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Solutions

Chapter 2: The U.S. Economy: A Global View
Solutions Manual

Learning Objectives for Chapter 2

After reading this chapter, you should know
LO 02-01. The relative size of the U.S. economy.
LO 02-02. How the U.S. output mix has changed over time.
LO 02-03. How the U.S. is able to produce so much output.
LO 02-04. How incomes are distributed in the United States and elsewhere.

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 02-01)**

   Answer: As long as people want more than they have, scarcity exists. If we are interested in increasing our standard of living, then we should consider producing more. Of course, one of the issues we face is that we often measure our standard of living by how much we consume. If, as a society, we decide that the quality of life is not measured by how much we consume, but rather how well we consume what we have, then perhaps we should not produce more. Instead it is conceivable that we can work less and enjoy life more, thus maximizing our total level of satisfaction.

2. Why is per capita GDP so much higher in the United States than in Mexico? **(LO 02-03)**

   Answer: GDP per capita is calculated as GDP/population. Even though the population of the United States is larger than Mexico's population, the U.S. GDP is much larger than Mexico's. Thus GDP per capita is higher in the United States. This is due in large part to the greater use of capital in the U.S. production processes, resulting in higher productivity and output.

3. Can we continue to produce more output every year? Is there a limit? **(LO 02-03)**

   Answer: Our ability to produce output is determined by our resources, our capital investment, our technology, and our human capital investment. To be able to produce more output every year, one or several of these factors need to increase every year. The strength of the U.S. economy has historically improved based on our robust capital investment, our high level of human capital investment, and continual improvements to technology. Given that there are always potential technological improvements and capital investments, there is no reason to believe that we cannot continually improve our productive capabilities.

4. The U.S. farm population has shrunk by over 25 million people since 1900. Where did all the people go? Why did they move? (**LO 02-02)**

   Answer: At one time, farms were relatively small because farming was extremely labor-intensive. Consequently there were many farms and many people working on farms. Often farm families were quite large in order to provide a "free" labor force. Changes in farm technology, like the invention of the tractor, combine, fertilizer, and the like, allowed farmers to work more acres while using less labor. Many farmworkers moved to cities, where factories paid higher wages, and the size of farm families decreased, in part, because less labor was needed.

5. Is the relative decline in U.S. farming and manufacturing (Figure 2.2) a good thing or a bad thing? (**LO 02-02)**

   Answer: The relative decline in farming and manufacturing doesn't mean that we're producing fewer goods today than in earlier decades. In fact, certain industries such as chemicals, publishing, and telecommunications equipment have grown substantially. The result is that manufacturing output has actually increased fourfold since 1950. This same type of growth has occurred in the farm sector. Thus the relative decline in U.S. farming and manufacturing simply implies that our service production has increased at a much faster rate. All three sectors are growing substantially.

6. How many people are employed by your local or state government? What do they produce? What is the opportunity cost of that output? (**LO 02-01)**

   Answer: Answers to this question vary according to your area. In many cities, the government provides such items as public schools, police protection, fire protection, parks, and golf courses. The opportunity cost is the next best alternative use of these resources. For example, the public golf course could be turned into a pasture for cattle, a racetrack, or a housing development.

7. Where do growing companies like Google and Facebook get their employees? What were those workers doing before? (**LO 02-02)**

   Answer: In 1940 only 1 out of 20 young Americans graduated from college; today over 30 percent of young people are college graduates. Companies such as Google and Facebook are hiring these increasing numbers of college graduates. Moreover, our ability to produce the goods and services that consumers demand is due, in large part, to our agility in reallocating resources from one industry to another. Each year some industries expand while others contract. Therefore, workers are leaving firms that are closing and downsizing, and they are moving to growing companies such as Google and Facebook.

