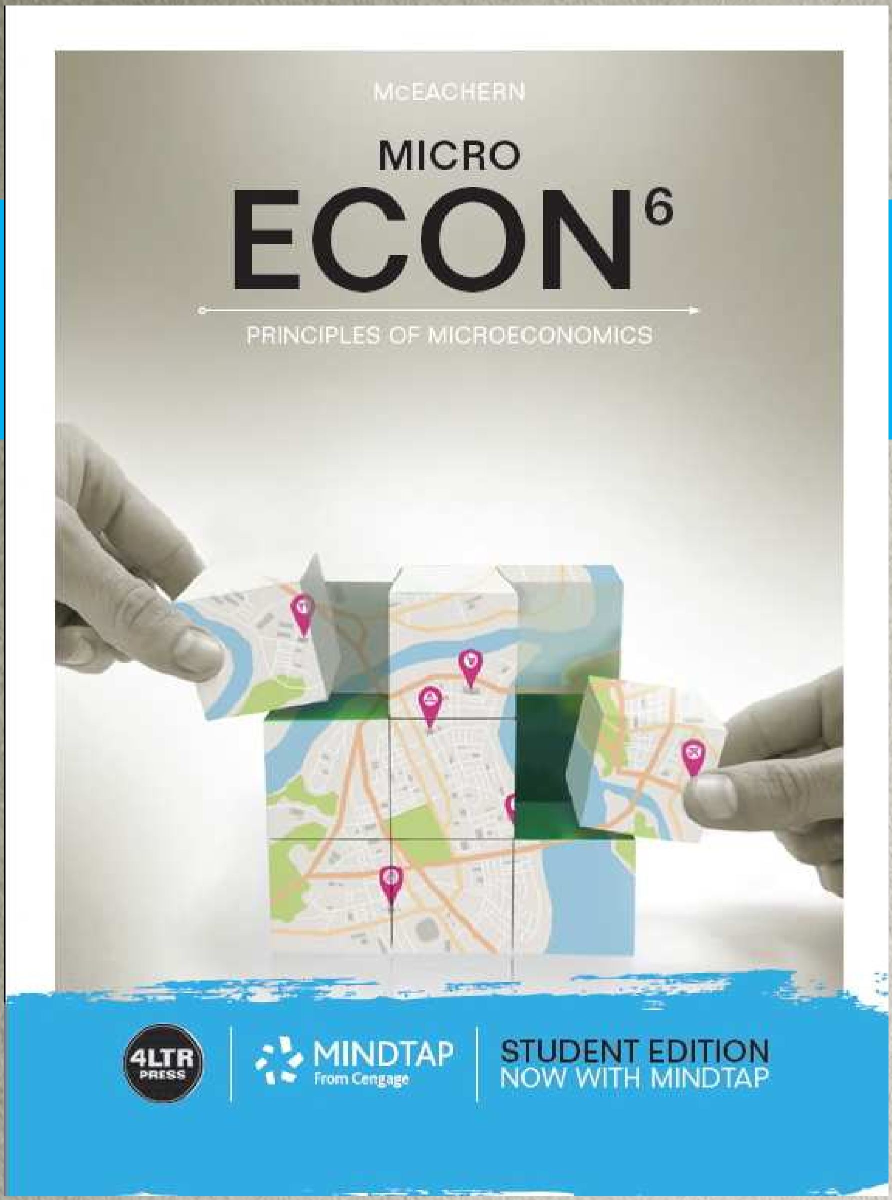
3. When drawing the production possibilities frontier, partition the horizontal axis into equal segments and then show the ever-increasing amounts of the alternative good that must be sacrificed to obtain more of the good in question. You thereby illustrate the law of increasing opportunity costs. Students often confuse increasing total and increasing marginal opportunity costs. You should emphasize, through your construction, that it is incremental costs that are increasing. Draw your curve large with plenty of bow in it. Numerical examples are helpful to some students.

4. Sometimes people claim that the PPF is bowed out because of the law of diminishing returns. Diminishing returns, of course, assumes an increase in one type of resource, holding other resources constant. This is not the case along the PPF, since all resources tend to be reallocated between goods with movement along the PPF. You could incorporate the law of diminishing returns into your discussion by fixing capital between the sectors and then shifting only labor resources. The text's approach, however, is to assume that resources are not homogeneous; some are specific to the production of a particular good. The result is increasing opportunity costs and a bowed-out PPF.

