Solutions for Essentials of Economics 11th Edition by Schiller

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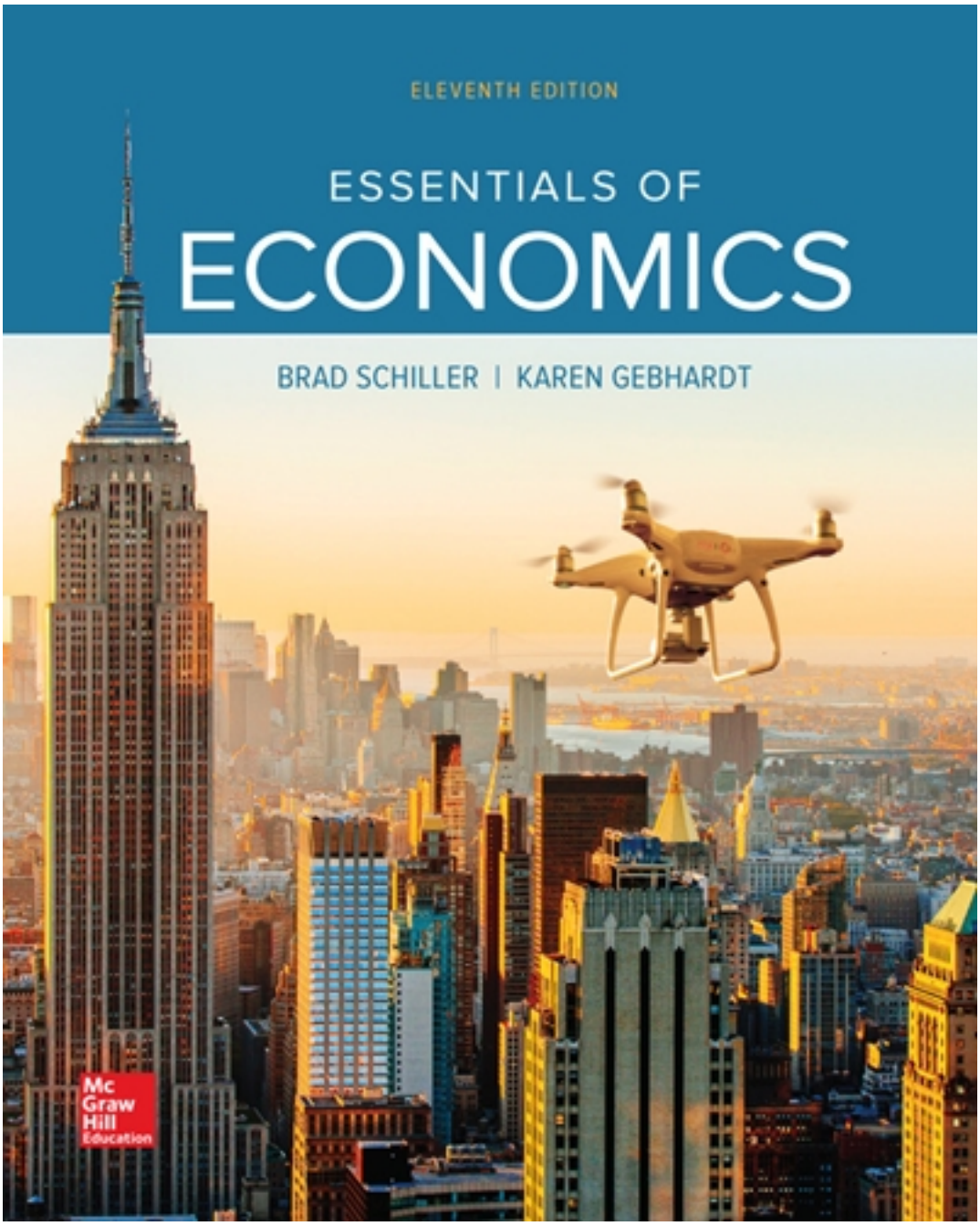


Solutions

ANSWERS TO QUESTIONS FOR DISCUSSION AND PROBLEMS

QUESTIONS FOR DISCUSSION

1. As rich as America is, how can our resources possibly be "scarce?" (**LO 1-1)**

   Answer: Many believe that America has become rich because of the abundance of our natural resources. Others believe our democratic political system or our market-driven economic system play significant roles in our relative financial success. Regardless, as rich as America is, we still want more. The concept of scarcity, in the case of America, is the lack of enough resources to satisfy all American consumer desires. Therefore, resources are scarce in the U.S. because the desire for these resources is greater than the amount we possess.

2. What opportunity costs did you incur in reading this chapter? **(LO 1-2)**

   Answer: There are many other things you could have done with your time instead of reading this chapter. The most desired activity you gave up is the opportunity cost.

3. How would you answer the question in the News Wire "Future Living Standards" on page 5? Why? **(LO 1-3)**

   Answer: There was a spike of anxiety in 2008-09 regarding the ability of the U.S. economy to crank out more goods continuously. Today many Americans still worry about the resiliency of our economic system and our many resource limitations. The general definition of economics – the study of how best to allocate scarce resources among competing uses – allows for the potential of brilliant minds to help the economy continue to grow. Additional resources, new technologies, insightful entrepreneurial strategies, and great minds working on economic development provide tremendous hope for future growth in our economy and the associated increase in our standard of living.

4. How can China's army be twice as large a North Korea's when China spends only 2.1 percent of its output on the military and North Korea spends 19 percent? **(LO 1-1)**

   Answer: China has more resources than North Korea and has also chosen to produce at a different combination along its production possibilities curve. China's larger population, larger land area, natural resources, education system (human capital) focused on technology, and the structure of its economy are such that it focuses more of its production on capital goods, as well as on consumer goods and services. These, in turn, enable it to maintain a large army while maintaining a focus on economic growth.

5. In a purely private market economy, how is the FOR WHOM question answered? Is that optimal? **(LO 1-3)**

   Answer: FOR WHOM? is one of the three basic economics questions. The other two questions determine how large of an economic pie to bake (WHAT?) and how we will bake it (HOW?). This FOR WHOM question deals with how to slice the pie. Should some get larger or smaller slices than others? The focus is on how an economy's output is distributed across members of society.
   In a purely private market economy, those who are willing and able to purchase a slice of pie will receive the slice. Markets are efficient; however, neither markets nor governments always have the right answers. There are certainly times (market failure) when the market generates suboptimal economic outcomes.

6. Why doesn't North Korea reduce its military and put more resources into food production (News Wire "Opportunity Cost", page 10)? What is the optimal mix of "guns" and "butter" for a nation? **(LO 1-3)**

   Answer: North Korea doesn't reduce its military and put more resources into food production because the North Korean government apparently believes that a large military establishment is essential to their well-being and security. The optimal mix of "guns" and "butter" depends on values and, therefore, the answer to this question will depend on the values of the individual or in this case, the government answering it.

7. If taxes on the rich were raised to provide more housing for the poor, how would the willingness to work be affected? What would happen to total output? **(LO 1-3)**

   Answer: Given the standard assumptions about market participant reactions, we would expect that those being taxed more would reconsider their choices between work and leisure. Since their reward for working would now be less (after taxes) they could be expected to work less. Poor people, too, might work less if they get free or subsidized housing. Changes in the work incentives facing both the rich and the poor would lead to less total output.

8. What kind of knowledge must central planners possess to manage an economy efficiently? **(LO 1-4)**

   Answer: A central planner will make all the decisions for an economy including what goods are produced, at what prices they are sold, and who gets to have them. For example, a central planner places workers at a bread factory, tells them how much bread to bake, and specifies who is allowed to eat this bread. The WHAT, HOW, and FOR WHOM outcomes are all directed by the central government (planner).

A central planner would need to be omniscient in order to manage an economy efficiently. He/she would need to know the desires of consumers, consumer ability to pay, productivity of inputs (such as capital and labor), and technological capabilities. It is simply unreasonable to believe that a central planner could ever have such vast and comprehensive knowledge.

9. **POLICY PERSPECTIVES** Why can't we produce at point X_2 in Figure 1.6? Will we ever get there? **(LO 1-5)**

   Answer: X_2 is beyond the resources available for production because it is outside of the curve. The only way to get there would be to increase the resources available.

10. **POLICY PERSPECTIVES** What was President Obama's goal for the Affordable Care Act? Why didn't President Trump like that policy? **(LO 1-2)**

    Answer: President Obama's goal was to expand the health care industry and to increase access to healthcare for Americans who didn't have health insurance and for those with lower incomes and pre-existing illnesses. However, producing more healthcare means that other goods or services would need to be given up – there is an opportunity cost involved. The Affordable Care Act imposed taxes and fees that pushed consumers into purchasing health insurance (healthcare and related services) and left them with less income for other goods and services. This increased healthcare and health insurance at the cost of other products and services that consumers would have paid for instead. President Trump disagreed and wanted to consumers to have more freedom to spend their money on goods and services of their choice, whether on healthcare-related goods and services or on other products – calling into question the opportunity cost of encouraging the consumption of more healthcare. President Trump sought to eliminate the taxes, fees, and related mandates.

PROBLEMS

1) Iceland has no military. (*a*) So, at what point in Figure 1.1 is Iceland producing? (*b*) If Iceland decided to produce the quantity *OE* of military goods, how much consumer output would it have to give up? **(LO 1-2)**

   Answer:

   (a) If the country currently does not have a military, then the only output will be consumer goods (point A).

   (b) If the country is now producing 0E military goods (equal to the combination of D consumer goods and E military goods), the country would reduce the production of consumption good by the amount AD.

2) What percentage of total U.S. output consisted of military goods (a) In 1944? (Figure 1.2) (b) In 2018? (Figure 1.2) **(LO 1-2)**

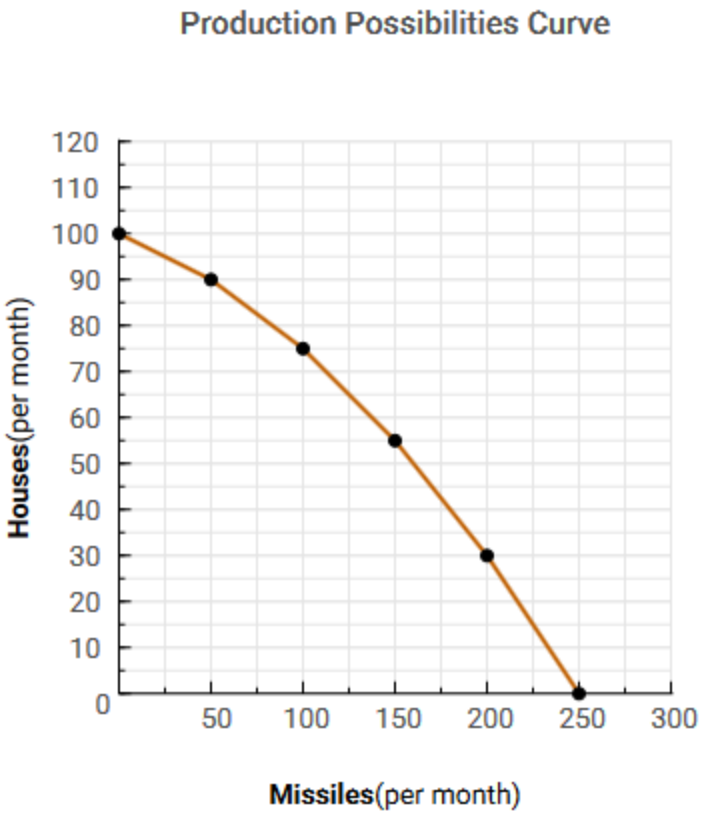
Answer: According to the graph, the percentage of total U.S. output consisting of military goods was approximately:

(a) 39.5 percent in 1944

(b) 3.1 percent in 2018.

3) Draw a production possibilities curve based on Table 1.1, labeling combinations *A–F.* What is the opportunity cost of increasing missile production (a) from 50 to 100 (b) from 100 to 150? **(LO 1-2)**

Answer: A production possibilities curve describes the various combinations of final goods and services that could be produced in a given time period with available resources and technology. Point A, for example, is an output combination of 0 missiles and 100 houses, plotted on the vertical axis (0,100). Point F, on the other hand, is 250 missiles and 0 houses, plotted on the horizontal axis (250,0).



