Essentials of Economics 10th edition Schiller Solutions Manual

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ANSWERS TO QUESTIONS FOR DISCUSSION AND PROBLEMS

QUESTIONS FOR DISCUSSION

1. Americans already enjoy living standards that far exceed world averages. Do we have enough? Should we even try to produce more? **(LO 2-2)**

   Answer: The reality of human nature is that needs are culturally conditioned. There is never enough. Just to maintain living standards as population grows will require more output.

2. Why do we measure output in value terms rather than in physical terms? For that matter, why do we bother to measure output at all? **(LO 2-1)**

   Answer: Our economy produces thousands of different items, ranging from paper clips to sophisticated electronic equipment. Value estimates are a common denominator for measuring all of these different things. In addition, in our complex and decentralized market economy, it is impossible to account for every item of output produced. Sales records are more available for estimates of value than are output numbers across the economy. Measures of output provide benchmarks that show if growth is occurring and at what rate.

3. Why do people suggest that the United States needs to devote more resources to investment goods? Why not produce just consumption goods? **(LO 2-3)**

   Answer: Investment goods are capital goods such as machines and factories that help us produce more output. If we concentrated on only consumption goods, we would be unable to replace our machines as they wore out or to expand our productive capacity by producing more, and more efficient, machines.

4. The U.S. farm population has shrunk by over 25 million people since 1900. Where did they all go? Why did they move? **(LO 2-4)**

   Answers: They went to the cities to become factory workers and service workers because there were jobs available for them in those sectors of the economy. There were fewer and fewer jobs in the agricultural sector because of the advances of technology in that sector.

5. Rich people have over 15 times as much income as poor people. Is that fair? How should output be distributed? **(LO 2-5)**

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Answer: Fair is generally considered to be a relative term. On an individual basis, many would consider it 'fair' if they personally received more or if someone else received less. In a market economy, the distribution of output (and therefore income) is determined primarily by the laws of supply and demand. This often results in an unequal distribution. However, in order to make sure that the distribution is not so unequal that we have people literally starving to death in the streets, the government steps in and lessens the degree of inequality through various programs and tax policies. Thus, at some point, fairness does become less subjective and more objective when the inequality causes lives being put at risk, which, once recognized, results in a redistribution of income.

6. If taxes were more progressive, would total output be affected? **(LO 2-5)**

   Answer: Taxes create a disincentive to engage in any activity that is being taxed. If taxes were more progressive, people who face the higher taxes would have less incentive to work. As a result, total output would decline.

7. Why might income inequalities diminish as an economy develops? **(LO 2-5)**

   Answer: As an economy develops, more jobs become available and thus more people will work and earn incomes. There will also be more capital available and therefore labor productivity – and income of workers – will rise. Although incomes will not likely be equalized, on average there should be, and generally is, less income disparity.

8. Why is per capita GDP so much higher in the United States than in Mexico? **(LO 2-3)**

   Answer: U.S. workers have much more capital, technology, and education to work with, which raises their productivity (output per worker) far above that of Mexican workers.

9. Do we need more or less government intervention to decide WHAT, HOW, and FOR WHOM? Give specific examples. **(LO 2-4)**

   Answer: It really depends on the type of goods and services society would like to see provided. Some products such as clean water and clean air are not usually provided well by private markets and more government intervention might be desired. Other products such as computers, food, etc., are usually best provided by markets and less government intervention might be desired.

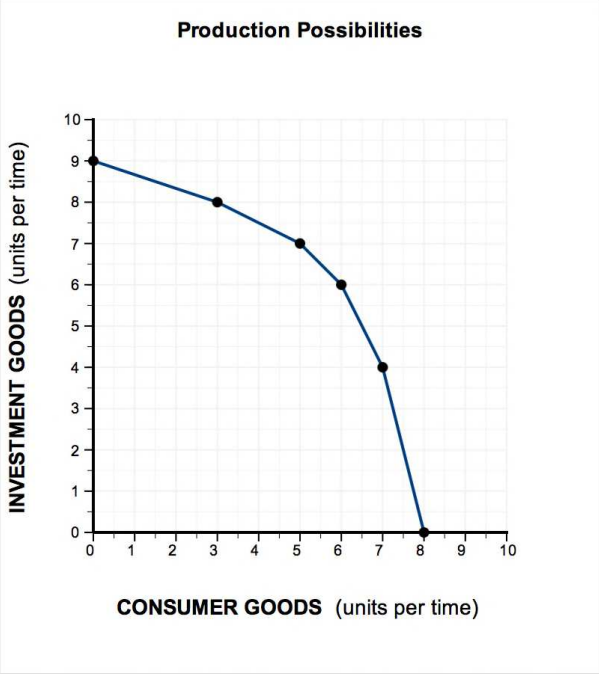
10. **POLICY PERSPECTIVES** What can poor nations do to raise their living standards? **(LO 2-3)**

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Answer: This is a complicated issue. A few of the things that poor nations can do to raise their living standards include increasing their investment/consumption ratio, investing in human capital, and reducing illiteracy. Many believe that poor nations will need the assistance of the rich nations of the world to achieve this goal.

PROBLEMS

1. Use the figure below to answer the following questions.
   (a) What is the opportunity cost of increasing investment from 6 units to 8 units?
   (b) What will happen to future production possibilities if investment increases now?
   (c) What will happen to future production possibilities if only consumer goods are produced now? **(LO 2-1)**



Answers:
(a) 3 units of consumer goods
(b) production possibilities will increase, shifting the ppc to the right
(c) production possibilities will decrease, shifting the ppc to the left

Explanation:
(a) The opportunity cost of increasing investment is the loss of consumer goods. Specifically, when investment goods increase from 6 to 8, consumer goods decrease from 6 to 3, a decrease of 3 units.

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(b) Investment goods include the plant, machinery, and equipment that are produced for use in the business sector. The economic growth that has lifted our living standards so high was fueled by past investments—the factories, telecommunications networks, and transportation systems built in the past. If investment increases it will improve our stock of capital and will expand our production possibilities, causing our curve to shift outward (that is, increase). This requires us to limit our production of consumer goods (that is, save) so scarce resources can be used for investment.
(c) Consumer goods include everything consumers buy. If only consumer goods are produced, equipment and factories (for example) will not be replaced and production possibilities will diminish leading to a shift to the left in the curve.