5. Once the PPF is understood in terms of its construction and shape, it is important to emphasize the concepts that it illustrates. Scarcity is reflected by the fact that some output combinations are not feasible. The infinite output combinations that are feasible illustrate choice. Efficiency is illustrated when production occurs along the PPF, and the shape of the PPF illustrates the law of increasing opportunity costs. Furthermore, if resources are different, then the required specialization of resource usage implies that some form of trading occurs in order for each resource owner to consume all (both) goods.

6. A discussion of shifts in the production possibilities frontier leads naturally to a consideration of the sources of economic growth. Technological advance shifts the PPF. Such advances take time and require society to save, just as the accumulation of physical capital does. Emphasize that the PPF need not always shift out in a balanced way. Technological advance is often specific to an industry. Improvements to the rules of the game and in the education and health of the population may also lead to an outward shift in the PPF.

7. This chapter closes by considering how different economic systems answer the three economic questions. You may wish to discuss how numerous political systems have shifted toward more market-based economies over the past century to emphasize the capitalist approach. The chapter contains a fairly short reference to Adam Smith and his notion of the "invisible hand." You may want to discuss this important concept in more detail.



2

Economic Tools and Economic Systems

LEARNING OUTCOMES

1. Describe the relationship between choice and opportunity cost
2. Explain how comparative advantage, specialization, and exchange affect output
3. Outline how economies function as production systems
4. Describe different economic systems and the decision-making rules that define them

Choice and Opportunity Cost

- Scarcity involves making choices
- Opportunity cost
  - Value of the best alternative forgone when an item or activity is chosen
  - Also known as opportunity lost
  - Two aspects
    - Monetary aspect
    - Non-monetary aspect

Opportunity Cost

- Is subjective
  - Refers to value of "the road not taken"
- Calculating opportunity cost
  - Requires time and information
- Time is the ultimate constraint
- Opportunity cost
  - Varies with circumstance
  - Depends on the alternative

Sunk Cost and Choice

- Sunk cost
  - Has already been incurred
  - Cannot be recovered
  - Is irrelevant for present and future economic decisions
- For economic decision-making
  - Relevant—costs affected by the choice
  - Irrelevant—sunk costs

Law of Comparative Advantage

- Individual, firm, region, or country with the lowest opportunity cost of producing a particular good should specialize in that good
- Specialization and exchange
  - Make everyone better off

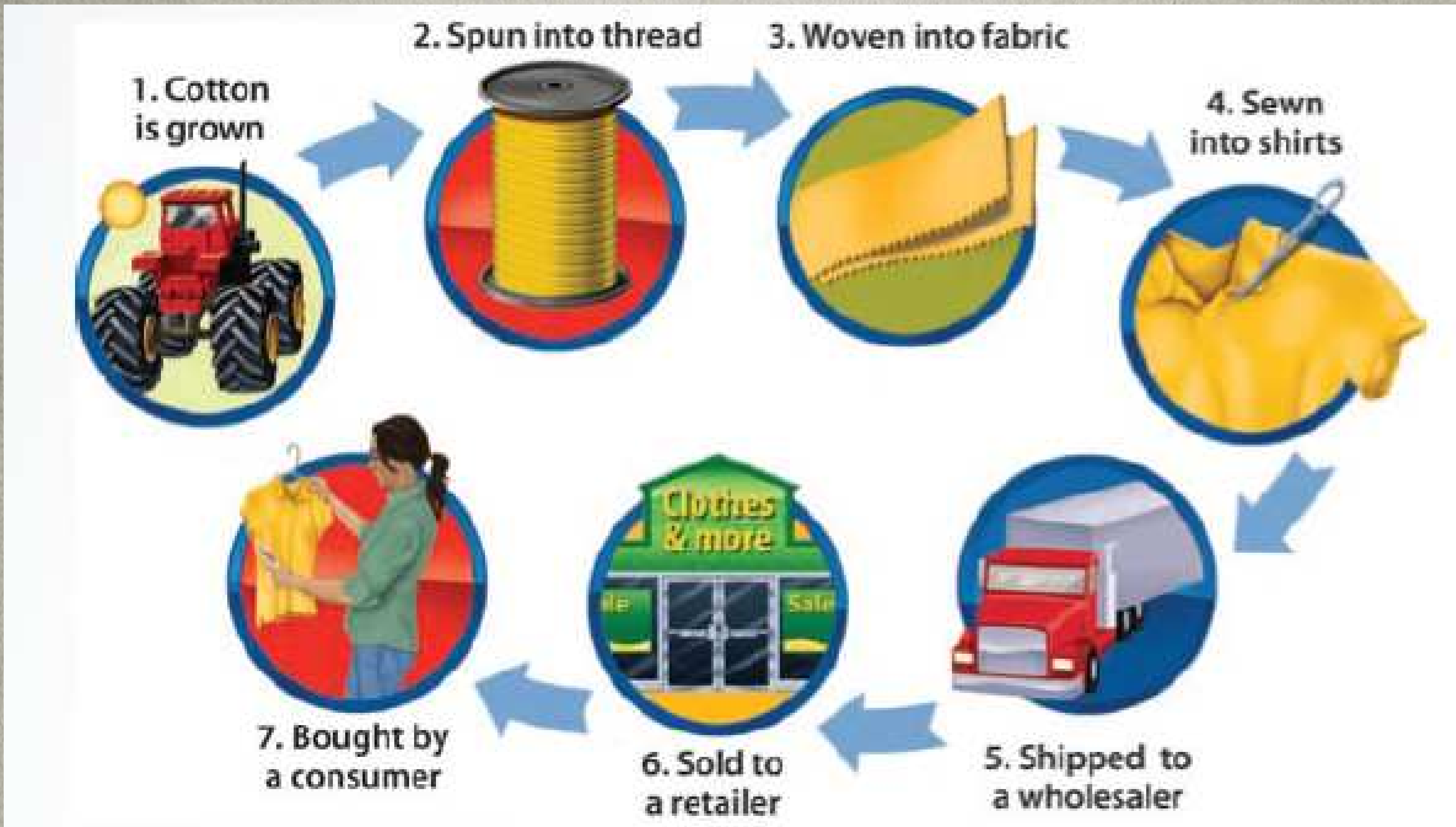
Law of Comparative Advantage (continued)