(a) The opportunity cost of increasing the production of missiles is the loss of production of houses. For example, increasing missile production from 50 to 100 results in a loss of 15 houses (= 90 – 75).

(b) Increasing missile production from 100 to 150 results in a loss of 20 houses (= 75 – 55), and so on.

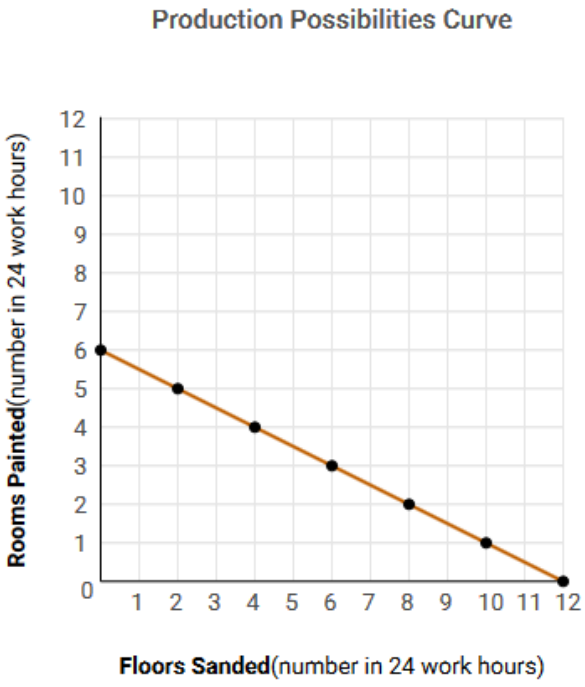
4) Assume that it takes four hours of labor time to paint a room and two hours to sand a floor. If all 24 hours were spent painting, (a) How many rooms could be painted by one worker? (b) If a decision were made to sand two floors, how many painted rooms would have to be given up? (c) Illustrate with a production possibilities curve. **(LO 1-1)**

Answer:

(a) If a worker spends 24 hours painting rooms and a worker can paint one room in four hours, then this worker can paint 6 rooms (= 24 hours/4 hours per room).

(b) Because it takes two hours to sand one floor, it would take a worker four hours to sand two floors. Therefore, a worker must give up painting one room, which also takes four hours to complete.

(c) The various production possibilities are plotted with "Rooms Painted" on the vertical axis and "Floors Sanded" on the horizontal axis. Thus, if a worker spends all of his or her time painting rooms, 6 rooms can be painted (0 floors sanded and 6 rooms painted). On the other hand, if a worker spends all of his or her time sanding floors, 12 floors can be sanded (12 floors sanded and 0 rooms painted). The alternative production possibilities points in between those two extremes are (2 floors sanded and 5 rooms painted), (4 floors sanded and 4 rooms painted), (6 floors sanded and 3 rooms painted), (8 floors sanded and 2 rooms painted), and (10 floors sanded and 1 room painted).



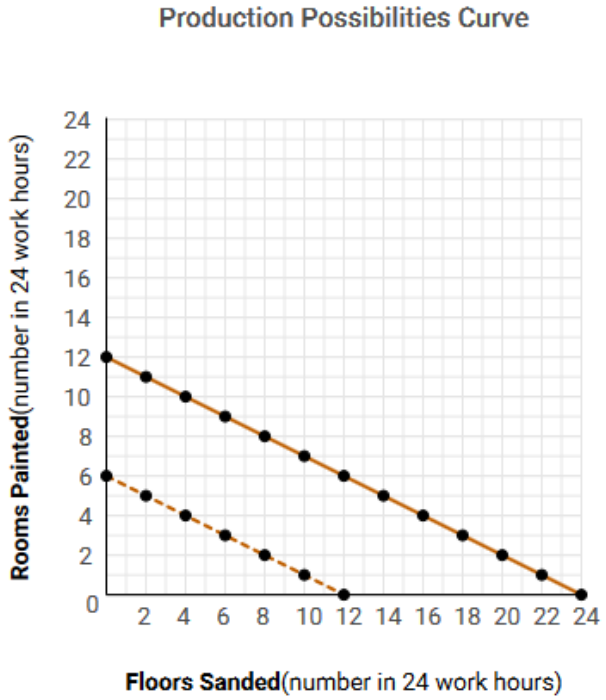
5) Assume that it takes four hours of labor time to paint a room and two hours to sand a floor. If two workers each spend 24 hours painting, (a) How many rooms could be painted? (b) If a decision were made to only sand floors, how many floors could be sanded? (c) Illustrate with a production possibilities curve. **(LO 1-1)**

Answer:

(a) If two workers each spend 24 hours painting rooms and they can paint one room in 4 hours, then these workers can paint 12 rooms [= (24 hours × 2 workers)/(4 hours per room)].

(b) If two workers each spend 24 hours sanding floors and they can sand one floor in 2 hours, then these workers can sand 24 floors [= (24 hours × 2 workers)/(2 hours per floor)].

(c) The various production possibilities are plotted with "Rooms Painted" on the vertical axis and "Floors Sanded" on the horizontal axis. Since there are two workers, the production possibilities have doubled. If both workers spend all of their time painting rooms, 12 rooms can be painted (0 floors sanded and 12 rooms painted). On the other hand, if both workers spend all of their time sanding floors, 24 floors can be sanded (24 floors sanded and 0 rooms painted). Some of the alternative production possibilities points in between those two extremes are (4 floors sanded and 10 rooms painted), (8 floors sanded and 8 rooms painted), (12 floors sanded and 6 rooms painted), (16 floors sanded and 4 rooms painted), and (20 floors sanded and 2 rooms painted).



6) North Korea has a population of 26 million people, of whom 1.2 million are in the military. South Korea has a military of 650,000 out of a population of 52 million. What percentage of the population is in the military in (a) North Korea? (b) South Korea? **(LO 1-2)**

Answer:

(a) In North Korea, 4.61 percent of the population is in the military. Percentage of population in the military = (military ÷ population) × 100 = (1.2 million ÷ 26 million) × 100 = 4.61%.

(b) In South Korea, 1.25 percent of the population is in the military. Percentage of population in the military = (military ÷ population) × 100 = (0.650 million ÷ 52 million) × 100 = 1.25%.

7) The table below describes the production possibilities confronting an economy. Using that information: (a) Calculate the opportunity costs of building hospitals. (b) Draw the production possibilities curve. (c) Why can't more of both outputs be produced? (d) Which point on the curve is the most desired one? **(LO 1-3)**

Potential Output Combinations	Homeless Shelters	Hospitals
A	20	0
B	17	1
C	13	2
D	7	3
E	0	4

Answer:

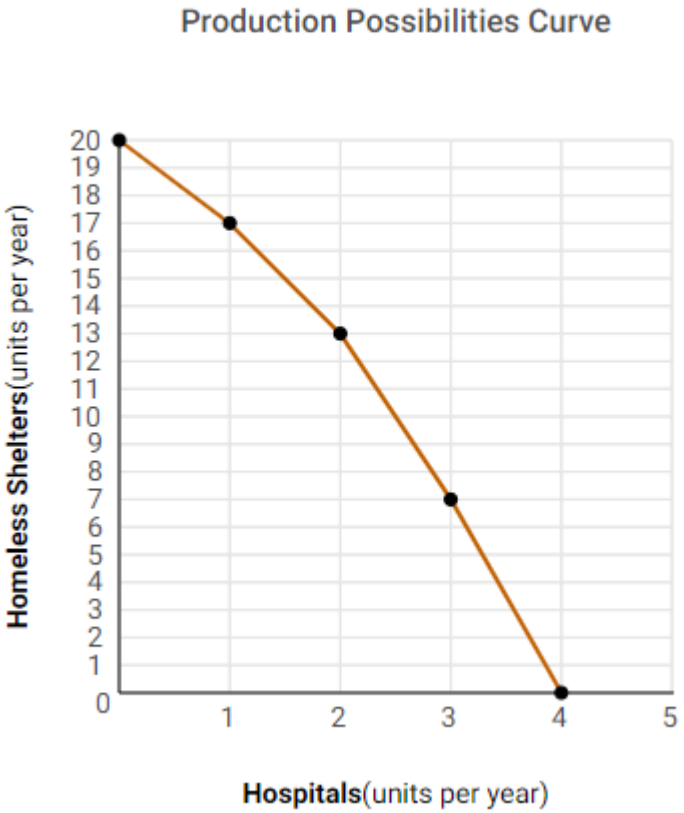
(a) **Calculating Opportunity Costs.** Opportunity cost is the most desired goods and services that are forgone in order to obtain something else. In this economy, the opportunity cost of building more hospitals is giving up building homeless shelters.

- The opportunity cost of producing the first hospital is a reduction in the production of homeless shelters from 20 to 17, or 3 homeless shelters.
- The opportunity cost of producing the second hospital is a reduction in the production of homeless shelters from 17 to 13, or 4 homeless shelters.
- The opportunity cost of producing the third hospital is a reduction in the production of homeless shelters from 13 to 7, or 6 homeless shelters.
- The opportunity cost of producing the fourth hospital is a reduction in the production of homeless shelters from 7 to 0, or 7 homeless shelters.

Potential Output Combinations	Homeless Shelters	Hospitals	Opportunity Cost of Building One More Hospital
A	20	0	

B	17	1	3 Homeless Shelters
C	13	2	4 Homeless Shelters
D	7	3	6 Homeless Shelters
E	0	4	7 Homeless Shelters

(b) **Graphing the Production Possibilities Curve.** A production possibilities curve describes the various combinations of final goods or services that could be produced in a given time period with available resources and technology. For example, one combination of output is 20 homeless shelters and 0 hospitals, a second combination of output is 17 homeless shelters and 1 hospital, and so on.



(c) Because all resources are scarce and therefore limited, we are not capable of producing more of both products. Although we might want more of both (or more of everything perhaps), we are not capable of producing everything that we want.

(d) This answer depends on the value judgments of a society. The most desired combination will vary based upon the particular wants and needs of that particular society.

8) In 2018 the dollar value of total output was roughly $40 billion in North Korea and $1,600 billion in South Korea. South Korea devoted 2.9 percent of its output to defense and North Korea devoted 19.0 percent of its output to defense. (a) How much does North Korea spend on its military (in dollars)? (b) Which nation spends more (in dollars)? **(LO 1-3)**

Answer:

(a) North Korea spent approximately $7.60 billion on its military.

$40 billion × 19.0% = $40 billion × 0.190 = $7.60 billion

(b) South Korea spent approximately $46.4 billion on its military.

$1,600 billion × 2.9% = $1,600 billion × 0.029 = $46.4 billion

Therefore, South Korea spent more on its defense (in dollars) than North Korea

9) According to the News Wire "Opportunity Cost," what is the opportunity cost of a single ICBM rocket launch in terms of corn for each of North Korea's 26 million people? **(LO 1-4)**

Answer:

According to the article, the $1.3 billion spent on the rocket launch is equivalent to acquiring 5 million tons of corn. This amounts to 0.19 tons of corn per person (= 5 million tons of corn ÷ 26 million people).

10) **POLICY PERSPECTIVES** In Figure 1.6, (a) If as much health care as possible is provided, how many other goods will be provided? (b) What is the opportunity cost of increasing health care from Point H_1 to Point H_2? **(LO 1-5)**

Answer:

(a) If a society uses all of its resources to produce health care, there are no resources remaining to produce other goods. Producing as much health care as possible would lead to this outcome.

(b) When health care production increases from Point H_1 to Point H_2, the production of other goods decreases from Point O_1 to Point O_2 . This decrease in the production of other goods is the opportunity cost of increasing production of health care.