8. Should the government try to equalize incomes more by raising taxes on the rich and giving more money to the poor? How might such redistribution affect total output and growth? (**LO 02-04)**

   Answer: The answer to this question depends on your concept of equity. Some people believe the current distribution of income is unfair: the rich are too rich and the poor are too poor. A market-based system operates on incentives communicated through prices in the markets. People who produce more are, in general, likely to be paid more. Imagine for a moment sitting and doing nothing at work while your coworker works hard and produces large quantities of your firm's product. If you are paid the same as that person, it will not take long for that person to also begin doing nothing. Soon the firm will be producing nothing as all workers decide to produce nothing because it pays the same. From a market perspective, equalizing incomes through income transfers is simply a bad idea. From a social perspective, some equalization is appropriate. How much equalization is a good thing continues to be a hot topic for debate.

9. Why are incomes so much more unequal in poor nations than in rich ones? (**LO 02-04)**

   Answer: There are several reasons for this. A major reason is the lack of resources needed for increased productivity—namely capital equipment and basic human necessities such as health care, education, and adequate diet—in poorer nations. Also, the political system may protect the wealthy at the expense of the poor. Another issue is the possibility of a country's population growing faster than its GDP, causing the standard of living to decline.

10. How might free markets help reduce global poverty? How might they impede that goal? (**LO 02-03)**

    Answer: The increased productivity associated with free markets could lead to more jobs and therefore a better standard of living for the population. However, the market system does have market failures, such as inequity, that might improve the standard of living of only part of a country's population.

Problems

1. In 2015 the world's total output (real GDP) was roughly $18 trillion. What percent of this total was produced
   (a) By the three largest economies (World View, p. Comparative Output (GDP))?
   (b) By the three smallest economies in that World View?
   (**LO 02-01)**

   Answers:
   (a) 41.75%.
   (b) 0.9%.

Feedback:
(a) In 2015, the United States produced $18 trillion, China produced $11 trillion, and Japan produced $4.4 trillion. Added together, these three countries produced $33.4 trillion of the world's total output. If the world's total output was roughly $80 trillion, the three largest countries shown in the bar graph produced 41.75% (= $33.4 trillion/$80 trillion) of the world's output.
(b) In contrast, the three smallest economies shown in the bar graph, Haiti ($0.01 trillion), Ethiopia ($0.06 trillion), and Saudi Arabia ($0.65 trillion) produced $0.72 trillion of output in 2015. If the world's total output was roughly $80 trillion, these three countries produced 0.9% (= $0.72 trillion/$80 trillion) of the world's output.

2. According to the World View GDP Per Capita Around the World, how does per capita GDP in the following countries stack up against America's (in percentage terms):
   (a) Canada?
   (b) China?
   (c) Cuba? (**LO 02-01)**

   Answers:
   (a) 84.9%.
   (b) 14.2%.
   (c) 10.7%.

   Feedback: Per capita GDP is an indicator of how much output the average person would get if all output were divided up evenly among the population. Note, however, that even the per capita GDP measure fails to take into account the distribution of income, so it is an imperfect measure of well-being.
   (a) Canada's GDP per capita is $47,540, while U.S. GDP per capita is $55,980. This means that Canada's GDP per capita is 84.9% of U.S. GDP per capita (= $47,540/$55,980).
   (b) China's GDP per capita is $7,930. This means that China's GDP per capita is 14.2% of U.S. GDP per capita (= $7,930/$55,980).
   (c) Cuba's GDP per capita is $6,000. This means that Cuba's GDP per capita is 10.7% of U.S. GDP per capita (= $6,000/$55,980).

   Although the United States does not have the highest GDP per capita in the world, it is true that Americans have access to far more goods and services than do people in most other nations.

3. In 1980, America's GDP per capita was approximately $30,000 (measured in today's dollars). How much higher in percentage terms was America's GDP per capita in 2015 (see World View GDP Per Capita around the World)?

   Answers: 86.6%

Feedback: U.S. GDP per capita was $30,000 in 1980. It was $55,980 in 2015. Thus, GDP per capita in 2015 was 86.6% higher as compared to the GDP per capita in 1980 [= ($55,980 − $30,000) / $30,000 × 100].