- Absolute advantage
  - Ability to make something using fewer resources than other producers
- Comparative advantage
  - Ability to make something at a lower opportunity cost than other producers face

Specialization and Exchange

- **Barter**
  - Direct exchange of one product for another without using money
  - Possible in simple economies
    - Few goods, little specialization
- Money facilitates exchange
- Degree of specialization
  - Limited by the extent of the market

Exhibit 1 Specialization in the Production of Cotton Shirts



Division of Labor

- Breaking down the production of a good into separate tasks
- Benefit
  - Increased productivity
- Downside
  - Repetitive
  - Tedious
  - Routine tasks – robots

Division of Labor (continued)

- **Specialization of labor**
  - Takes advantage of individual preferences and natural abilities
  - Allows workers to develop more experience at a particular task
  - Reduces the need to shift between different tasks
  - Permits the introduction of labor-saving machinery

Efficiency and the PPF

- **Production Possibilities Frontier (PPF)**
  - Economy's production combinations
  - Assumptions
    - Output limited to consumer and capital goods
    - Production limited to a given period
    - Fixed resources (quantity, quality)
    - Fixed technology
    - Fixed "rules of the game"

Efficiency and the PPF (continued 1)

- PPF
  - Curve showing alternative combinations of goods that can be produced when available resources are used efficiently
  - Boundary line between inefficient and unattainable combinations