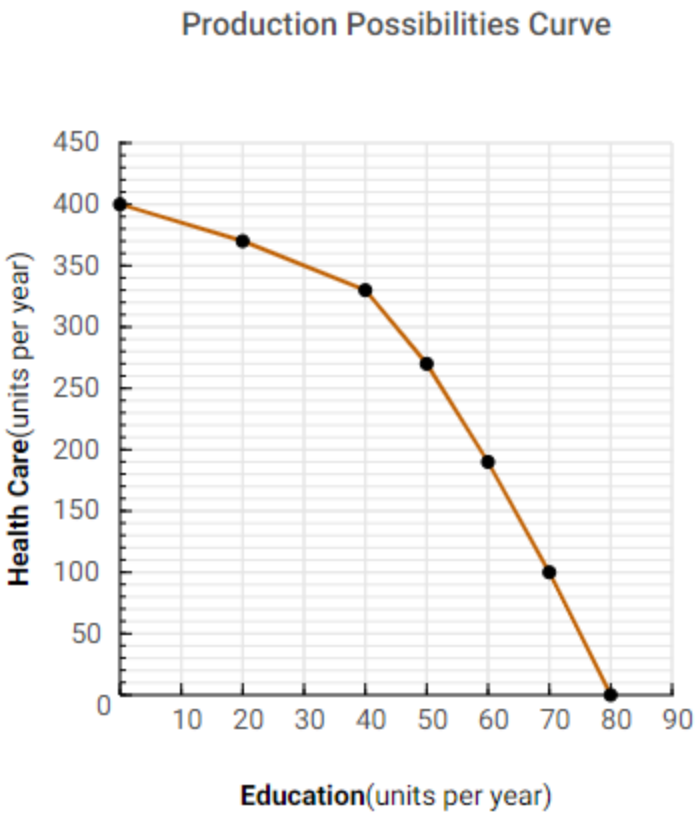
11) **POLICY PERSPECTIVES** Suppose the following data reflect the production possibilities for providing health care and education:

	Units per Year						
Health Care	400	370	330	270	190	100	0
Education	0	20	40	50	60	70	80

(a) Graph the production possibilities curve.
(b) If maximum health care is provided, how much education will be provided?
(c) What is the opportunity cost of increasing health care from 100 to 190 units? **(LO 1-5)**

Answer:

(a) A production possibilities curve describes the various combinations of final goods or services that could be produced in a given time period with available resources and technology. For example, one combination of outputs is 400 units of health care and 0 units of education, a second combination of outputs is 370 units of health care and 20 units of education, and so on.



(b) If all resources are used to produce health care, there will be no resources available to produce education.

(c) Increasing health care from 190 units to 270 units results in an opportunity cost of 10 units of education (= 60 units of education – 50 units of education).

Chapter 1 Flipped and Online Class Applications

1. Go to the Heritage Foundation's Index of Economic Freedom at https://www.heritage.org/index/ Click on "See all Rankings" to see the ranking of all of the countries in the world. Find the United States on the list, and click to see more details. "Click on "Government Size", then click on "Government Spending." At the bottom of the graph click on the icon "Government Spending." to answer the questions below.
    a. Has government spending increased or decreased from the previous year?
    b. How has that affected the overall "score" that the United States receives in the Index of Economic Freedom? Why do you think this is? Is increased government spending good or bad for the economy?
    c. Using a *production possibilities curve* with "Government Output" on one axis and "Consumer Goods" on the other axis, show the change you discuss above. Use one point on the curve to represent the current year (or the most recent year of the index if it hasn't been updated yet) and another point to represent the previous year. (Assume that the production possibilities did not shift from the previous year.)

2. Return to the full list of countries in the Heritage Foundation's Index of Economic Freedom. Find the countries that rank #1, #51 and #101 to answer the questions below.
    a. Fill in the table below.

	Ranked #1	Ranked #51	Ranked #101
Country Name			
GDP			
Unemployment			
Government Spending as a percent of GDP			
Growth rate of GDP			

    b. GDP is a measure of how much an economy produces. Using the information in the table above, draw *production possibilities curves* for the three countries about which you've gathered information, and draw a point to indicate each economy's current mix of output. Put "Government Output" on one axis and "Consumer Goods" on the other. Consider the following when drawing your curves: How much output is the economy capable of producing? How much of the spending in the economy is done by government? What is the rate of unemployment, and how does this affect where you will draw the point representing the current mix of output.
    c. How do you think each of these three diagrams will be different in 10 years?

3. Visit the National Economic Accounts section of the Bureau of Economic Analysis website at https://www.bea.gov/data/gdp/gross-domestic-product#gdp and open up the latest News Release on gross domestic product (GDP). Investment is necessary to replace, modernize, and expand the nation's production capacity. Find the paragraph that deals with real nonresidential fixed investment.
    a. What was the percentage change in nonresidential fixed investment during the previous two quarters?
    b. What does this tell you about what is happening to the country's production possibilities curve?

CHAPTER 1

THE CHALLENGE OF ECONOMICS

WHAT IS THIS CHAPTER ALL ABOUT?

The chapter introduces students to the basic building blocks of economics, including the discipline's vocabulary and graphical methods. The primary analytical tool introduced in the chapter is the production possibility curve. This chapter establishes the textbook's central theme of the differences between reliance on markets versus government intervention. The current context of public opinion, the changing balance among markets, and government intervention are discussed.

Students' attention is focused on the three central questions for economic systems:

1. **WHAT are the basic goals of an economic system?**
2. **HOW does a market economy address these goals?**
3. **What role should government play in shaping economic outcomes?**

NEW TO THIS EDITION

- One new question for discussion
- Revised chapter problems

LECTURE LAUNCHERS

Where should you start?

1. Opportunity cost is a key concept, but one often not grasped fully by students.

   a. *Define the term opportunity cost. Use the decision to attend class as an example of opportunity cost. What else could students be doing (sleeping, working, attending another class)? Ask students what they could be doing instead of being in class today.*
   b. *Ask students to list what they give up to attend class in addition to tuition fees. Do the same for going to the movies. Have student prioritize so that the "next best alternative" can be identified.*

2. *Scarcity* and *economics* are terms that, while used in everyday speech, have specific definitions within the discipline.

   Discuss with students the need for careful definitions for words that are used casually in everyday speech. Ask students for examples from other disciplines in which accurate thinking requires careful definitions. Remind students that everyday use isn't wrong, but that careful, discipline-specific use is necessary if we are to analyze problems accurately.

3. Remember the three questions: What, How, and For Whom.

   All chapters begin with these three questions. Use the questions to analyze an experience common to all students such as: "How many people would attend school if education was provided only by the private market?" If you teach in a state school, many people would say they could not attend college without state subsidies. If you teach in a private school, ask how many students receive guaranteed student loans, Pell grants, etc. Follow this discussion with the question, "Is there then a role for government in subsidizing education?"

COMMON STUDENT ERRORS

Many students make these common errors. This same list is included in the student study guide. The first statement in each "common error" below is incorrect. Each incorrect statement is followed by a corrected version and an explanation.

1. Words used in economics have the same meaning as they do in our everyday conversation. **WRONG!**
   Words used in everyday conversation very often have different meanings when they are used in economics. **RIGHT!**

   You'll have to be very careful here. Words are used with precision in economics. You'll have difficulty if you confuse their everyday meanings with their economic meanings.

2. Economic models are abstractions from the real world and are therefore useless in predicting and explaining economic behavior. **WRONG!**

Economic models are abstractions from the real world and as a result are useful in predicting and explaining economic behavior. **RIGHT!**

Economic thinking requires that we deal with abstractions. By using economic models based on specific assumptions, we can make reasonable judgments about what's going on around us. For example, the production possibilities curve is an abstraction. No economist would argue that the production possibilities curve represents an actual economy! But its focus on tradeoffs (such as the choice between consumer goods and military goods) is certainly useful in public policy discussions.

3. Because economics is a "science," all economists should come up with the same answer to any given question. **WRONG!**
Economics is a science, but there is often room for disagreement in trying to answer a given question. **RIGHT!**

Economics is a social science, and the entire society and economy represent the economist's laboratory. Economists cannot run the kind of experiments on the economies that are done by physical scientists. As a result, two economists may approach a given problem or question in different ways using different models. They may also choose different time periods to analyze or different data sets. As a result, they may come up with different answers, but because there is no answer book, you cannot say which is right. The solution is, then, to do more testing, refine our models, compare results, and so on.

4. The opportunity cost of going to a movie is the cost of the movie! **WRONG!**
The opportunity cost of going to a movie is the value of the other goods not purchased when the money is spent on the movie plus the value of your time. **RIGHT!**

Opportunity cost is the value of your next best alternative. If you go to a movie and pay, for example, $7, your opportunity cost is not only what you could have bought for the $7 but also what you could have done with your time instead of going to the movie.

5. Points on a production possibilities curve represent the current output of the economy. **WRONG!**
Points on a production possibilities curve represent what the economy is capable of producing. **RIGHT!**

A production possibilities curve (PPC) represents a theoretical maximum level of production assuming the economy is using all of its resources efficiently. It is most often the case that an economy will have unemployed resources and will therefore be located at a point inside its PPC.

6. Government involvement in the economy always results in a market failure. **WRONG!**
Government involvement in the economy can sometimes result in improving market outcomes. **RIGHT!**

Sometimes markets fail to achieve desirable outcomes. For example, if left entirely to the free market, water and air would likely be more polluted since there would be little incentive for companies to minimize pollution. Government intervention in the market has resulted in less pollution and improved the outcome.

News Wires

This chapter has three News Wire boxes. Their titles and the concept they illustrate are:

"Insatiable Wants" – **Never Enough Money!**

The result of a 2014 opinion poll asking Americans how much money they will need each year to be "happy" show that people sated that they will need twice as much income than they currently have to be happy. People always want more than the have, even multimillionaires say they do not have enough to live "comfortably."

"Future Living Standard" – **Will Your Kids Be Better Off?**

A Pew Research Center Poll of 2017 asked the following question: Do you think the future of the next generation of Americans will be better, worse, or about the same as life today? The answers are: Better off 28% , Worse off 48% , Same 20% and Unsure 4%. Note: Will you be better off than your parents? For living standards to keep rising, the economy must continue to grow. Will that happen? How?

" Opportunity Cost"-North Korea's Rockets Deepen Food Crisis

North Korea has spent a lot of money on its nuclear and rocket programs. Launching an ICBM missile costs around $1.3 billion. Since taking office in 2011, Kim Jong-un authorized over 20 launches, including ICBMs, North Korea's rocket program came at a great cost to the Korean people. The cost of just one rocket-ICBM launch, for example, could have been used to purchase 5 million tons of corn. That would have been of enormous benefit to the North Korean people , who have suffered decades of widespread poverty and periodic starvation. North Korea's inability to feed itself is due in part to its large army and missile program. Resources used for the military aren't available for producing food.

ANNOTATED CONTENTS IN DETAIL

I. Introduction

News Wire: "Insatiable Wants" - Never Enough Money!

The result of a 2014 opinion poll asking Americans how much money they need each year to be "happy" shows that people stated that they would need twice their current income. People always want more than they have; even multimillionaires say they do not have enough to live "comfortably."

News Wire: "Future Living Standard" – Will Your Kids Be Better Off?

A Pew Research Center Poll of 2017 asked the following question: "Do you think the future of the next generation of Americans will be better off, worse off, or about the same? The answers are: better off, 28%; worse off, 48%; same, 20%; and unsure, 4%. Note: Will you be better off than your parents? For living standards to keep rising, the economy must continue to grow. Will that happen? How?

II. The Central Problem of Scarcity

A. Economics

Definition: **Economics** – The study of how best to allocate scares resources among competing uses.
It offers the framework for explaining how we make choices. The goal of economic theory is to figure out how we can use our scarce resources in the best possible way.

B. Opportunity Cost

Definition: **Opportunity Cost** – The most desired goods and services that are forgone in order to obtain something else.
It is the sacrifice of a next-best alternative.

C. Factors of Production

Definition: **Factors of Production** – Resource inputs used to produce goods and services (e.g. land, labor, capital, and entrepreneurship).
The resources—land, labor, capital, and entrepreneurship—are the basic ingredients of production. They are called factors of production. The more factors of production we have, the more we can produce in a given period of time.

D. Scarcity

Definition: **Scarcity**—Lack of enough resources to satisfy all desired uses of those resources.

A situation where our desires for goods and services exceed our capacity to produce them.

III. Three Basic Economic Questions

A. **What to Produce:** Because wants exceed resources, we have to decide WHAT goods and services we want most, sacrificing less desired products.

1. **Production Possibilities (Figure 1.1 and Table 1.1)**
   a. **Definition:** **Production Possibilities**—The alternative combinations of goods and services that could be produced in a given time period with all available resources and technology.
   It represents a menu of output choices.
   b. Figure 1.1 illustrates a production possibilities curve that helps demonstrate the need to choose between the production of military goods and consumer goods.
   c. Table 1.1 presents a numeric example of production possibility information. More missiles can be produced only if some resources are diverted from home construction. Only one of these output combinations can be produced in a given time period. The question of WHAT to produce boils down to choosing one specific mix of output—a specific combination of missiles and houses. Selecting that mix is a basic economic issue.