LO 02-01
Topic: What America Produces
AACSB: Analytic
Blooms: Level 4 Analyze

2. Suppose the following data describe output in two different years:

Item	**Year 1**	**Year 2**
Apples	20,000 @ $0.25 each	30,000 @ $0.30 each
Bicycles	700 @ $800 each	650 @ $900 each
Movie rentals	10,000 @ $1.00 each	12,000 @ $1.50 each

(a) Compute *nominal* GDP in each year.
(b) By what percentage did nominal GDP change between Year 1 and Year 2?
(c) Now compute *real* GDP in Year 2 by using the prices of Year 1.
(d) By what percentage did real GDP change between Year 1 and Year 2? **(LO 2-1)**

Answers:
(a) Year 1 = $575,000 Year 2 = $612,000
(b) Nominal GDP increased by 6.4%
(c) $539,500
(d) Real GDP decreased by 6.2%

Explanation:

a. Nominal GDP is the value of output measured in current prices.

Nominal GDP			
Year 1 = (year 1 output) × (year 1 prices)			
Apples	20,000 × $0.25	=	$5,000
Bicycles	700 × $800	=	$560,000

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Movie rentals	10,000 × $1.00	=	$10,000
GDP			**$575,000**
Year 2 = (year 2 output) × (year 2 prices)			
Apples	30,000 × $0.30	=	$9,000
Bicycles	650 × $900	=	$585,000
Movie rentals	12,000 × $1.50	=	$18,000
GDP			**$612,000**

b. From Year 1 to Year 2, GDP increased by $37,000. Using the percentage change formula = [(new value – original value)/original value] × 100, this is a 6.4% increase (= [($612,000 – $575,000)/$575,000] × 100 = 6.4%).

c. Real GDP is the inflation-adjusted value of GDP: the value of output measured in constant prices.

Real GDP			
Real GDP Year 2 = (year 2 output) × (year 1 prices)			
Apples	30,000 × $0.25	=	$7,500
Bicycles	650 × $800	=	$520,000
Movie rentals	12,000 × $1.00	=	$12,000
GDP			**$539,500**

d. Real GDP in Year 1 is equal to nominal GDP in Year 1, so real GDP in Year 1 is $575,000. In Year 2, it is $539,500, a decrease of $35,500. Using the percentage change formula = [(new value – original value)/original value] × 100, this represents a decline of 6.2% [(539,500 – 575,000)/575,000] × 100 = 6.2%.

LO 02-01
Topic: What America Produces
AACSB: Analytic
Blooms: Level 4 Analyze

3. GDP per capita in the United States was approximately $55,000 in 2015. Use the growth formula to answer the following questions:
(a) What will it be in the year 2020 if GDP per capita grows each year by 0 percent?
(b) What will it be in the year 2020 if GDP per capita grows each year by 2 percent?
(LO 2-1)
Growth Formula: (future value) = (present value)$\times(1 + r)^t$
present value = this year's GDP per capita
future value = GDP per capita in the future
r = the rate of increase = % growth per year

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^{t} = number of years of growth

Answers:
(a) GDP in 2020: $55,000
(b) GDP in 2020: $60,720

Explanation:
Growth Formula: (future value) = (present value) × $(1 + r)^t$, where present value = this year's GDP per capita, future value = GDP per capita in the future, r = the rate of increase = % growth per year, and t = number of years of growth.
a. GDP per capita will remain the same (= $55,000) in 2020 if the GDP per capita growth rate is 0%.

GDP per capita in 2020 = (GDP per capita in 2015) × $(1 + r)^t$. (Note there are 5 years of growth between 2015 and 2020, the growth rate is 0%, and GDP per capita in 2015 is $55,000.)

GDP per capita in 2020 = ($55,000) × $(1 + 0)^5$

GDP per capita in 2020 = ($55,000) × (1)

GDP per capita in 2020 = $55,000

b. GDP per capita will increase to $60,720 in 2020 if the GDP per capita growth rate is 2%.

GDP per capita in 2020 = (GDP per capita in 2015) × $(1 + r)^t$. (Note there are 5 years of growth between 2015 and 2020, the growth rate is 2%, and GDP per capita in 2015 is $55,000.)

GDP per capita in 2020 = ($55,000) × $(1 + 0.02)^5$

GDP per capita in 2020 = ($55,000) × $(1.02)^5$

LO 03-01

Topic: What America Produces
AACSB: Analytic
Blooms: Level 3 Apply

4. According to Figure 2.4
(a) Did the quantity of manufactured output increase or decrease between 1900 and 2000?
(b) By how much (in percentage terms)?
(c) Did the manufacturing share of GDP rise or fall during this time? **(LO 2-4)**

Answers:
(a) increase
(b) 1082%
(c) fall

Explanation:
(a) Technological advances have made it possible to increase manufacturing output tremendously. According to the figure, in the twentieth century, the total output of

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the U.S. economy increased thirteenfold while the percentage of the total output decreased from 22% to 20%. This means that although the share of total output going to manufacturing fell, the huge increase in total output resulted in an increase in the quantity of manufacturing.
Suppose total output in 1900 equaled $100. Manufacturing would then equal $22 (= $100 × 22%). If total output increased thirteenfold, total output in 2000 would equal $1,300. Manufacturing would then equal $260 (= $1,300 × 20%).
(b) Using the example from part a, we can calculate that manufacturing increased by 1,082%.
From part a: Suppose total output in 1900 equaled $100. Manufacturing would then equal $22 (= $100 × 22%). If total output increased thirteenfold, total output in 2000 would equal $1,300. Manufacturing would then equal $260 (= $1,300 × 20%). We can then calculate the percentage increase in manufacturing output. Use the percentage change formula: [(new value – original value)/original value] × 100. This is a 1,082% increase (= [($260 – $22)/$22] × 100 = 1,082%).
(c) According to the figure, the share fell from 22% to 20% of total output over the last 100 years.