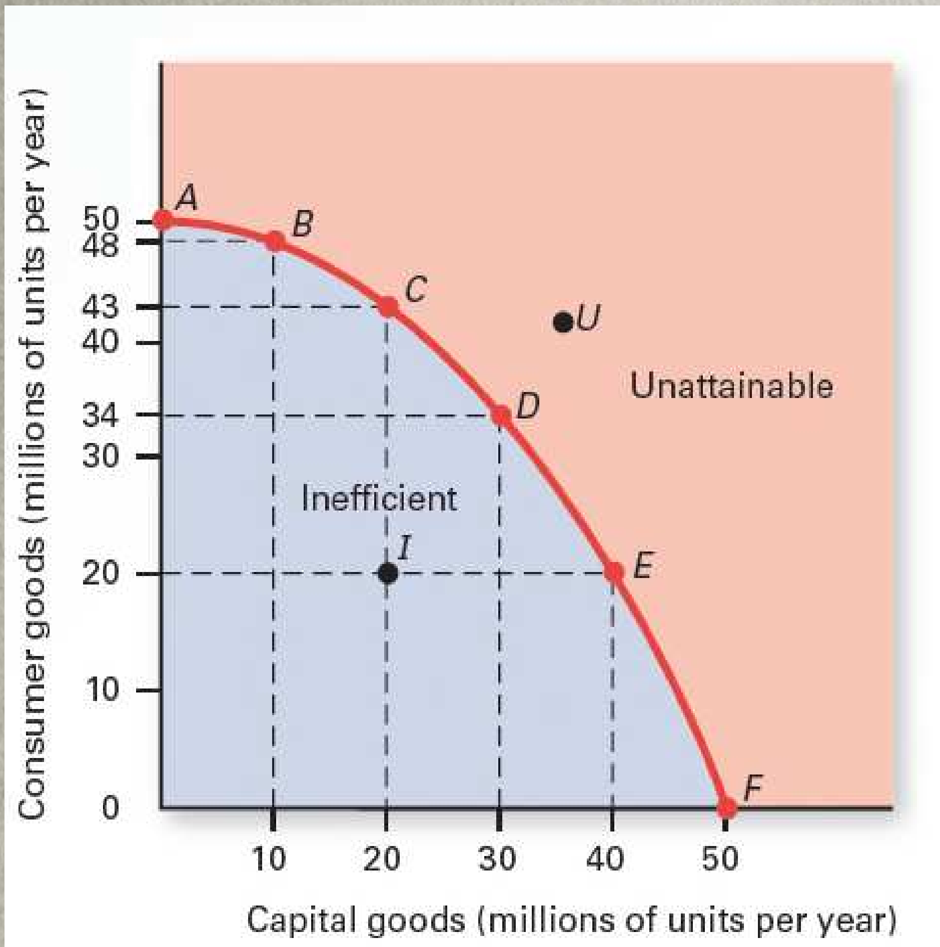
Efficiency and the PPF (continued 2)

- **Efficiency**
  - When there is no way resources can be reallocated to increase the production of one good without decreasing the production of another
  - Getting the most from available resources
- Efficient combinations: along the PPF

Efficiency and the PPF (continued 3)

- Inefficient combinations
  - Output combinations inside the PPF
- Unattainable combinations
  - Output combinations outside the PPF

Exhibit 2 The Economy's Production Possibilities Frontier



If the economy uses its available resources and technology efficiently to produce consumer goods and capital goods, that economy is on the production possibilities frontier, *AF*. The PPF is bowed out to reflect the law of increasing opportunity cost; the economy must sacrifice more and more units of consumer goods to produce an additional increment of capital goods. Note that more consumer goods must be given up in moving from *E* to *F* than in moving from *A* to *B*, although in each case the gain in capital goods is 10 million units. Points inside the PPF, such as *I*, represent inefficient use of resources. Points outside the PPF, such as *U*, represent unattainable combinations.

The Shape of the PPF

- Moving down along a PPF
  - Involves giving up some consumer goods to get more capital goods
  - The slope of the PPF
  - Based on the **law of increasing opportunity cost**
    - To produce more of one good, a successively larger amount of the other good must be sacrificed

What Can Shift the PPF?

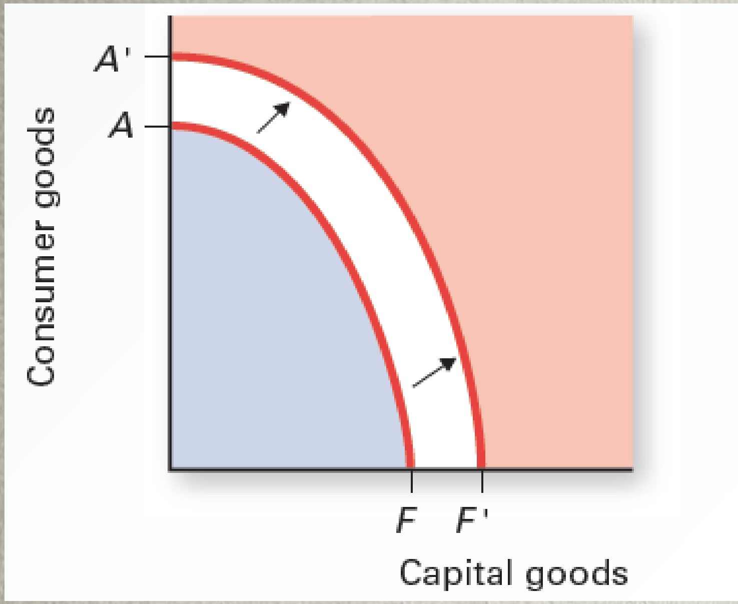
- **Economic growth**
  - Refers to an increase in the economy's ability to produce goods and services
  - Causes an outward shift of the economy's PPF
- Economic growth can occur due to
  - Increases in capital stock
  - Technological change