2 **Military Share of Total U.S. Output**
Military-spending as a percent of the nation's output has been declining gradually for the past 50 years, with a slight increase in the last decade. Figure 1.2 illustrates rapid military buildup during World War II and how quickly resources were reallocated to consumer goods after the War. The September 11, 2001, terrorist attacks on New York and Washington, DC, altered the WHAT choice again, increasing the military share of total output with the war in Iraq and Afghanistan absorbing more resources.

3. **The Cost of War and the Military Share of Output (Figures 1.3 and 1.4)**
   a. The money spent on the war against Iraq is money that otherwise might have been spent on schools, highways, or other non-defense projects. North Korea spends 19 percent of output on military goods; China's army is twice as large as North Korea's but it spends only 2.1 percent of its output on the military.
   b. **News Wire: " Opportunity Cost" – North Korea's Rockets Deepen Food Crisis**

North Korea has spent a lot of money on its nuclear and rocket programs. Launching an ICBM missile costs around $1.3 billion. Since taking office in 2011, Kim Jong-un has authorized over 20 launches, including ICBMs. North Korea's rocket program has come at a great cost to the Korean people. The cost of just one rocket-ICBM launch, for example, could have been used to purchase 5 million tons of corn. That would have been of enormous benefit to the North Korean people, who have suffered decades of widespread poverty and periodic starvation.

Note: North Korea's inability to feed itself is due in part to its large army and missile program. Resources used for the military aren't available for producing food.

4. **Economic Growth (Figure 1.5)**
   a. **Investment**
      Definition: **Investment**—Expenditures on (production of) new plant and equipment (capital) in a given time period, plus changes in business inventories.
      Enhances our capacity to produce. If we want the economy to keep growing—and our living standard to rise—we must allocate some of our scarce resources to investment rather than current consumption.
   b. **Economic Growth**
      Definition: **Economic Growth**—An increase in output (real GDP); an expansion of production possibilities.
      Expands the production possibilities outward, allowing society to produce more goods in future years.

B. **How to Produce:** The second basic economic question concerns HOW we produce outputs. For example, should a class be taught in an auditorium or in a small discussion sections? Should it meet twice a week or only once? Should the class be taught online? Should the instructor assign more electronic supplements and homework? Should exams be open book? People may hold different views on the question of HOW, the common goal of every society is to find an optimal method of producing goods and services. The best possible answer to the HOW question involves efficiency in the use of factors of production and adequate safeguards for the environment and other social concerns.

C. **For Whom to Produce:** The FOR WHOM question focuses on how an economy's output is distributed across members of society.
   1. The economic pie can be divided in several ways.
      a. Distribution based on productive contributions.
      b. Distribution based on need.

c. Some combination of productive contributions and need.

Karl Marx's communist vision of For Whom to Produce is based on need rather than on productive contribution.

2. **Incentives:** Distribution based on need rather than work effort may result in less work effort and thus less output to distribute. As a result, the size of the pie may get smaller. It is difficult to select the right answer to the FOR WHOM question. The optimal distribution of income must satisfy our sense of fairness as well as our desire for more output.

IV. The Mechanisms of Choice

There are conflicts and tradeoffs with every choice. More of one good implies less of another. Society has to evaluate the alternatives and find the best possible answers to each question. The following mechanisms show how society actually makes decisions about WHAT to produce, HOW, and FOR WHOM.

A. **The Political Process:** Many basic economic decisions are made through the political process.

B. **The Market Mechanism:** Offers an alternative decision-making process.

1. Market Mechanism
   Definition: **Market Mechanism** – The use of market prices and sales to signal desired outputs (or resources allocations).
   This is the central actor in the reshuffling of resources and output.
2. Market sales and prices send a signal to producers about what mix of output consumers want.
3. Laissez Faire
   Definition: **Laissez Faire** – The doctrines of "leave it alone," of nonintervention by government in the market mechanism. That the market be left alone to make basic economic decisions.

C. **Central Planning**

1. Karl Marx believed the marketplace would cater to the whims of the rich and neglect the needs of the poor. That workers will be exploited by industrial barons and great landowners.
2. Central planning still is the principle mechanism of choice for nations such as North Korea and Cuba. The (people's) government, not the market, decides what goods will be produced, at what prices they are sold, and even who gets them.

D. **Mixed Economies**

1. **Definition:** **Mixed Economy** – An economy that uses both market and non-market signals to allocate goods and resources.

2. Few countries still depend so fully on central planners (government) to make basic economic decisions. China, Russia, and other formerly communist nations have turned over many decisions to the market mechanism.

V. What Economics Is All About

A. The goal of the different economic systems employed around the world is intended to provide the right answers to the WHAT, HOW, and FOR WHOM questions.

B. The different economic systems produce different outcomes and economist attempt to explain how these various outcomes emerge. Why are some nations more prosperous than other? What forces cause economic downturns in both rich and poor countries? What causes prices to go up and down so often? How can economies grow without destroying the environment?

C. Market failure

1. **Definition: Market Failure** – An imperfection in the market mechanism that prevents optimal outcome.
2. In studying this questions, economist recognize that neither markets nor government always have the right answers. Therefore, market failures occur when the market mechanism does not generate the best possible (optimal) answers to the WHAT, HOW, and FOR WHOM questions.
3. Markets might fail to distribute goods and services in the best possible way; that is, markets might produce too many luxury cars and too few hospitals or neglect the needs of the poor.

D. **Government Failure**

1. **Definition: Government Failure –** Government intervention that fails to improve market outcomes.
2. The possibility of government failure is sufficient warning that there is no guarantee that the visible hand of government will be any better than the invisible hand of the marketplace.
3. Just because the market fails doesn't always mean that government intervention will provide better answers to the WHAT, HOW, FOR WHOM questions.

E. **Macro vs. Micro**

1. Macroeconomics

   Definition: **Macroeconomics** – The study of aggregate economic behavior, of the economy as a whole.

   The essential concern of macroeconomics is to understand and Improve performance of the economy as a whole.

Macroeconomics focuses on the behavior of the entire economy. In studying macroeconomics the focus is on national goals such as full employment, control of inflation, and economic growth.

2. Microeconomics

Definition: **Microeconomics**—The study of individual behavior in the economy, of the components of the larger economy.

Microeconomics focuses on the individuals, firms, and government agencies that actually make up the larger economy. The interest is to understand the behavior of individual actors. What are their goals? How can they best achieve these goals with their limited resources? How will they respond to various incentives and opportunities?

E. **Theory vs. Reality**

1. Reality is too complex to describe and explain in one course.
2. We thus focus on basic relationships while ignoring unnecessary details. This means that theories are formulated, or models, of economic behaviors and then use those theories to evaluate and design policies.
3. *Ceteris Paribus*

Definition: ***Ceteris Paribus*** – The assumption that nothing else changes. "other things remaining equal (unchanged) " (in Latin, *ceteris paribus*) allows us to make straightforward predictions.

F. **Politics vs. Economics:** Although economic theory can make significant contributions to policy formulation, ultimately all policy decisions are a mix of politics and economic theory. Economics contribute to policy decisions by offering measures of economic impact and predictions of economic behavior. In the real world, those measures and predictions always contain a substantial margin or error.

G. **Modest Expectations:** In this course, our goals are modest: to develop a fresh perspective on economic behavior and an understanding of basic principles. To acquire a better view of how the economy works.

VII. Policy Perspective

Is "Free" Health Care Really Free?

A. Everyone wants more and better health care, and nearly everyone agrees that even the poorest members of society need reliable access to doctors and hospitals. However, this debate and proposal to expand access to more U.S. citizens is not without costs, explicit and implied.

B. By expanding health care to more consumers, resources that could have been used elsewhere are being allocated to the expansion of health care. The opportunity costs of expanded health care are the other goods that could have been produced (and consumed) with the same resources. The most fundamental concept in economics is this: **There is no free lunch.**

C. These choices illustrate the core economic dilemma of society that there is no free lunch. There is no free health care—resources used to supply health care implies less output of other desired goods. Which output should be reduced to fund the expansion of health care? **Figure 1.6**

D. The Affordable Care Act of 2010 imposed taxes and fees that forced consumers to buy more health care (insurance), but left them with less income to purchase "other goods." The trade-off (opportunity cost) that accompanies expanded health care makes the decision about WHAT to produce difficult.

E. Finally, the question is raised about who should make the decision about the optimal mix of output: politics or markets?

VIII. Appendix

A. Using Graphs: The appendix to this chapter helps the students use and interpret graphs. It is highly recommended that you either cover the appendix or assign to students as outside reading. Laying a good graphical foundation early in the semester will pay tremendous dividends as the semester continues.

1. The relationship of grades and study time (Figure A.1)
2. Slopes
   a. Slope = $\frac{the\ rise}{the\ run}$
3. Shifts: When a curve shifts, the underlying relationship between the two variables has changed. (Figure A.2)
4. Linear vs. Nonlinear Curve: Curves can be either linear or non-linear (Figures A.3 and A.4, respectively). A distinguishing feature of linear curves is that they have the same (constant) slope throughout, while the slope of nonlinear curve changes at each point of the curve.
5. Causation: A graph plotting grades versus study time is simply a plot of empirical observations. The graph does not show causation; rather, the plot must be interpreted based upon some underlying theory or expectation.

IN-CLASS DEBATE, EXTENDING THE DEBATE, AND DEBATE PROJECTS

In-Class Debate: Do we work too hard?

One of the limiting resources in our economy is time. As a society, we make choices about the allocation of time between work and other pursuits. In the United States, most workers are eligible for overtime pay if they work more than 40 hours a week, whereas most European workers become eligible at 35 hours per week. In addition, workers in Europe have guaranteed vacation time—five weeks in France—a benefit not available in the United States. As a result, the typical U.S. worker puts in about 2,000 hours per year compared to 1,700 hours per year in France and Germany.

Should U.S. laws be changed to require a shorter workweek and longer vacation time?

For each side of the question, list three strong arguments. Use the following concepts from the chapter at least once.

Production possibilities curve
Economic growth
Market mechanism
Market failure

Teaching notes

Classroom discussion often encourages students to debate one another. Although lively, such discussion usually involves a minority of students. A cooperative controversy ensures that *every* student is involved in the debate while using a relatively short period of class time. Moreover, it can help students see the arguments on both sides of an issue, often a difficult task for college students. Finally, the technique helps focus on an outcome such as identification of the strongest argument on each side. These outcomes may be useful later, if students are assigned an appropriate essay.

Format: Organize students into groups of two. (Use instructor assignment or random assignment so that friends don't work together.) Assign the "pro" side to half of the groups and the "con" side to the other half. Have each pair list the strongest arguments for their position. Then, combine pairs into groups of four, with one pair on each side of the debate. Instruct one pair to read their reasons while the other side listens. Then have the pairs reverse roles and repeat. Finally, ask each group of four to select the strongest argument on each side and, if appropriate, reach a consensus on a final position.

Sample answers:

No

1) A reduction in the workweek would shift the **production possibilities curve** in, reducing the capacity of the economy to produce. Americans value the output that would be lost more highly than the leisure time they lose by choosing to do it. If that were not the case, they wouldn't be working those hours.

2) The reduction in production capacity would not just occur in the present. It would also affect the future. If the production possibilities curve shifts in, it seems likely that there will be less consumption goods *and* less capital goods produced. That will mean slower **economic growth** in addition to lower production in the present.

3) Government should not further involve itself in regulating hours of work or number of holidays. This is something that ought to be left to the market. To understand why, think about a simple example: suppose that compensation has only two dimensions—wages and paid vacation. Employers compete for workers by offering different mixes of compensation. Some offer higher wages and fewer weeks of paid vacation, others offer lower wages and more weeks of vacation. Workers will go to work for the employers offering the most attractive mix. As a result of this competition for workers, employers have a strong incentive to offer vacation benefits that reflect the preferences of workers.