LO 02-04
Topic: The Mix of Output
AACSB: Analytic
Blooms: Level 4 Analyze

5. Assume that total output is determined by the formula:

   total output = number of workers x productivity

   (a) If the workforce is growing by 1 percent a year but productivity doesn't improve, how fast can output increase?
   (b) If productivity increases by 3 percent and the number of workers increases by 1 percent a year, how fast will output grow? **(LO 2-3)**

   Answer:
   (a) 1 percent
   (b) 4 percent

   Explanation:
   To answer this question, it can be useful to make up an example. Let's assume the following for our economy:
   number of workers = 100
   productivity = 100
   Therefore, total output is (number of workers) × (productivity) = (100) × (100) = 10,000.

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a. If the workforce grows by 1 percent (from 100 workers to 101 workers) and output doesn't change, then output can increase by:

total output = (number of workers) × (productivity) = (101) × (100) = 10,100.

Using the percentage change formula = [(new value – original value)/original value] × 100, the percentage change in output is [(10,100 – 10,000)/(10,000)] × 100 = 1%. Therefore, output can increase by 1 percent.

b. If productivity increases by 3 percent (from 100 to 103) and the number of workers increases by 1 percent a year (from 100 workers to 101 workers), then output can increase by:

total output = (number of workers) × (productivity) = (101) × (103) = 10,403.

Using the percentage change formula = [(new value – original value)/original value] × 100, the percentage change in output is [(10,403 – 10,000)/(10,000)] × 100 = 4.03%. Therefore, output can increase by approximately 4 percent.

LO 02-03

Topic: How America Produces

AACSB: Analytic

Blooms: Level 3 Apply

6. According to the News Wire "Manufacturing: Fewer Jobs, More Output," since 1975 in the manufacturing sector, (a) has output increased or decreased? (b) has employment increased or decreased? (c) has productivity increased or decreased? **(LO 2-3)**

Answer:

(a) Output has increased

(b) Employment has decreased

(c) Productivity has increased

Explanation:

According to the article, manufacturing output has increased by more than double, manufacturing employment has decreased by 31%, and manufacturing productivity has increased by more than three times.

LO 02-03

Topic: How America Produces

AACSB: Analytic

Blooms: Level 2 Understand

7. According to Table 2.4,

(a) What is the average income in the United States?

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(b) What percentage of the income of people in the highest fifth would have to be taxed away to bring them down to that average? **(LO 2-5)**

Answer:
(a) $75,738
(b) 61%

Explanation:
(a) The average income in the United States is $72,641. To calculate this national average, you sum the averages of each fifth of the households and then divide by 5.

= ($194,053 + $87,934+ $54,041 + $31,087 + $11,676)/5 = $75,738

(b) The highest fifth of the U.S. population earns $185,206 on average. To bring this average income down to the national average income of $72,641, the tax must equal $112,565 (in other words, $112,565 must be "taxed away").

= $194,053 – $75,738 = $118,315

Using the percentage change formula, this represents a 61% decrease in household income.

= [(new value – original value)/(original value)] × 100

= [($75,738 – $194,053)/($194,053)] × 100

= [–$118,315/$194,053] × 100

= 61% decrease

LO 02-05
Topic: For Whom America Produces
AACSB: Analytic
Blooms: Level 3 Apply

8. According to the News Wire “Inequality,” what is the average per capita income in nations where the highest-income decile gets (a) over 45 percent of total income? (b) less than 30 percent of total income? **(LO 2-5)**

Answer:
(a) $ 8,580
(b) $ 39,998

Explanation:

(a) The average per capita income in nations listed in the table where the highest income gets over 45% of total income is $8,580. Of the countries listed, South Africa, Namibia, Botswana, Haiti, and Zambia fit this criteria. To calculate the average per capita income of these 5 countries, we add their average per capita income and then divide by 5.

= ($12,240 + $9,490 + $15,640 + $1,720 + $3,810)/5 = $8,580

(b) The average per capita income in nations listed in the table where the highest income is less than 30% of total income is $39,998. Of the countries listed, Great Britain, Spain, Australia, and Sweden fit this criteria. To calculate the average per capita income of these 4 countries, we add their average per capita income and then divide by 4.

= ($38,160 + $32,700 + $42,450 + $46,680)/4 = $39,998

LO 02-05
Topic: For Whom America Produces
AACSB: Analytic
Blooms: Level 5 Evaluate

9. Complete the following table:

	Before Tax Income	Tax Rate	Tax Paid	After Tax Income
High-income Family	$500,000	39.6%	$198,000	$302,000
Middle-income Family	$ 50,000	20%	$ 10,000	$ 40,000
Low-income Family	$ 20,000	10%	$ 2,000	$ 18,000

What is the ratio of a high-income family's income to a low-income family's income?
(a) Before taxes?
(b) After taxes?
(c) Is this tax progressive? **(LO 2-5)**

Answers:
(a) 25:1
(b) 16.8:1
(c) Yes

Explanation:
To complete the table:

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The tax paid by a high-income family equals $198,000 = (before-tax income) × (tax rate) = ($500,000) × (0.396). The after-tax income equals $302,000 = (before-tax income) – (tax paid) = $500,000 – $198,000.

The middle-income family pays a tax of $10,000 = (before-tax income) × (tax rate) = ($50,000) × (0.20). The after-tax income equals $40,000 = (before-tax income) – (tax paid) = $50,000 – $10,000.

The low-income family pays a tax of $2,000 = (before-tax income) × (tax rate) = ($20,000) × (0.10). The after-tax income equals $18,000 = (before-tax income) – (tax paid) = $20,000 – $2,000.

(a) The before-tax ratio of a high-income family to a low-income family is 25 = (high-income before-tax income)/(low-income before-tax income) = $500,000/$20,000.

(b) The after-tax ratio of a high-income family to a low-income family is 16.8 = (high-income after-tax income)/(low-income after-tax income) = $302,000/$18,000.