What Can Shift the PPF? (continued)

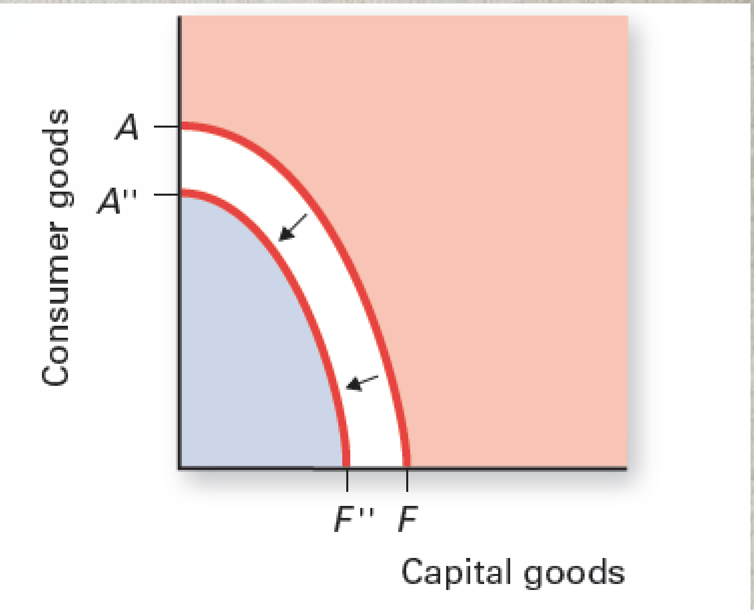
- Increases in resource availability
  - Size, health of labor force
  - Skills of labor force
  - Availability of other resources
- Improvements in the rules of the game
  - Formal and informal institutions

Exhibit 3 (a), (b) Shifts of the Economy's Production Possibilities Frontier

(a) Increase in available resources, technology breakthrough, or improvement in the rules of the game



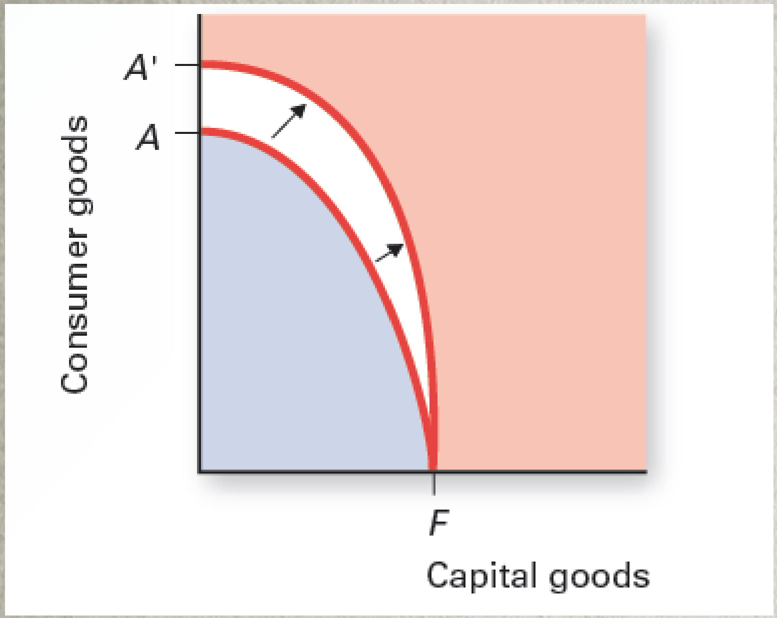
(b) Decrease in available resources or greater uncertainty in the rules of the game