Yes

1) It is tempting to think that Americans working 2,000 hours per year, on average, simply reflects the preference of Americans. But **market mechanisms** don't always produce the optimal mix of output; **market failures** occur. It is possible that choices made through the market lead to our economy producing less leisure than would be optimal. This might be true, for example, if there were externalities imposed on third parties as a result of long hours of work. For example, maybe children spend many hours in bad day care as a result of their parents working long hours. If parents don't fully understand the consequences to society, in terms of future aggressive behavior, or if they value the extra income more highly than they value well-socialized children, from society's point of view they may work too many hours in the market and too few hours caring for their children.

2) To argue that **market mechanisms** will automatically get employers to offer vacation benefits that reflect worker preferences is to believe too readily in the power of the market. While there are times when employers are competing intently for workers, for many jobs, at many times, workers are in surplus. If the economy is operating inside its production possibilities frontier, for example during a recession, employers are free to think more about what is best for the business and less about getting the mix of wages and weeks of vacation right from the employee's point of view.

Extending the Debate: Too much for the military—or not enough?

The allocation of resources to the military is a major policy choice for the United States. First, find out how much currently is spent on military programs from the National Priorities Project, a website that analyzes and clarifies federal data so that people can understand and influence how their tax dollars are spent at www.nationalpriorities.org/.

In Washington, DC, research organizations provide information to political leaders regarding the military budget. At the following two sites, find three arguments in favor of the current budget level (or increasing it) and three arguments for reducing the current spending level. Select one argument from each side as the most important reason for increasing/maintaining/reducing military spending. Then write a response to this argument, pointing out its weak points.

The Heritage Foundation is a think tank to promote conservative public policies based on a strong national defense. https://www.heritage.org/defense

Project on Defense Alternatives is a think tank to promote the broadest range of defense options that will allow significant reductions in the level of armed forces and military spending. www.comw.org/pda/

Teaching notes

Possible student answers:

Raise the military budget
America's military leaders are asking—practically begging—for more support, and some members of Congress are starting to listen. Chairman of the Joint Chiefs of Staff, Admiral Michael Mullen, recently told *The New York Times* and *Defense News* that current defense spending of about 4 percent of gross domestic product (GDP) is the floor for the next several years and that the U.S. military will need to increase its share of the overall budget to replace aging weapons and platforms. Air Force Chief of Staff, General T. Michael Moseley, has also endorsed the 4 percent floor and has said that there needs to be a national debate about robust and sustained defense spending. https://www.heritage.org/defense

Reduce the military budget

In the coming decade, pressure to reduce U.S. defense expenditures will mount. Reducing America's excess capacity for high-intensity conventional warfare offers one means for realizing savings. During FY 2008, U.S. national defense spending will significantly surpass the $650 billion mark. Since 1998, the nation has allocated about $4.5 trillion to defense. About $1.5 trillion of this was due to spending above the 1998 baseline. This increment, together with tax cuts, has added more than $3 trillion to the gross federal debt—much of it borrowed from social security. A plurality of Americans *already believe* that the nation is spending too much on defense—probably because they perceive a decrement in security despite a 75 percent inflation-adjusted increase in spending since 1998. Indeed, military capabilities in some areas have grown beyond manifest requirements. www.comw.org/pda/0708bm42.html

Debate Project: Economic growth

Although economists routinely use GDP and other national income and product statistics in their research, there is debate among economists about the appropriateness of GDP as a measure of well-being—and even disputes about whether or not we are *really* better off if we have more goods and services.

Key questions:

- Is GDP a good measure of our economic well-being?
- What has been done in recent years to improve GDP statistics?
- Should GDP take into account environmental issues, distributional issues, and health and welfare issues?
- How, specifically, can GDP be adjusted to better measure well-being?

For arguments on why we would be better off with a simpler lifestyle, see: https://health.usnews.com/health-news/health-wellness/articles/2014/11/05/the-health-benefits-of-simple-living and https://www.lifehack.org/276972/10-reasons-why-simple-lifestyle-reduces-stress-and-benefits-your-health.

On the advantages of economic growth, look at reports from the Federal Reserve Bank of Dallas. Their annual reports can be found at https://www.dallasfed.org/fed/annual.aspx. (From the homepage www.dallasfed.org, click on “Publications” in the upper-right corner, then click on “Annual Report—Dallas Fed” from the alphabetized list that appears.)

Commented [GA1]: Please change this to navigation directions to these reports from the main Dallas Fed page.

For discussion of GDP and other measures of income and output by the U.S. Department of Commerce, see the Bureau of Economic Analysis at www.bea.gov.

For criticisms of GDP as a measure of well-being and for alternative indicators for individual countries (ranging from life expectancy to personal computers in use), see the United Nations Development Program Human Development Report at http://hdr.undp.org/en/.

For an alternative to GDP, see the World Happiness Report at https://worldhappiness.report.

For discussion of the environment and economic growth, see Resources for the Future at www.rff.org/.

FLIPPED AND ONLINE CLASS APPLICATIONS to accompany this chapter can be found in the Instructor's Resources section of Connect.

Chapter 1 Flipped and Online Class Applications

1. Go to the Heritage Foundation's Index of Economic Freedom at https://www.heritage.org/index/ Click on "See all Rankings" to see the ranking of all of the countries in the world. Find the United States on the list, and click to see more details. "Click on "Government Size", then click on "Government Spending." At the bottom of the graph click on the icon "Government Spending." to answer the questions below.
    a. Has government spending increased or decreased from the previous year?
    b. How has that affected the overall "score" that the United States receives in the Index of Economic Freedom? Why do you think this is? Is increased government spending good or bad for the economy?
    c. Using a *production possibilities curve* with "Government Output" on one axis and "Consumer Goods" on the other axis, show the change you discuss above. Use one point on the curve to represent the current year (or the most recent year of the index if it hasn't been updated yet) and another point to represent the previous year. (Assume that the production possibilities did not shift from the previous year.)

2. Return to the full list of countries in the Heritage Foundation's Index of Economic Freedom. Find the countries that rank #1, #51, and #101 to answer the questions below.
    a. Fill in the table below.

	Ranked #1	Ranked #51	Ranked #101
Country Name			
GDP			
Unemployment			
Government Spending as a percent of GDP			
Growth rate of GDP			

    b. GDP is a measure of how much an economy produces. Using the information in the table above, draw *production possibilities curves* for the three countries about which you've gathered information, and draw a point to indicate each economy's current mix of output. Put "Government Output" on one axis and "Consumer Goods" on the other. Consider the following when drawing your curves: How much output is the economy capable of producing? How much of the spending in the economy is done by government? What is the rate of unemployment, and how does this affect where you will draw the point representing the current mix of output.
    c. How do you think each of these three diagrams will be different in 10 years?

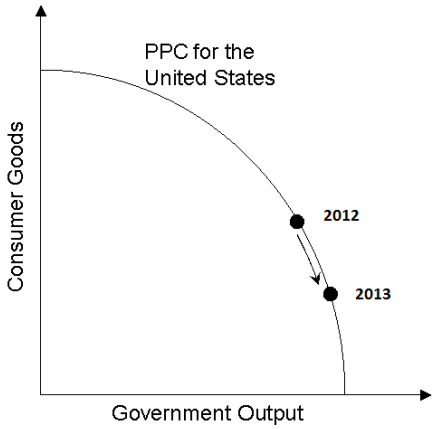
3. Visit the National Economic Accounts section of the Bureau of Economic Analysis website at https://www.bea.gov/data/gdp/gross-domestic-product#gdp and open up the latest News Release on gross domestic product (GDP). Investment is necessary to replace, modernize, and

expand the nation's production capacity. Find the paragraph that deals with *real nonresidential fixed investment*.

a. What was the percentage change in nonresidential fixed investment during the previous two quarters?
b. What does this tell you about what is happening to the country's production possibilities curve?

Answers to Chapter 1 Flipped and Online Class Applications

1. The answers below will vary as the Index of Economic Freedom is updated. All answers below refer to the 2018 Index of Economic Freedom.
   a. Government spending increased.
      Because more government spending leaves individuals less choice, then they will not be able to make as many decisions on their own since the government makes them for that person. Increased government spending can be good or bad, but as a percent of GDP if government spending increases this tends to be a drag on the economy.
   b. The algorithm for the Index score does not appear in the index. The discussion from the authors states that zero government spending is the benchmark but that "excessive" government spending is penalized in the index. As the United States moves toward 30 percent or more of GDP composed of government spending, the index value for the United States will drop significantly. This is because the index is not linear, it is geometric. The discussion of the tax rates and the fact that they remain the same would not affect the Index. If rates had increased, then the Index would have fallen. The discussion of the large deficits is there because the builders of the Index feel that higher deficits are generally a bad thing and would reduce a country's rating in the Index. This is probably because the makers of the Index favor private market activity over government spending. In fact, the Heritage Foundation considers zero government spending to be the ideal amount. Whether or not more government spending is good or bad for the economy depends at least in part on whether *market failures* are greater or more common than *government failures*. This is an open question.
   c. The production possibilities curve below is based on the increase in government spending from 2012–2013. The most important thing is that the point move in the proper direction, the exact location of the two points on the curve is not important.

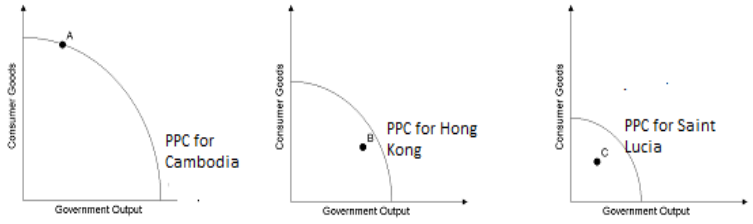


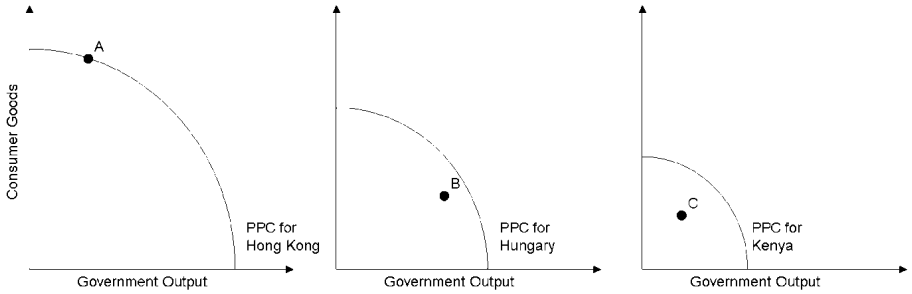
1

2. The answers below reflect the 2018 Index of Economic Freedom.
   a. The table should look something like this:

	Ranked #1	Ranked #51	Ranked #101
Country Name	Hong Kong	Saint Lucia	Cambodia
GDP (PPP)	$429.7 Billion	$2.1 Billion	$59 Billion
Unemployment	3.4%	19.8%	0.3%
Government Spending as a percent of GDP	18.0%	30.3%	21.2%
Growth rate of GDP	2.4%	1.6%	6.9%

   b. Below are examples of the three production possibilities curves that could be made based on the data above. Of primary importance are the following: the curves should be shifted farther outward for countries with higher GDP; the points reflecting the current mix of output should reflect the data on government spending; the countries with lower unemployment should be closer to (or on) the curves.





c. Based on the growth rate data collected above, Israel's should shift outward the most due to its very high growth rate, Hong Kong's should also shift out significantly, but slightly less than Israel's. Benin's should shift out the least, but just a bit less than Hong Kong's due to its slightly lower growth rate. It would probably be best to use the figures for the 5-year average growth rather than the annual growth because the 5-year growth is more likely to capture long-run growth rather than any short-term anomaly.

3. These data will change every semester. Below are correct answers based on the News Release of May 31, 2013, covering the first quarter of 2013 and the fourth quarter of 2012. Note that the easiest way to find this information is to use the search tool in the upper right part of the screen on the BEA website.
   a. Real nonresidential fixed investment increased 2.2 percent in the first quarter of 2013 compared to a rapid 13.2 percent increase in the fourth quarter of 2012.
   b. Because investment is necessary to replace, modernize, and expand the nation's production capacity, increases in investment shift the production possibilities curve outward. Arguably, the relatively frenzied pace of growth in the fourth quarter of 2012 could only be followed by a slower pace in the first quarter of 2013.

MEDIA EXERCISE Name: _____
Chapter 1 Section: _____
Economic: The Challenge of Economics

Find an article that describes a tradeoff between two goods or services. Use the article you have found to fulfill the following instructions and question.