(c) There are a couple of different ways to determine if a tax is progressive. First, a tax system in which tax rates rise as incomes rise is a progressive tax system. In this example, higher incomes are taxed at a higher rate (low income is taxed at 10%, middle income is taxed at 20%, and high income is taxed at 39.6%). Second, a progressive tax makes after-tax incomes more equal than before-tax incomes. We can see this by comparing the before- and after-tax ratios. In this example, since the after-tax ratio is lower, this means the after-tax incomes are more equal than the before-tax incomes.

LO 02-05
Topic: For Whom America Produces
AACSB: Analytic
Blooms: Level 3 Apply

10. In 2015, the United States devoted about 0.19 percent of its $18 trillion GDP to development assistance. **(LO 2-2)**
(a) How much money is that?
(b) How much aid does that imply for each of the 3 billion “extremely poor” people in developing nations?

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Answers:
(a) $34.2 Billion
(b) $11.40 per person

Explanation:

(a) If the United States devotes 0.19 percent of its $18 trillion GDP to development assistance, this is equal to $34.2 billion going to development assistance. Remember that $18 trillion equals $18,000 billion.

= (GDP) × (% devoted to development assistance) = ($18 trillion) × (0.19%) = ($18,000 billion) × (0.0019) = $34.2 billion

(b) This $34.2 billion is approximately $11.40 in aid for each of the 3 billion "extremely poor" people in the developing nations.

= (development assistance)/(extremely poor) = ($34.2 billion)/(3 billion) = $11.40 in aid on average per extremely poor person

LO 02-02
Topic: What America Produces
AACSB: Analytic
Blooms: Level 2 Understand

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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 "Manufacturing: Fewer Jobs, More Output"
- One News Wire on "Human Capital"
- Three New Problems

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.

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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!**

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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 three News Wire boxes. Their titles and the concepts they illustrate are:

"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. Percentage of School-Age Youth attending Secondary Schools is 44 percent in Low-Income countries, 74 percent in Middle-Income countries and 100 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.

"Inequality" (Income Share of the Rich)

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Incomes are distributed less equally in poor countries than rich countries. In developing countries the top tenth of all households often receive 40-50 percent of all income. In the United States and other developed countries inequality is 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 in a country during 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.
   Real GDP: The inflation-adjusted value of GDP; the value of output measured in constant prices.
   a. Table 2.2 offers an example of how to calculate nominal and real GDP.
   b. GDP has shortcomings in that either prices or an increase in physical output can cause GDP to increase.
   c. Inflation adjustments delete the effects of rising prices by valuing output in constant dollars.
   d. In 2015 the U.S. economy produced $18 trillion of output.
4. **International Comparisons** (Figure 2.1)
   a. Total world output in 2015 was about $90 trillion.
   b. The U.S. economy produces roughly 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 fourteen 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)

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Definition: **Per Capita GDP:** Total GDP divided by total population: average GDP.

a. In 2015, per capita GDP in the United States was approximately $55,000—more than four times the world average.
b. Per capita GDP is simply an indicator of how much output the average person would get if all output were divided evenly among the population
c. 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 2008–2012, output per capita declined in many nations, such as in Venezuela, Madagascar, the Ivory Coast, 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. **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
   a. More than two-thirds of U.S. total output is consumer goods.
   b. Three types
      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.

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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 Goods:** Expenditures on (production of) new plant 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.

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 20 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, such as, Social Security, welfare, unemployment benefits.

d. Only that part of federal spending used to acquire resources and produce services is counted in GDP.

e. In 2015, 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 2015, net exports were negative 4 percent (Figure 2.2).

7. **Changing Industry Structure** (Figure 2.4)

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a. The volume of output has been growing over time. 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.

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II. HOW America Produces

A. Factors of Production

Definition: **Factors of Production:** Resource inputs used to produce goods and services such as, land, labor, capital, 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 less than two-thirds of America's output.
   e. **Capital stock**
      i. U.S. capital stock is more than $80 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.
2. **Factor Quality**
   a. **Productivity**
   Definition: **Productivity:** Output per unit of input, such as output per labor hour.
   b. **Human Capital**
   Definition: **Human Capital:** The knowledge and skills possessed by the workforce.
   c. The high productivity of the U.S. economy results from using highly educated workers in capital-intensive production processes.
   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.

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b. In 1974, Federal Express, Apple Computer, Microsoft, Amgen, and Oracle didn't exist. Google and Yahoo! didn't exist in 1995; in 2003 Facebook was still a concept, not an operational networking site. Today, these companies collectively employ 600,000 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.
   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.

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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:** Costs (or benefits) of a market activity borne by a third party: The difference between the social and private cost (or benefits) of a market activity.
   d. Now, 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)

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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: "Inequality" (Income share of the Rich)**
   Incomes are 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.
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.

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—more than $800 billion a year to 60 million people.
   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. Nearly 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.

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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.

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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 Indicator at http://hdr.undp.org/en/statistics/.

Based on this information, prepare a list of reasons:

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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.

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WEB ACTIVITIES to accompany this chapter can be found in the Instructor's Resources section of Connect.

Chapter 2 Web Activities

1. Go to the Interactive Access to National Income and Product Accounts (NIPA) Tables at the Bureau of Economic Analysis website, found here:
   www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1
   Click on "Domestic Product and Income" and find Table 1.1.6, "Real Gross Domestic Product, Chained Dollars." Use the Data Table Options to choose the years and frequency (use "Annual" under "OPTIONS") for the data you want to view.
   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.

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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 www.usda.gov . Click on "More…" to see the "Laws and Regulations" section. Then, click on "Food Labeling and Packaging" and "Labeling Procedures." Go to http://www.fsis.usda.gov/OPPDE/larc/Policies/Labeling_Policy_Book_082005.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 on a food label that you want to put on it! Answer the questions below.
   a. If a package of sausage claims that it is "country style" sausage, what does this mean? What rules govern bacon packaging?
   b. What are the four criteria under which a "non-complying" (incorrect) label might be granted temporary approval?
   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 Web Activities

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

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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%

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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 Housing Units with Mortgages)	$4,583	$2,506	$4,352
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. Country sausage must have been prepared in the country, and it must not contain any cereal. Bacon packaging must have a transparent opening so that buyers can view the cut surface of a slice of bacon.

b. A non-complying label can be approved if it is not misleading, if it doesn't pose a health problem, if the approval does not give an unfair competitive advantage, and if denial of the approval would cause undue economic hardship.