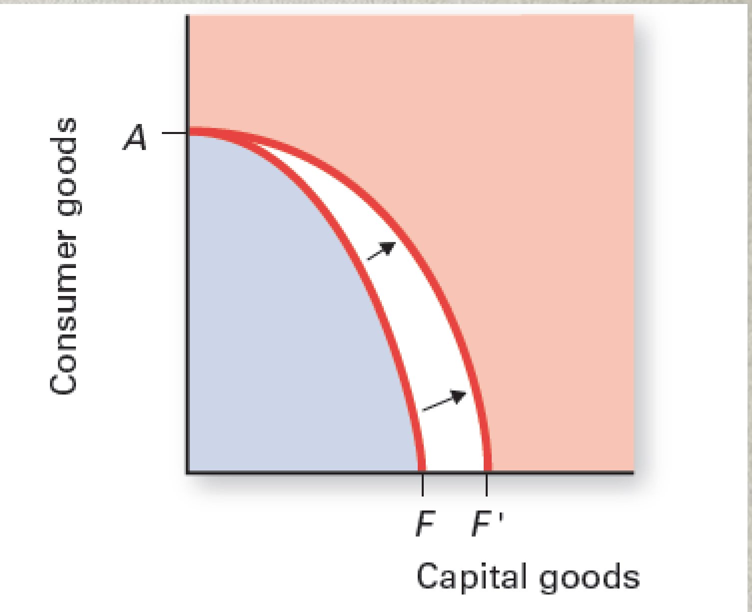
When the resources available to an economy change, the PPF shifts. If more resources become available, if technology and the know-how improve, or if the rules of the game improve, the PPF shifts outward, as in panel (a), indicating that more output can be produced. A decrease in available resources causes the PPF to shift inward, as in panel (b).

Exhibit 3 (c), (d) Shifts of the Economy's Production Possibilities Frontier

(c) Change in resources, technology, or rules that benefits consumer goods



(d) Change in resources, technology, or rules that benefits capital goods



Panel (c) shows a change affecting consumer goods production. More consumer goods can now be produced at any given level of capital goods. Panel (d) shows a change affecting capital goods production.

What We Learn from the PPF?

- Efficiency
- Scarcity
- Opportunity cost
  - Law of increasing opportunity cost
- Economic growth
- Choice
  - Made based on costs and benefits

Economic Systems

- Three questions
  - What?
  - How?
  - For whom?
- **Economic system**
  - Set of mechanisms and institutions that resolve the what, how, and for whom questions

Economic Systems (continued)

- Categorized on the basis of:
  - Ownership of resources
  - Allocation of resources
  - Incentives
- Range from:
  - **Pure capitalism** to **Pure command system**

Pure Capitalism

- **Private property rights**
  - Owner's right to use, rent, or sell resources or property
- Unregulated markets answer the three questions
  - Resources—most productive use
  - Goods and services—most valued
  - Voluntary buying and selling

Pure Capitalism (continued)

- Supported by Adam Smith (1723–1790)
  - Market forces allocate resources as if by an "invisible hand"
    - Unseen force that harnesses the pursuit of self-interest to direct resources where they earn the greatest reward
  - Although each individual pursues his or her self-interest, the "invisible hand" promotes general welfare

Pure Capitalism: Flaws

- No central authority
- People with no resources could starve
- Monopolization of some markets
- Side effects that can harm people not involved in transactions
- No public goods
- Economic fluctuations

Pure Command System

- Public or communal ownership of property
- Government planners
  - Draft central plans
  - Direct resources
  - Coordinate production
  - Answer the three economic questions
- Communism

Pure Command System: Flaws

- Resources
  - Used inefficiently
  - Wasted (no incentives)
- Governed by preferences of planners
- Limited variety of products
- Less freedom of economic choice
- Less incentive to develop better products as nobody can earn profit

Mixed and Transitional Economies

- Government in a **mixed system**
  - Accounts for economic activity
  - Regulates the private sector
- Increasing role of government
  - In capitalist economies
- Increasing role of markets
  - In command economies

Economies Based on Custom or Religion

- Family relations play a significant role
  - In organizing economic activity
  - In coordinating economic activity
- Customs
  - Limit business growth
  - Affect pattern of consumption and choice of occupation

KEY TERMS

- Opportunity cost
- Sunk cost
- Law of comparative advantage
- Absolute advantage
- Comparative advantage
- Barter
- Division of labor
- Specialization of labor
- Production possibilities frontier
- Efficiency
- Law of increasing opportunity cost
- Economic growth
- Economic system
- Pure capitalism
- Private property rights
- Pure command system
- Mixed system

SUMMARY

- Resources are scarce in relation to wants; therefore, whenever a choice is made and an opportunity is passed, some opportunity cost is incurred
- Specialization and exchange make everyone better off
- Economies use a set of mechanisms and institutions to resolve the what, how, and for whom to produce questions
- The different types of economic systems include pure capitalist, pure command, mixed, and economies based on custom and religion