4. (a) How much more output does the $20 trillion U.S. economy produce when GDP increases by 1.0 percent?
(b) By how much does this increase the average (per capita) income if the population is 340 million? **(LO 02-03)**

Answers:
(a) $20 trillion.
(b) $588.

Feedback:
(a) The U.S. economy produces an additional $200 billion worth of output when GDP increases by 1.0 percent. Additional GDP = growth rate × current GDP = 0.01 × $20 trillion = $0.20 trillion, or $200 billion.
(b) If the $20 trillion U.S. economy increases by 1 percent, per capita income increases by $588. Additional per capita GDP = additional GDP/population = $200 billion/340 million = $588.

5. According to Table 2.1, how fast does total output (GDP) have to grow in order to raise per capita GDP in **(LO 02-01)**
(a) The United States?
(b) Japan?
(c) Ethiopia?

Answers:
(a) More than 0.9%.
(b) More than 0%.
(c) More than 2.7%.

Feedback:
Per capita GDP is calculated as a nation's total output divided by its total population. In all nations, GDP must grow by more than the growth rate of the population in order for per capita GDP to increase.
(a) Because the population in the United States is growing at an annual rate of 0.9 percent per year on average, GDP must grow by more than 0.9 percent per year for per capita GDP to grow.
(b) Because the population in Japan is growing at an annual rate of 0.0 percent per year on average, GDP must grow by more than 0.0 percent for per capita GDP to grow.
(c) Because the population in Ethiopia is growing at an annual rate of 2.7 percent per year on average, GDP must grow by more than 2.7 percent per year for per capita GDP to grow.

6. (a) If Haiti's per capita GDP of roughly $810 were to DOUBLE every decade, what would Haiti's per capita GDP be in 50 years?
(b) What is U.S. per capita GDP in 2013 (World View, p. 32)? (**LO 02-03)**

Answers:
(a) $25,920.
(b) $53,670.

Feedback:
(a) If Haiti's per capita GDP of roughly $810 were to double every decade for 50 years, it would increase to $1,620 after 10 years, $3,240 after 20 years, $6,480 after 30 years, $12,960 after 40 years, and $25,920 after 50 years.
(b) According to the World View the U.S. per capita GDP in 2013 was $53,670.

7. U.S. real gross domestic product increased from $10 trillion in 2000 to $15 trillion in 2010. During that same decade the share of manufactured goods (e.g., cars, appliances) fell from 16 percent to 12 percent. What was the dollar value of manufactured output
(a) In 2000?
(b) In 2010?
(c) By how much did manufacturing output change? (**LO 02-02)**

Answers:
(a) $1.6 trillion.
(b) $1.8 trillion.
(c) It increased by $0.2 trillion or 12.5%.

Feedback:
(a) $10 trillion × 16% = $1.6 trillion of manufactured output.
(b) $15 trillion × 12% = $1.8 trillion of manufactured output.
(c) The dollar value of the manufactured output increased from $1.6 trillion to $1.8 trillion or a $0.2 trillion increase. The percentage change over this period is (1.8 – 1.6)/1.6 = 0.125, or 12.5%.

8. Using the data in Figure 2.3,
(a) Compute the average income of U.S. households.
(b) If all incomes were equalized by government taxes and transfer payments, how much would the average household in each income quintile gain (via transfers) or lose (via taxes)?
i. Highest fifth.
ii. Second fifth.
iii. Third fifth.
iv. Fourth fifth.
v. Lowest fifth.
(c) What is the implied tax rate (i.e., tax ÷ average income) on the highest quintile?

(**LO 02-04)**
Answers:
(a) $79,300.
(b) i. - $112,700.
ii. - $12,700.
iii. $22,300.
iv. $46,300.
v. $66,800.
(c) 60.7%.