1. Print an article from an Internet news agency such as www.cnn.com, www.wsj.com, www.npr.org, www.nytimes.com, etc.

2. What are the two goods or services (or groups of goods or services) involved in the tradeoff?
   - Use an arrow to indicate each good or service (or groups of goods or services) in the article. You should draw exactly two arrows in your article.
   - Below the article draw a pair of axes for a production possibilities curve. Write the name of one of the goods or services on the horizontal axis and the other on the vertical axis.

3. Place brackets around the phrase (not more than a sentence) that indicates that there is a tradeoff between the two goods or services.

4. Are there increasing opportunity costs in the tradeoff between the two goods or services? Under the article write one of the following:
   - "Increasing opportunity costs exist."
   - "No increasing opportunity costs exist."

5. What would the production possibilities curve between the two goods or services look like? Carefully and neatly, draw a production possibilities curve for the two goods or services. Don't use any numbers. Be very careful to draw the correct shape of the production possibilities curve on the evidence of the applicability or inapplicability of the law of increasing opportunity cost (see your answer in Exercise 4).

6. On the basis of information in the article, is there a possible shift of the production possibilities curve or a movement along it? The shift or movement may have occurred already, may be occurring presently, or may occur in the future. Possibly, the author of the article is implicitly advocating a shift or a movement. Underline the single word, phrase, or sentence (not more than a sentence) that indicates a shift or a movement.

7. Use an arrow or your graph to indicate what direction there would be a movement along the production possibilities curve or in what direction the curve would shift as a result of the event that you have just underlined.

8. In the remaining space below your article, indicate the source (name of newspaper, magazine, or website), title (newspaper headline, magazine article, or web article title), date, and page for the article you have chosen. If this information also appears in the article itself, circle each item. Use this format:

   Source: _____ Date: _____ Page: _____
   Headline: _____

9. Neatness counts.

Professor's Note

Learning Objective for Media Exercise

To test the students' understanding of increasing opportunity cost, the concept of tradeoff, and the difference between shifts of and movements along the production possibilities curve.

Suggestions for Correcting Media Exercise

1. Check that the items indicated with an arrow correspond to what is on the axes of the production possibilities curve that the student has drawn.
2. Check for the consistency between the student's drawing of the opportunity cost curve and his or her choice about whether or not there is increasing opportunity cost.
3. Check that the underlined passage indicates a shift or a movement along the production possibilities curve. Then see if the student has correctly pointed the arrow in the diagram to indicate the shift.

Likely Student Mistakes and Lecture Opportunities

1. There are likely to be many articles about budgetary disputes in Congress. Implicitly, the scarce factor is money, and there would appear to be no applicable law of increasing opportunity cost. The point needs to be made that the production possibilities curve applies to real goods and services with the factors of production such as labor, land, and capital.
2. The students are likely not to have a firm grasp on the difference between shifts of and movements along the production possibilities curve. This assignment and a short lecture on the issue should clear up the difference quickly.

SUPPLEMENTARY SOURCES

Ferraro, Paul J., and Laura O. Taylor, 2005. "Do Economists Recognize an Opportunity Cost When They See One? A Dismal Performance from the Dismal Science," *Contributions to Economics Analysis and Policy* 4(1): Article 7. An interesting opportunity cost example given to Ph.D. economists at the annual meetings. Ph.Ds scored very poorly. This article highlights the importance of understanding opportunity costs.

Heilbroner, Robert. 1990. "Analysis and Vision in the History of Modern Economic Thought," *Journal of Economic Literature*, 28(3): 1097–1114. This article provides a dramatic, easily readable explanation of capitalist and socialist theories.

Landes, David S. 1999. *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor,* W.W. Norton. This economic history includes an epilogue on current economic tensions.

DeLong, J. Bradford. July 28, 2016. "A Brief History of Modern Inequality," World Economic Forum, https://www.weforum.org/agenda/2016/07/a-brief-history-of-modern-inequality/.

CHAPTER 2

THE U.S. ECONOMY

WHAT IS THIS CHAPTER ALL ABOUT?

This chapter introduces the structure and institutions of the U.S. economy. It defines concepts such as gross domestic product (GDP), the structure of industry, and the functions of government in the U.S. economy.

The chapter's goal is to provide students with a sense for the overall economy building on their day-to-day experiences as workers and consumers. The chapter focuses on three core questions:

1. **WHAT goods and services does the United States produce?**
2. **HOW is that output produced?**
3. **FOR WHOM is the output produced?**

NEW TO THIS EDITION

- One News Wire on "GDP vs. Happiness"
- Updated data for Per Capital Income – 2018 (Table 2.3)
- Updated data for Income Group/Income – 2017 (Table 2.4)

LECTURE LAUNCHERS

Where should you start?

1. This chapter focuses on three central questions: What to produce, How to produce, and For Whom to produce.

   If you have international students in your class, you might ask how their nations answer these questions.

2. Begin your discussion by presenting the material in Figure 2.1. This compares the relative size of the U.S. economy to nine other nations.

Before you present this material, ask the students if they know the value of total output in the United States. Most will have no idea. To stress the point of how big $15 trillion is, ask the students how long it would take to count to 15 trillion. They will be astounded when you tell them it would take more than 475,000 years if you counted from 1 to 15 trillion increasing your count by one for each second that passes.

If you have students from other nations in your class, you might also find those nations' GDPs.

3. Show your students the difference between GDP and GDP per capita by comparing the data in Table 2.3 to Figure 2.1.

   Note that although China ranks high in terms of GDP, it ranks lower in terms of GDP per capita.

4. Another lecture launcher is to ask students questions such as "Are we worse off producing services rather than manufactured goods?" or "Why is the American standard of living so high relative to that of other nations? How did it increase so much?"

   The answer to these questions is that a nation benefits most by producing those products its resources are best at producing and trading for those products that its resources are not well suited to produce. The U.S. standard of living is so high because of high U.S. productivity.

COMMON STUDENT ERRORS

Many students make these common errors. This same list is included in the student study guide. The first statement in each "common error" below is incorrect. Each incorrect statement is followed by a corrected version and an explanation.

1. Income and output are two entirely different things. **WRONG!**
   Income and output are two sides of the same coin. **RIGHT!**

   This is fundamental. Every time a dollar's worth of final spending takes place, the seller must receive a dollar's worth of income. It could not be otherwise. Remember, profits are used as a balancing item. Don't confuse the term "income" with the term "profit." Profits can be negative, whereas output for the economy cannot be.

2. Comparisons of per capita GDP between countries tell you which population is better off. **WRONG!**
   Comparisons of per capita GDP between countries are only indicators of which population is better off. **RIGHT!**

Simple comparisons of per capita GDP ignore how the GDP is distributed. A country with a very high per capita GDP that is unequally distributed may provide a standard of living that is below that of another country with a lower per capita GDP but that is more equally distributed. Other problems with comparisons of per capita GDP result from exchange rate distortions, differences in the mix of output in two countries, and how the economy is organized. GDP per capita is an indicator only of the amount of goods and services each person could have, not what they do have.

3. Equity and equality of income distribution mean the same thing. **WRONG!**
Equity and equality of income distribution mean different things. **RIGHT!**

Many arguments over the division of the income pie, whether at the national level, the corporate level, or the university level, are laced with the terms "equity" and "equality" used interchangeably. They are not interchangeable. Equality of income distribution means that each person has an equal share. Equity of income distribution implies something about fairness. Some will surely be more productive than others at doing what society wants done. The brain surgeon's services have greater value than the hairdresser's. The surgeon's income will exceed that of the hairdresser—that is, they will be unequal. But is that inequitable? This is a matter of judgment. It's safe to say, however, that if one were not allowed to keep some of the rewards for being more productive than average, our economy would suffer. An equitable distribution of income in our society will require some inequality. How much? There is no sure answer to that question, only a series of compromises.

News Wires

This chapter has four News Wire boxes. Their titles and the concepts they illustrate are:

"GDP vs. Happiness" (Why Are the Finns So Happy?)

Finland is the world's happiest country. At least, that is the finding of surveys by a United Nations research team. Based on self-evaluations, in a survey of 150 nations, Finns were most satisfied with their lives. Money was a significant factor in their well-being (Finland ranks 15th in GDP per capita), but so was social support, health, life expectancy, freedom of choice, generosity, and perceptions of corruption. The world's richest country, the United States, ranked 18th on the happiness index. Although money wasn't always the most important factor in perceived happiness, residents of the world's poorest nations consistently ranked themselves as the unhappiest people on Earth.

"Manufacturing: Fewer Jobs, More Output" (U.S. Manufacturing: Output vs. Jobs Since 1975)

Since 1975 manufacturing output has more than doubled, while employment in the sector has decreased by 31 percent. While these American job losses are sobering they are not an indicator of declining U.S. competitiveness. As more output can be produced with fewer workers, manufacturing employment declines even while output increases.

"Human Capital" (The Education Gap between Rich and Poor Nations)

Virtually all Americans attend high school, and roughly 85 percent graduate. The percentage of school-age youth attending secondary schools is 32 percent in low-income countries, 70 percent in middle-income countries, and 93 percent in high-income countries. The high productivity of the American economy is explained in part by the quality of its labor resources. Workers in poorer, less developed countries get much less education and training.

"Global Inequality" (Income Share of the Rich)

Incomes tend to be distributed much less equally in poor countries than in rich countries. In developing countries the top 10 percent of all households can receive 40–50 percent of all income. In the United States and other developed countries, inequality is often much less severe.

ANNOTATED CONTENTS IN DETAIL

I. WHAT America Produces

A. The output of the U.S. economy is large and varied. To get a sense of how much is produced and what its basic contents are we must investigate further.

B. How Much Output

1. By multiplying the physical output of each good by its price, we can determine the total value of each good produced.
2. **Gross Domestic Product** (GDP) (Table 2.1)

   Definition: **Gross Domestic Product:** The total value of final goods and services produced within a nation's borders in a given time period. It is a summary measure of a nation's output.

   a. GDP is the most common output measure used.
   b. GDP is based on both physical output and prices.
3. **Nominal and Real GDP** (Table 2.2)

   Definition: Nominal GDP: The total value of goods and services produced within a nation's borders, measured in current prices.
   Accordingly, from one year to the next, either rising prices or increase in physical output could cause nominal GDP to increase.
   Real GDP: The inflation-adjusted value of GDP; the value of output measured in constant prices.

The inflation adjustments delete the effects of rising prices by valuing output in constant prices.

a. Table 2.2 offers an example of how to calculate nominal and real GDP.
b. In 2018 the U.S. economy produced $20 trillion of output.

4. **International Comparisons** (Figure 2.1)
   a. Total world output in 2018 was only $90 trillion.
   b. The U.S. economy produces more than 20 percent of the entire planet's output even though the United States has less than 5 percent of the world's population.
      i. The United States has the largest economy (Figure 2.1).
      ii. U.S. output is three times larger than Japan's, the world's third largest economy.
      iii. U.S. output is 12 times larger than Russia's, and 14 times larger than Mexico's.
   c. U.S. output exceeds the combined production of all the countries in Africa and South America.
5. **Per Capita GDP** (Table 2.3)
   Definition: **Per Capita GDP:** Total GDP divided by total population: average GDP. It is an indicator of how much output each person would get if all output were divided evenly among the population.
   a. In 2018, per capita GDP in the United States was approximately $59,000—more than four times the world average.
   b. GDP per capita around the world is presented in Table 2.3.
6. **Historical Comparison**
   a. People the U.S. government currently classifies as "poor" typically have a higher living standard than the human masses in Third World nations.
   b. The "poor" in the United States today have a similar lifestyle to the middle class in the 1930s.
   c. Economic growth; since 1900, the per capita output of the United States has risen by 500 percent.

   Definition: **Economic Growth:** An increase in output (real GDP); an expansion of production possibilities.
      i. U.S. output grows 3 percent a year; population grows 1 percent a year.
      ii. Per Capita incomes will double in approximately 35 years at a 2 percent real growth rate.
      iii. Living standards can fall, as they did in the United States during 1929–1939.
      iv. From 2008–2017, output per capita declined in many nations, such as in Venezuela, Ukraine, Libya, South Sudan, and many other already poor nations. The struggle between population growth and economic growth is a persistent problem.