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 sausage and bacon 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.

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MEDIA EXERCISE

Name: _____

Chapter 2

Section: _____

The U.S. Economy

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. Mount a copy (do not cut up newspapers or magazines) of the article on a letter-sized page or print an article from an Internet news agency such as www.cnn.com, www.msnbc.com, www.abc.com, 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.

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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

Heintz, James. 2000. *The Ultimate Field Guide to the U.S. Economy: A Compact and Irreverent Guide to Economic Life in America.* New Press.

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Stein, H., and Murry Foss. 1992. *An Illustrated Guide to the American Economy: A Hundred Key Issues*, American Enterprise Institute, Washington, D.C.

U.S. Government Printing Office, 2007. "Budget of the United States Government: Citizen's Guide to the Federal Budget" Washington, D.C. Web accessed at: http://www.gpo.gov/fdsys/browse/collectionGPO.action?collectionCode=BUDGET. Full coverage of the Clinton budgets and Fiscal Years 1996–2002. This material gives information on the general revenue and spending categories, on and off budget items, and other accessible analysis of the budgets.

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CHAPTER 2

The U.S. Economy

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

1. Explain how an economy's size is measured.
2. Describe the absolute and relative size of the U.S. economy.
3. Explain why the U.S. economy can produce so much.
4. Recount how the mix of U.S. output has changed over time.
5. Describe how (un)equally incomes are distributed .

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CHAPTER 2

The goal of this chapter is to understand how the three basic economic questions are answered in the US.

Meaningful summaries of the US economy require adding up millions of different products.

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GROSS DOMESTIC PRODUCT

An overall summary of WHAT the US produces is Gross Domestic Product (GDP).

- ***GDP*** is the total value of final goods and services produced in a country in a given time period.
- ***Value*** is found by multiplying the physical output of each good by its price.

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GROSS DOMESTIC PRODUCT

There are two measures of output.

- ***Nominal GDP (NGDP)*** is the value of output measured in *current* prices.
- ***Real GDP (RGDP)*** is the value of output measured in constant prices.
- Because of inflation, only ***Real GDP*** can be used to compare output from one year to another.

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GROSS DOMESTIC PRODUCT

The value of output changes significant if it is measured in current or constant prices.

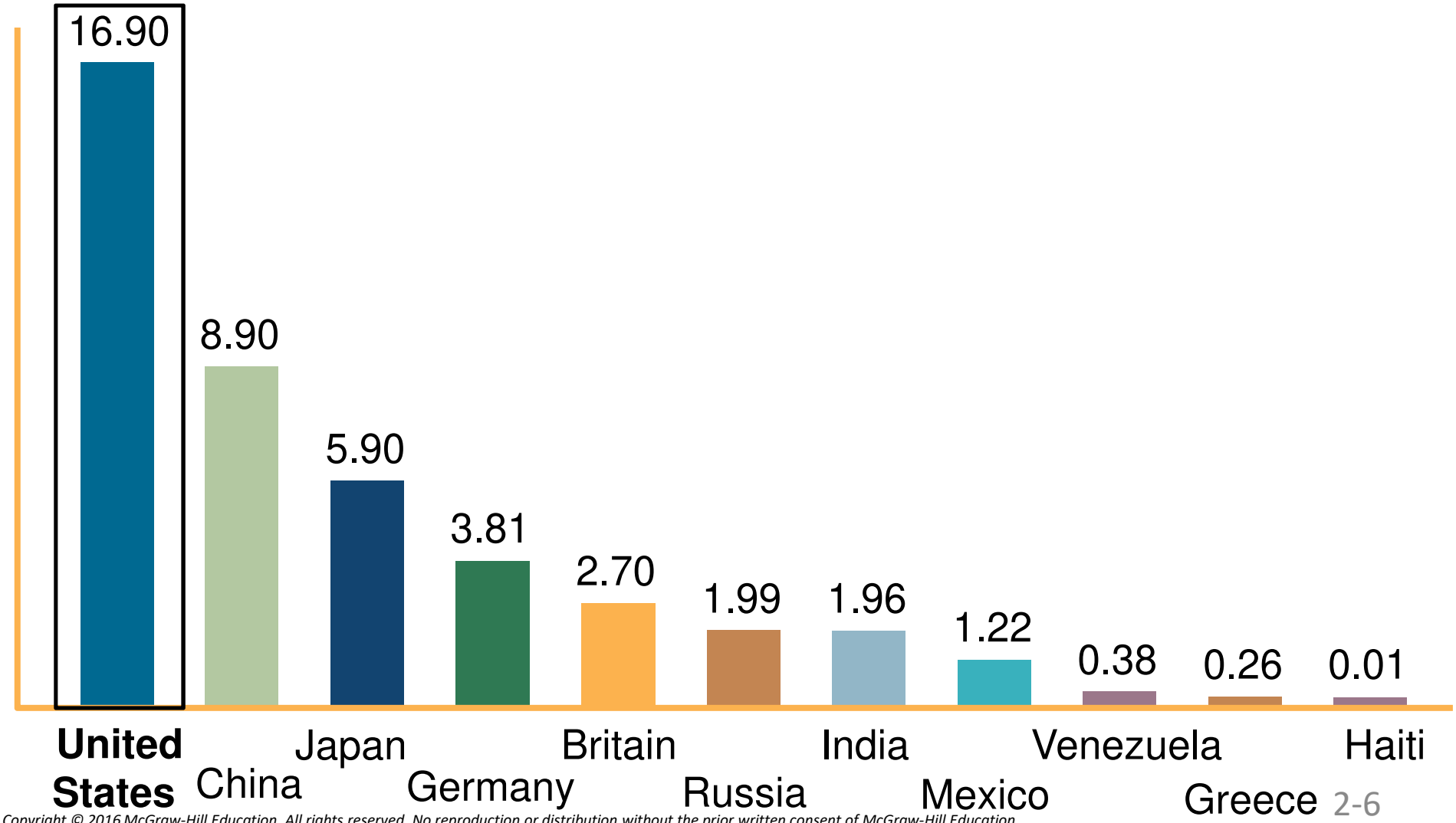
	Output (in billions)	Prices (in dollars)		Value of Output (in billions of dollars)	
Product	Year 2	Year 1	Year 2	Year 2 NGDP (current prices)	Year 2 RGDP (constant prices)
Oranges	6	$0.20	$0.40	$2.4	$1.2
Razors	3	$0.30	$0.60	1.8	0.9
Video games	0.07	$30	$60	4.2	2.1
				$8.4	**$4.2**

- ***Real GDP*** is the inflation-adjusted value of GDP.
- Doubling prices doubles ***NGDP***, but not ***RGDP***.

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INTERNATIONAL COMPARISONS

Various countries GDP *(in U.S. $ trillion)*



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INTERNATIONAL COMPARISONS

Because populations vary, a useful measure is per capita GDP.

$$\textit{Per capita GDP} = \frac{Total\ GDP}{Total\ Population}$$

- Indicates how much output each person would get if all output were divided evenly among the population.

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INTERNATIONAL COMPARISON

The US per capita income is four times higher than the world average.

	Per Capita Income
United States	$48,820
France	$35,910
Japan	$35,330
Spain	$31,400
Greece	$25,100
Mexico	$15,390
World average	$11,549
China	$8,390
Ethiopia	$1,110

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HISTORICAL COMPARISONS

US Real GDP increases by about 3% per year, causing persistent economic growth.

- ***Economic growth*** is an increase in output (real GDP).
- Economic growth permits higher standards of living and social welfare for many.

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SOCIAL WELFARE

GDP is the single best measure of a nation's economic well-being.

- Production is one element of ***collective well-being***.
- Material possessions do not substitute for health, justice, security, and other dimensions of well-being.
- More output will improve social welfare.

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THE MIX OF OUTPUT

The content of output can be measured by end use.

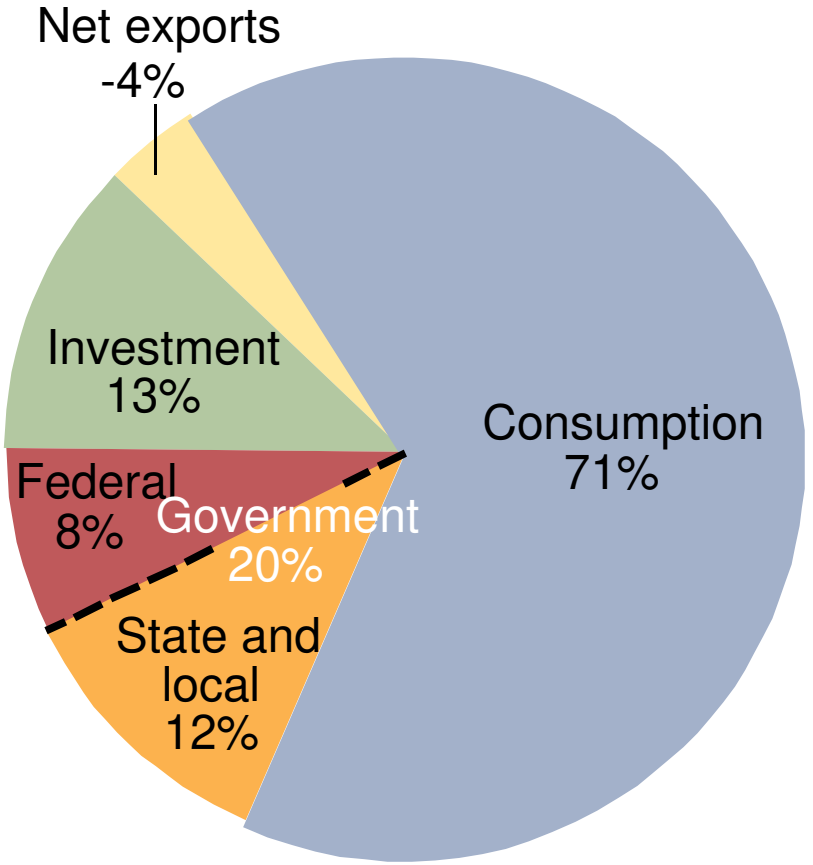
GDP

- **Consumption (C)**: Expenditures by consumers.
- **Investment (I)**: Expenditures on new plants and equipment + inventories.
- **Government (G)**: Federal, state, and local government expenditures (excludes transfers).
- **Net Exports**: Exports minus Imports.

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THE MIX OF OUTPUT

The biggest slice of the US economy is <u>consumption</u>.



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CHANGING INDUSTRY STRUCTURE

Structural change to the US economy has occurred over 150 years.