7. **Social Welfare**

a. GDP measures only output produced for the market. It does not include many activities that affect our sense of well-being.
b. GDP is an incomplete measure of social welfare. Nonetheless, it is the single best measure of a nation's economic well-being.
c. **News Wire: "GDP vs. Happiness" (Why are the Finns So Happy?)** Finland is the world's happiest country. At least, that is the finding of surveys by a United Nations research team. Based on self-evaluations, in a survey of 150 nations, Finns were most satisfied with their lives. Money was a significant factor in their well-being (Finland ranks 15th in GDP per capita), but so was social support, health, life expectancy, freedom of choice, generosity, and perceptions of corruption. The world's richest country, the United States, ranked 18th on the happiness index. Although money wasn't always the most important factor in perceived happiness, residents of the world's poorest nations consistently ranked themselves as the unhappiest people on Earth.

C. The Mix of Output (Figure 2.2)

1. The wealth of a nation is best measured by its output rather than the amount of money it possesses.
2. The major uses of total output include household consumption, business investment, government services, and exports.
3. **Consumer Goods**—Largest Category of output.
   a. Consumer goods accounts for more than two-thirds of U.S. total output.
   b. Consumer purchases is classified into three categories:
      i. Durable goods—expected to last three years. **Examples:** Cars, appliances, TVs and furniture.
      Note: Purchases of durable goods are often cyclical, that is, very sensitive to economic trends.
      ii. Nondurable goods—items bought frequently.
      Example: Clothes, food, gasoline.
      iii. Services—the largest and fastest-growing component of consumption.
      Example: Medical care, entertainment, utilities, education and other services.
   c. More than half of consumer output is services.

4. **Investment Goods**

Definition: **Investment:** Expenditures on (production of) new plants and equipment (capital) in a given time period, plus changes in business inventories.

a. Investment goods are used to
   i. Replace worn-out equipment and factories, thus maintaining our production possibilities.
   ii. Increase and improve our stock of capital, thereby expanding our production possibilities.
   iii. Investment goods also include those products that businesses hold as inventory for later sales to consumers.
b. Accounts for 13 percent of U.S. GDP (Figure 2.2).
c. "Investment" refers to real output—plant and equipment produced for business sector. The term in this context does not refer to financial investment-corporate stocks

5. **Government Services**
   a. Accounts for 21 percent (8 percent federal, 12 percent state and local) of total output (Figure 2.2).
   b. Resources purchased by the government are not available for consumption or investment.
   c. **Income transfers**—Not counted in GDP.
      Definition: **Income transfers:** Payments to individuals for which no current goods or services are exchanged, (e.g., Social Security, welfare, and unemployment benefits). Such transfer payments account for half of all federal spending (Figure 2.3).
   d. Only that part of federal spending used to acquire resources and produce services is counted in GDP.
   e. In 2018, federal purchases (production) of goods and services accounted for only 8 percent of total output.
   f. State and local governments use more resources than the federal government. The output of all these state and local governments accounts for roughly 13 percent of total GDP.
6. **Net Exports**
   a. **Exports**
      Definition: **Exports:** Goods and services sold to foreign buyers.
   b. **Imports**
      Definition: **Imports:** Goods and services purchased from foreign sources.
   c. Exports– Imports = Net exports
   d. In 2018, net exports were negative 4 percent (Figure 2.2).
7. **Changing Industry Structure** (Figure 2.4)
   a. As the economy has grown, the mix of output has changed dramatically.
   b. **Decline in farming**
      i. In 1900, 4 of 10 workers were employed in agriculture.
      ii. Today less than 2 percent of the workforce is employed in agriculture.

iii. The number of people working in agriculture continues to decline as new technology makes it possible to grow more food with fewer workers.

c. **Decline in manufacturing**
   i. Between 1860 and 1920, the manufacturing share of GDP doubled, reaching a peak of 27 percent
   ii. Today, less than 20 percent of total output is in manufacturing.
   iii. Manufactured output has increased by fourfold in the last 50 years, but as a percentage of GDP, it has declined.

d. **New Wire**: **"Manufacturing: Fewer Jobs, More Output" (U.S. Manufacturing: Output vs. Jobs Since 1975)**
   Since 1975 manufacturing output has more than doubled, while employment in the sector has decreased by 31 percent. While these American job losses are sobering they are not an indicator of declining U.S. competitiveness. As more output can be produced with fewer workers, manufacturing employment declines even while output increases.

e. **Growth of services**
   i. The service sector is the fastest growing sector.
   ii. Service industry (including government) generate more than 70 percent of total output.
   iii. Among the fastest growing service industries are health care, computer science, software, financial services, retail trade, business services, and law.
   iv. Ninety-eight percent of net job growth over the next 10 years is projected to be in services.

f. **Growth of trade**
   i. International trade plays an increasing important role in how goods and services are produced.
   ii. Roughly one-eighth of the output Americans produce is exported; an even larger share of output is imported.
   iii. This increasing "globalization" of the U.S. economy is likely to continue.
   iv. Trade with other nations has also increased due to the Internet. Foreign consumers can access U.S. firms by clicking on their website and making purchases online.

II. HOW America Produces

A. Factors of Production

Definition: **Factors of Production:** Resource inputs used to produce goods and services (e.g. land, labor, capital, and entrepreneurship).

1. **Factors of Production**

a. The United States has the third largest population in the world behind China and India. The U.S. population is healthier and more educated than most other nations.
b. The United States also has the world's fourth largest land area behind Russia, China, and Canada with large quantities of natural resources such as oil, fertile soil, and hydropower.
c. These factors of production do not, however, dictate how much output will be produced or in what ways.
d. For example, China has five times as many people as the United States and equally abundant natural resources, yet China's annual output is only than two-thirds as large as America's output.
e. **Capital stock**
   i. U.S. capital stock is over $100 trillion worth of machinery, factories, and buildings.
   ii. **Capital intensive**
   Definition: **Capital intensive:** Production processes that use a high ratio of capital to labor inputs.
   American production tends to be capital intensive, in contrast to labor intensive in poorer countries.

2. **Factor Quality**
   a. **Productivity**
   Definition: **Productivity:** Output per unit of input (e.g. output per labor-hour).
   American workers reflects not only the capital intensity of the production process but also the quality of both capital and labor.
   b. **Human Capital**
   Definition: **Human Capital:** The knowledge and skills possessed by the workforce.
   Refers to the productive capabilities of labor.
   C. The high productivity of the U.S. economy is a product of education, training and experience; highly educated workers in capital-intensive production process.

d. **News Wire: "Human Capital" (The Education Gap between Rich and Poor Nations)**
U.S. education levels are higher compared to other nations. The high productivity of the American economy is explained in part by the quality of its labor resources. Workers in poorer, less developed countries get much less education or training.

3. **Factor Mobility**
   a. Our continuing ability to produce the goods and services that consumers demand also depends on our agility in reallocating resources from one industry to another.
   b. In 1974, Apple Computer, Microsoft, Amgen, and Oracle didn't exist. In 1994 Google Amazon, Yahoo!, and Netflix hadn't yet been founded. In 2002 Facebook and Tesla were still a concept, not an operational companies. Today, these companies collectively employ 1 million people. Uber did not offer car services until 2010: now it employs hundreds of thousands of drivers. Their workers came from other industries that weren't growing as fast.

B. The Private Sector: Business Types

1. In the United States there are 30 million businesses.
2. **Business Types**
   a. Corporations—owned by many stockholders.
   b. Partnerships—owned by a small number of individuals.
   c. Proprietorships—single owner.
3. **Corporate America** (Figure 2.5)
   a. Corporations produce the largest portion of GDP, and accounts for 60 percent of all business sales.
   b. Proprietorships are the most common type of firm but produce a small portion of GDP.

C. The Government's Role

1. Government plays a large role in how goods and services are produced.
2. **Providing a Legal Framework**
   a. One of the most basic functions of government is to establish and enforce the rules of the game.
   b. The government gives legitimacy to contracts by establishing the rules for such pacts and by enforcing their provisions.
   c. By establishing ownership rights, contract rights, and other rules of the game, the government lays the foundation for market transactions.
3. **Protecting consumers**
   a. **Monopoly**
      Definition: **Monopoly:** A firm that produces the entire market supply of a particular good or service.
   b. Antitrust laws prohibit mergers and acquisitions that threaten competition.
   c. The U.S. Department of Justice and Federal Trade Commission regulate pricing practices, advertising claims, and other behavior that might put consumers at an unfair disadvantage in product markets.
   d. The government also helps ensure the safety of products by requiring testing of drugs, food additives, and other products.
4. **Protecting labor**

a. The government also regulates how our labor resources are used in the production process, thus regulating HOW goods are produced by setting standards for workplace safety, minimum pay, fringe benefits, and overtime provisions.
b. Child labor laws prevent the exploitation of children.
c. Labor has the right to organize and set rules for union management relations.
d. Unemployment insurance, Social Security benefits, disability insurance, and guarantees for private pension benefits also have affected how much people work, when they retire, and even how long they live.

5. **Protecting the environment**
   a. Historically, the environment was not protected.
   b. In the absence of government intervention, such side effects as dirty air and water would be common. Decisions on how to produce would be based on private costs alone, not on how the environment is affected.
   c. **Externalities**
      Definition: **Externalities:** Cost (or benefit) of a market activity borne by a third party; the difference between the social and private costs (or benefit) of a market activity. Spillover costs imposed on the broader community-affects the collective well-being.
   d. To reduce external costs of production, the government limits air, water, and noise pollution and regulates environmental use.
6. **Striking a balance**
   a. Government interventions are designed to change resource use.
   b. Market goals are based on the profit-and-loss equation.
   c. Public opinion feels that the government is failing due to overregulation.
   d. Balance may be less regulation and more market-based outcomes.

III. FOR WHOM America Produces?

A. Who gets which slice of the pie?

1. In a market economy, an individual's income depends on
   a. The quantity and quality of resources owned.
   b. The price that those resources command in the market.
2. Karl Marx predicted that
   a. Capitalists would continue to accumulate wealth, power, and income.
   b. Members of the proletariat would get only enough output to assure their survival.
3. How Marx was wrong?
   a. Labor's share of output has risen greatly over time
   b. Many workers are rich, and a good many capitalists are poor.

b. The distinction between workers and capitalists has been blurred by profit sharing, employee ownership, and widespread corporate stock ownership.
c. In today's economy, it is more useful to examine how the economic pie is distributed across individuals, rather than across labor and capitalist classes.

B. The Distribution of Income (Figure 2.6 and Table 2.4)

1. The richest fifth of U.S. households gets more than half of all the income.
2. The poorest fifth of U.S. households gets only 3 percent of total income.
3. The statistics in Table 2.4 illustrate how unequally the FOR WHOM question is settled in the United States.
4. **News Wire: "Global Inequalities" (Income share of the rich)**
   Incomes tend to be distributed much less equally in poor countries than rich ones. The percentage of total income received by the top 10 percent in developing countries is between 40-50 percent of all incomes.
5. **Personal Distribution of Income**
   a. **Personal Distribution of Income**
      Definition: **Personal Distribution of Income**: The way total personal income is divided up among households or income classes.
   b. As countries develop, the personal distribution of income tends to become more equal.

C. Income Mobility—One of the most distinctive features of the U.S. income distribution is how often people move up and down the income ladder. This type of income mobility makes lifelong income much less unequal than annual income. In many nations, income inequalities are much more permanent.

D. Government Redistribution: Taxes and Transfers

1. **Taxes**
   a. **Progressive tax**
      Definition: **Progressive Tax:** A tax system in which tax rates rise as incomes rise.
      i. Example: The federal income tax is designed to be progressive.
      ii. A progressive tax makes after-tax incomes more equal than before-tax incomes.
2. **Income Transfers**
   a. Largest income transfer program is Social Security—pays over $81 trillion a year to 60 million older or disabled persons.
   b. The income-transfer system gives lower income households more output than the market itself would provide.
   c. In the absence of transfer payments and taxes the lowest income quintile would get only 1 percent of total income. The tax-transfer system raises their share to 3.1 percent.

IV. Policy Perspectives: Can We End Global Poverty?

A. According to the World Bank, 3 billion people scrape by on less than $3 per day.

B. In September 2000, the United Nations adopted a “Millennium Declaration” to reduce global poverty. Even a doubling of aid by the rich nations of the world will not achieve the UN’s goals.