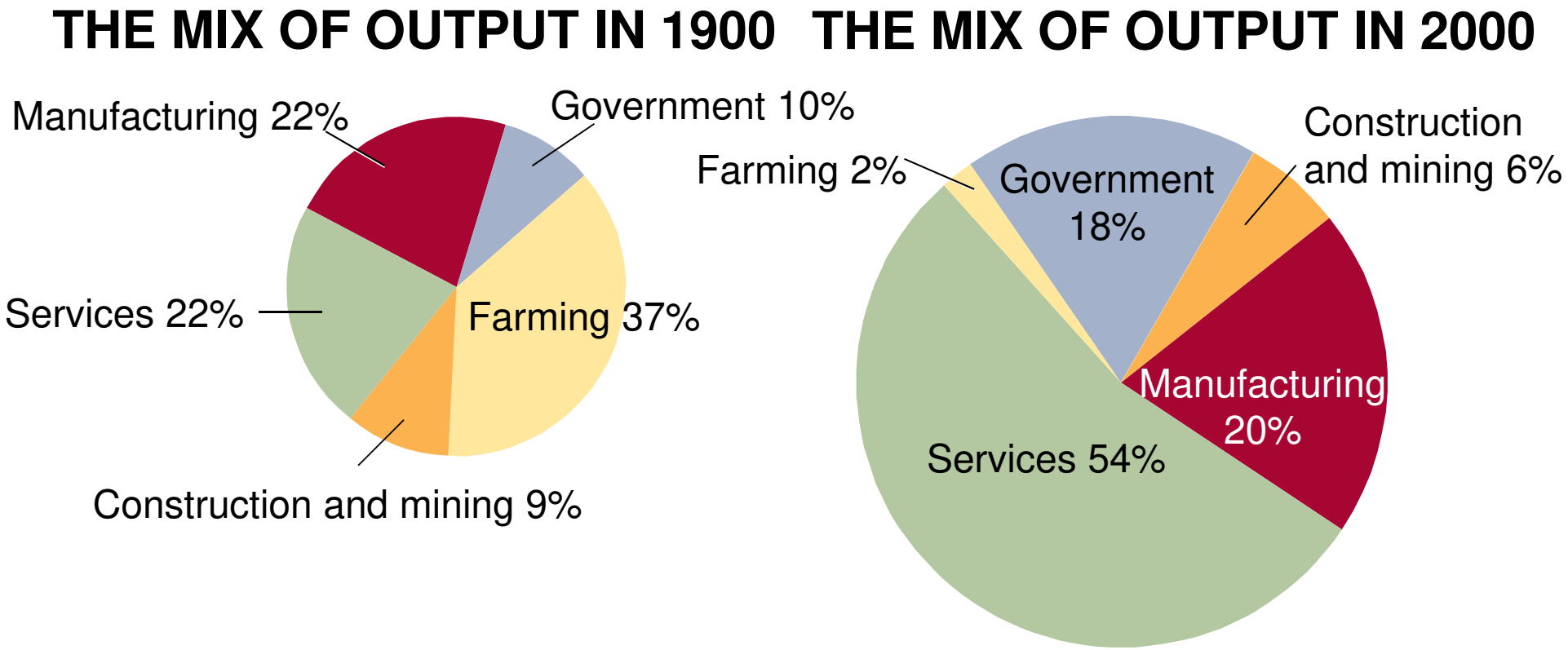
1. Substantial technological progress.
   A. Agriculture.
   B. Manufacturing.
2. Employment shift to service.
   A. Agriculture to manufacturing.
   B. Manufacturing to service.
3. Expansion of international trade.

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CHANGING INDUSTRY STRUCTURE

As the economy grows, the mix of output changes dramatically.



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HOW AMERICA PRODUCES

HOW the US produces goods and services has changed over time.

- US has an abundance of ***factors of production*** which determine production possibility.
- Increased international trade has expanded US production possibility.
- Ability to change production processes is directly related to ***factor mobility***.

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CAPITAL STOCK

The substantial productivity of the U.S. economy is explained by the use of a highly educated workers in capital-intensive production processes.

- ***Capital intensive*** production processes requires a high ratio of capital to labor inputs.

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PRIVATE SECTOR

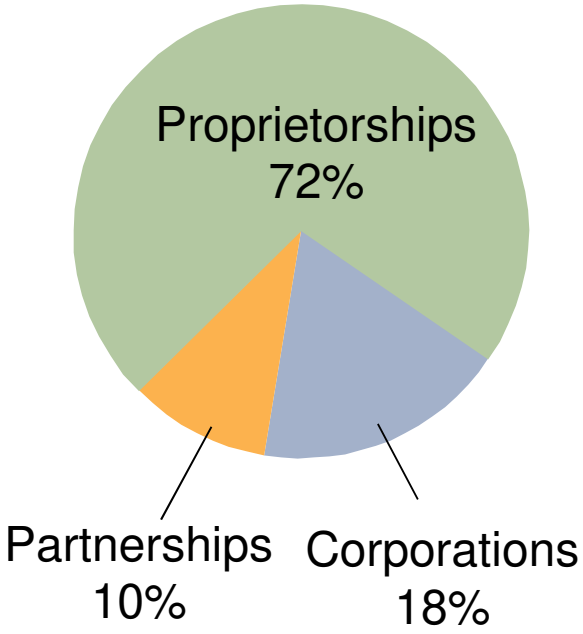
The factors of production are organized and reallocated by businesses.

- ***Corporations*** are owned by many individuals.
- ***Partnerships*** are owned by a small number of individuals.
- ***Proprietorships*** are owned by one individual.

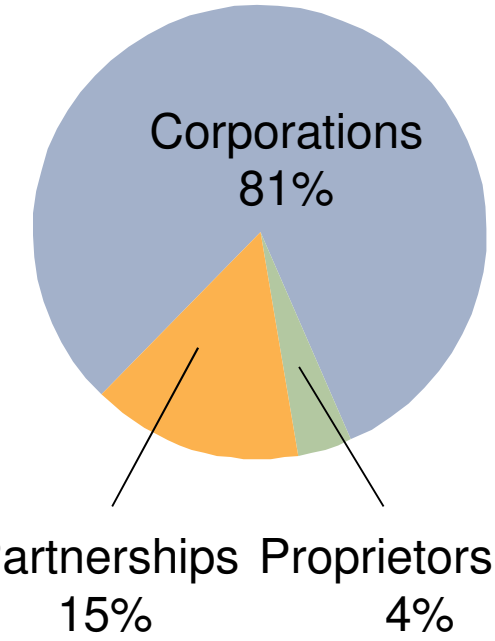
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PRIVATE SECTOR

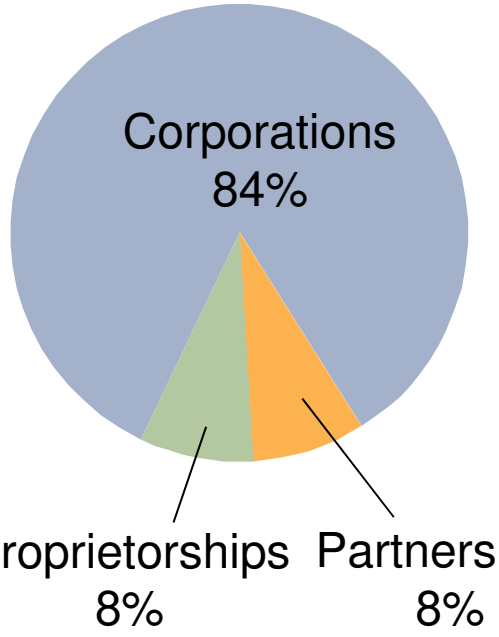
NUMBER OF FIRMS



SHARE OF TOTAL SALES



SHARE OF TOTAL SETS



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THE GOVERNMENT'S ROLE

The government plays a large role in deciding WHAT, HOW, and FOR WHOM goods are produced by:

- Providing legal framework.
- Protecting consumers.
- Protecting labor.
- Protecting the environment.

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THE GOVERNMENT'S ROLE

The government lays the foundation for market transactions by establishing and enforcing:

- Ownership rights
- Contract rights
- Other rules of the game

- Prevents businesses from becoming too powerful and regulates the safety of products.

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THE GOVERNMENT'S ROLE

- Establishes labor laws regard:
  - Entry into the workforce.
  - Workplace safety.
  - Number of hours one can work.
  - Compensation.
- Establishes regulations that limits air, water, and noise pollution. In addition, it regulates environmental use of resources.

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STRIKING A BALANCE

Government intervention are designed to change HOW goods and services are produced.

- ***Government failure*** might replace ***market failure***, inhibiting production, raising product prices, and limiting consumer choice.

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FOR WHOM AMERICA PRODUCES

The final question is HOW American production is divided.

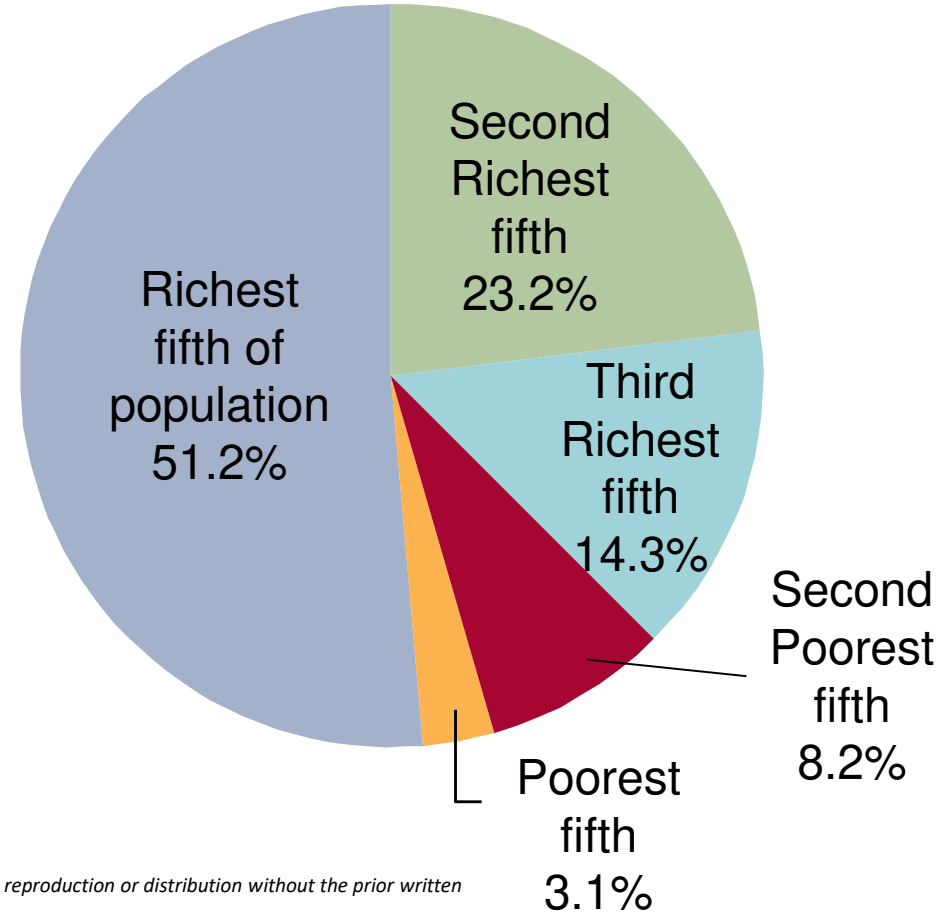
- In a ***market economy***, an individual's income depends on:
  - Quantity and quality of resources owned.
  - Price those resources command.
- In a ***command economy***, the government decides an individual's allocation.

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FOR WHOM AMERICA PRODUCES

The biggest slice of the US economy is to the richest fifth of the population.



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THE DISTRIBUTION OF INCOME

As countries develop, the personal distribution of income tends to become more equal.

- ***Personal distribution of income*** is the way total personal income is divided up among households or income classes.

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THE DISTRIBUTION OF INCOME

While the rich have the biggest incomes, their composition changes over time.

- *Permanent* inequality is more the exception than the rule in the U.S. economy.
- One of the most distinctive features of the US income distribution is how often people's income changes.
  - Referred to as ***income mobility***.

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THE DISTRIBUTION OF INCOME

Often individuals feel that the income distribution is unfair.

- Governments can redistribute incomes through taxes and transfers.
- ***Progressive taxes*** sets tax rates higher as incomes rise.
- The federal income tax is designed to be progressive.

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INCOME TRANSFERS

The government can transfer tax revenue to the poor.

- The largest US transfer program is Social Security benefits.
- Raises poor household's share of income from 1% to 3.2%.

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CAN WE END POVERTY?

The poorest US residents have higher living standards than 3 billion inhabitants of Earth who live on $3 per day.

- In September 2000, the United States adopted the Millennium Declaration to reduce global poverty over a 15 year period.
- There has been some success, but only persistent economic growth can end global poverty.

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SUMMARY

- We explained how an economy's size is measured using ***Real GDP*** and ***Nominal GDP***.
- We described the absolute and relative size of the U.S. economy.
- We explained why the US economy can produce so much.
- We recounted how the mix of US output has changed over time.
- We described how (un)equally incomes are distributed.

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