C. Ultimately, the well-being of the world’s poor hinges on the development of strong national economies. Only persistent economic growth can end global poverty.

IN-CLASS DEBATE, EXTENDING THE DEBATE, AND DEBATE PROJECTS

In-Class Debate: What is the best tax policy?

Imagine that you are the economic advisor to a political candidate who is trying to decide about tax policy. She asks you to prepare a one paragraph position paper on each of the following:

1. Based on the distribution of personal income (Table 2.4), should U.S. taxes be adjusted to be:
   A. More progressive?
   B. More regressive?
   C. Keep the distribution the same?

2. Which U.S. taxes should be adjusted to achieve the outcome you describe in question one?

Teaching note

After students have answered question one individually, post three signs on different walls of the room labeled as follows: More progressive; More regressive; Keep the distribution the same. Ask students to stand up and move to the part of the room representing their position. Call on individual students to explain their position. Announce that students may shift position if they change their minds based on student comments.

Ask students to pair with someone who has the same position. Together they might write a paragraph explaining their position.

Follow with a cooperative controversy. Format: Combine pairs into groups of four, with one pair on each side of the debate. Instruct one pair to read their reasons while the other side listens. Then have the pairs reverse roles and repeat. Finally, ask each group of four to select the strongest argument on each side and, if appropriate, reach a consensus on a final position.

Or, follow with an individual writing assignment.

Extending the Debate: Where should we move?

Imagine that a friend is planning to marry and his/her intended is from another country: _____ [fill in one of the following countries: Sweden, Republic of Korea, Israel, Ireland, Japan, or Australia]. The couple needs to decide whether to remain the United States or to move to this country. Compare GDP per capita for each country as well as the United Nation Human Development Indicators at http://hdr.undp.org/en/data.

Based on this information, prepare a list of reasons:

1. Why should the couple remain in the United States?

2. Why should the couple move to the other country?
3. What are the problems with using GDP per capita in their decision?
4. What are the problems with using the UN Human Development Indicator in their decision?

Teaching notes

Ask students to bring their work to class. Use student answers to questions 1 and 2 to promote interest in measures of economic well-being. Use student answers to questions 3 and 4 for a more formal discussion of the pros and cons of GDP and the UN Human Development Indicator.

Debate Projects

For related debate material, see “Vouchers to Pay Private School Tuition” in Chapter 3.

FLIPPED AND ONLINE CLASS APPLICATIONS to accompany this chapter can be found in the Instructor's Resources section of Connect.

Chapter 2 Flipped and Online Class Applications

1. Go to the Interactive Access to National Income and Product Accounts (NIPA) Tables at the Bureau of Economic Analysis website, found here:
   https://apps.bea.gov/national/pdf/SupplementalBriefingTables-AU2017.pdf
   Find Table B1, "Revisions to Chain-Type Price Indexes Over the Period 2013–2016."
   a. Fill in the table below; enter all figures in billions of dollars.

	Three years ago	Two years ago	Last year
GDP			
Consumption			
Investment			
Government Spending			
Net Exports			

   b. Has GDP been rising or falling over the last three years? Is it possible that the change you have observed is just the result of prices rising (or falling)? Why or why not?
   c. When quarterly GDP data are reported, they are usually *annualized*, which means that the actual amount of output produced in the quarter is multiplied by 4 to show how much would be produced in a year if all four quarters were like the quarter being reported. The quarterly data in the NIPA tables on the BEA website are annualized this way. Look at the quarterly data for last year and calculate how much was *actually* produced in each quarter. Fill in the table below.

	Q1	Q2	Q3	Q4
GDP				
Consumption				
Investment				
Government Spending				
Net Exports				

2. Property taxes on houses and real estate are usually assessed as a millage rate, which is expressed as dollars in taxes per $1,000 of assessed value of the property. So within any one city, property tax rates are "flat"—that is, everybody is subject to the same millage rate. Go to www.city-data.com/ and find data on three "Bigger Cities" (which means the population is 6,000 or greater) located near where you live.
   a. Fill in rows A–C in the table below with data you find on this website. Then, using that information, calculate the values for row D.

	City #1	City #2	City #3

A. City Name			
B. Estimated Median Household Income			
C. Median Real Estate Property Taxes Paid (for Housing Units with Mortgages)			
D. Median Property Taxes as a Percent of Median Income = (C ÷ B) × 100%			

b. Do property taxes appear to be *progressive* or *regressive* based on the calculations you've done?
c. What other issues not captured in this simple analysis do you think might affect whether property taxes are progressive or regressive?

3. Visit the United States Department of Agriculture's homepage at https://www.nal.usda.gov/fnic. Click on "Food Labeling" and "Labeling & Nutrition." Go to https://www.fda.gov/downloads/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/UCM265446.pdf and scroll through it to see the basics of labeling. This was created to help food companies create labels for their food products that comply with the laws that govern food labels. You can't just put anything you want on a food label! Answer the questions below.
   a. If a package of American cheese claims that it is an "imitation" product, what does this mean? What rules govern cheese packaging?
   b. What are the criteria under which label is permitted to display a health claim?
   c. Based on your answers to parts *a* and *b*, who or what is protected by food labeling laws and regulations?

Answers to Chapter 2 Flipped and Online Class Applications

1. The exact numbers filled in will depend on the data available.
   a. The table below is filled in using 2010–2012.

	Three years ago ('10)	Two years ago ('11)	Last year ('12)
GDP	13,063.0	13,299.1	13,593.2
Consumption	9,196.2	9,428.8	9,603.3
Investment	1,458.1	1,744.0	1,914.4
Government Spending	2,589.4	2,523.9	2,481.1
Net Exports	–355.2	–408.0	–400.7

b. GDP rose from 2007 to 2008 but then fell substantially in 2009. Prices have no impact on the data above because this is *real* GDP, given in 2005 dollars. GDP increased each year although the percentage increase is relatively low. Again, because we are using real GDP numbers, the price component has been removed and so prices would not affect the data. Recall that nominal GDP includes changes in prices *and* changes in output, while real GDP removes the price component thus only taking into account changes in output.

c. The table below is filled in using the four quarters of 2012. Again recall from the instructions that the data from the table are annualized so the numbers below reflect the numbers from the table divided by 4.

	2012 Q1	2012 Q2	2012 Q3	2012 Q4
GDP	$3376.6	$3387.13	$3413.13	$3416.35
Consumption	$2386.7	$2395.63	$2405.03	$2415.98
Investment	$473.78	$474.6	$482.2	$483.78
Government Spending	$620.93	$619.85	–$625.78	–$614.53
Net Exports	–$103.88	–101.85$	–$98.8	–$96.18

2. Obviously, answers will vary depending on where your students live. The table below contains data for three cities in the suburbs of Houston, Texas.

a. The completed table below is just an example. The most recent data available are for 2009.

	City #1	City #2	City #3
A. City Name	Canton	Dearborn	Dearborn Heights
B. Estimated Median Household Income	$81,878	$48,467	$50,114
C. Median Real Estate Property Taxes Paid (for Housing Units with Mortgages)	$3,955	$3,580	$1,733
D. Median Property Taxes as a Percent of Median Income = (C ÷ B) × 100%	4.83%	7.39%	3.46%

A. City Name	Houston (77002)	Baytown (77522)	Sugar Land (77478)
B. Estimated Median Household Income	$42,945	$50,107	$85,554
C. Median Real Estate Property Taxes Paid (for	$4,583	$2,506	$4,352

Housing Units with Mortgages)			
D. Median Property Taxes as a Percent of Median Income = (C ÷ B) × 100%	10.67%	5.00%	5.08%

b. Student answers will vary. For the data above, the best answer is probably regressive. In the *poorest* city of the three, the highest percentage of income is paid in property taxes. *Even for the other two cities, taxes are regressive compared to Houston in that they pay a lower percentage of income in property tax. One might argue that in comparing Baytown with Sugar Land, the taxes are very slightly progressive but the difference is negligible.*

c. The three cities above may have different home values and different property tax rates. For example, if the city with the lowest income above, Houston, has the highest millage rate, we can't really conclude anything (based on this data) about whether property taxes are progressive or regressive. Also, we should consider that city services are related to property taxes, so residents in the city with the highest income, may be receiving very limited city services, in which case differences in tax rates reflect different preferences for city services. An additional issue may be the fact that people with higher incomes are more likely to own homes and pay property taxes (directly). Renters pay some property taxes in the form of higher rents, but owners of rental properties probably cannot set rents to vary perfectly with property tax rates.

3.

a. Foods labeled as "imitation" resemble a traditional food but do not match certain nutrition requirements. For example, imitation cheese contains less protein or less essential vitamins or minerals than the traditional food (in this case, perhaps cheddar cheese).

b. A health claim may be made if "a relationship exists between the presence or level of a substance in food and a disease or health-related condition." All health claims must be reviewed and evaluated by the FDA prior to distribution.

c. While the primary purpose of labeling laws and regulations is to protect buyers from unsafe products, misleading language, etc. (as is clear from the examples above), it is clear that some of the laws protect food producers as well. For example, the USDA considers "competitive advantages" or "economic hardship" to producers when deciding whether to allow a non-complying label. In other words, labeling laws are geared toward making the food business fair and competitive, while trying to avoid hurting producers in the process.

MEDIA EXERCISE

Chapter 2
The U.S. Economy

Name: _____
Section: _____

Find an article that provides new data on GDP, per capita GDP, percentage change in GDP, productivity, or income quintiles. Use the article you have found to complete the following instructions and questions.

1. Print an article from an Internet news agency such as www.cnn.com, www.wsj.com, www.npr.org, www.nytimes.com, etc.

2. Underline the word, phrase, or sentence (no more than a sentence) that mentions the specific data you have decided to examine.

3. In the space below the article, write which one of the basic economic questions—WHAT, HOW, or FOR WHOM—the data in the article are best suited to answer.

4. Circle the passage (no more than a sentence) that indicates the interpretation and context for the data given in the article.

5. The data in the article should be measuring one of the following concepts:
   - Output
   - Productivity
   - Standard of living
   - Income distribution
   - Economic growth
   - Share of economy

6. Are your answers to numbers 3 and 5 consistent? Briefly explain in the space below the article any inconsistency.

7. In the remaining space below your article, indicate the source (name of newspaper, magazine, or website), title (newspaper headline, magazine article, or web article title), date, and page for the article you have chosen. If this information also appears in the article itself, circle each item. Use this format:

Source: _____ Date: _____ Page: _____
Headline: _____

8. Neatness counts.

Professor's Note

Learning Objective for Media Exercise

To show the student how the data introduced in Chapter 2 are actually used. Also, to encourage the students to recognize the questions the media are trying to answer and to judge the appropriateness of the media's use of the data to answer those questions.

Suggestions for Correcting Media Exercise

1. Look for the proper matching of basic economic questions, concepts, and data.

Questions	Concept	Data
WHAT	Output	GDP
	Standard of living	Per capita GDP
	Economic growth	Percentage change in GDP
HOW	Productivity	Input/output, GDP share
FOR WHOM	Income distribution	Income quintiles, GDP share

   The prime focus should be on the student's correct matching of the data to the questions that the data are supposed to help answer.

2. The students are likely to circle sentences that have little to do with the data that have been presented. Because they could have chosen any article they wanted, the lack of relevance to the data is their fault, not the article's.

3. If an article uses data incorrectly, the students should catch the mistake. The mistakes can provide a very useful and credible lecture opportunity.

Likely Student Mistakes and Lecture Opportunities

1. From a class of thirty students, there are likely to be one or two cases where the article draws the incorrect interpretation or tries unsuccessfully to answer one of the basic questions using macroeconomic data.

2. Several students will mismatch data with the questions (WHAT, HOW, FOR WHOM) that the data can answer. It may be helpful to show them that the chapter is explicitly organized around these questions.

SUPPLEMENTARY RESOURCES

Krog, H. A. 2017. *State Profiles 2017: The Population and Economy of Each U.S. State*, Bernan Press.

Amadeo, K. April 24, 2018. "How Does the U.S. Economy Work?" The Balance, https://www.thebalance.com/us-economy-4073968.

USA.gov. March 26, 2019. “Budget of the U.S. Government,” https://www.usa.gov/budget. This material gives information on the general revenue and spending categories, on and off budget items, and other accessible analysis of the budgets.