Feedback:
(a)The average income of all U.S. households is the sum of the average income for each income quintile divided by five.
$202,000 + $92,000 + $57,000 + $33,000 + $12,500 = $396,500
$396,500/5 = $79,300
(b)
The quintiles with the highest and second-highest incomes are above the average so they would be taxed to bring their income down to the average. The quintiles with the third-lowest, fourth-lowest, and lowest incomes are below the average so they would receive transfers to bring their income up to the average.
i. The highest quintile (the highest fifth) would lose $122,700 via taxation ($79,300 − $202,000 = −$122,700).
ii. The second fifth would lose $12,700 via taxation ($79,300 − $92,000 = −$12,700).
iii. The third fifth would gain $22,300 via transfers ($79,300 − $57,000 = $22,300).
iv. The fourth fifth would gain $46,300 via transfers ($79,300 − $33,000 = $46,300).
v. The lowest fifth would gain $66,800 via transfers ($79,300 − $12,500 = $66,800).
(c) The implied tax rate is the tax divided by the average income within the quintile. For the highest quintile, where the average income is $202,000 and the amount taxed is $122,700 (determined in b(i) above), the implied tax rate is 60.7% (= $122,700/$202,000 = 0.607, or 60.7%).

9. If 150 million workers produced America's GDP in 2015 (World View, Competitive Output (GDP)), how much output did the average worker produce? (**LO 02-03)**

Answer: $120,000.

Feedback: According to the World View, the United States produced $18 trillion in output (GDP). If 150 million workers produced this output then the average worker produced $120,000 (= $18 trillion/150 million workers).

10. Assuming 2016 per capita GDP growth rate is equal to the average growth rate (2000–2015) provided in Table 2.1, estimate 2016 per capita GDP for each of the following countries using data from World View GDP per Capita around the World. (**LO 02-01)**
    (a) China
    (b) Canada
    (c) Haiti

    Answers:
    (a) $8,707
    (b) $47,968
    (c) $808

    Feedback: The growth in per capita GDP is the current per capita GDP multiplied by (1 + growth rate of per capita GDP).
    (a) China: 2016 per capita GDP = 2015 per capita GDP × (1 + growth rate of per capita GDP) = $7,930 × (1 + 9.8%) = $7,930 × (1 + 0.098) = $7,930 × 1.098 = $8,707
    (b) Canada: 2016 per capita GDP = 2015 per capita GDP × (1 + growth rate of per capita GDP) = $47,540 × (1 + 0.9%) = $47,540 × (1 + 0.009) = $47,540 × 1.009 = $47,968
    (c) Haiti: 2016 per capita GDP = 2015 per capita GDP × (1 + growth rate of per capita GDP) = $810 × (1 + (− 0.3%)) = $810 × (1 + (− 0.003)) = $810 × 0.997 = $808

11. Using data from the Data Tables, calculate (**LO 02-02)**
    (a) the federal government's share of total output in 1996, 2006, and 2016.
    (b) the state and local government's share of total output in 1996, 2006, and 2016.

    Answer:
    (a) 1996: 6.7%; 2006: 7.1%; 2016: 6.7%
    (b) 1996: 11.4%; 2006: 12%; 2016: 10.9%

    Feedback: a. To calculate the share of federal spending of total output, simply divide the federal spending by GDP and then multiply by 100 for percentage terms for each year in question. For example:
    Federal share 2016 = (Federal spending 2016 /GDP 2016) × 100 = ($1,245 billion/$18,569 billion) × 100 = 6.7%
    b. To calculate the share of state and local spending of total output, simply divide the state and local spending by GDP and then multiply by 100 for percentage terms for each year in question.
    State and local share 2016 = (State and local spending 2016 /GDP 2016) × 100 = ($2,032 billion/$18,569 billion) × 100 = 10.9%

12. The Economy Tomorrow How much more output per year will have to be produced in the world just to provide the 3 billion "severely" poor population with $1 more income per day? (**LO 02-01)**

    Answers: $1,095 billion

Feedback: To provide the 3 billion “severely” poor population with $1 more income per day, $1,095 billion must be produced ($1,095 billion per year = 3 billion people × $1 per day × 365 days per year).

Chapter 2

THE U.S. ECONOMY: A GLOBAL VIEW

WHAT IS THIS CHAPTER ALL ABOUT?

All nations confront the central economic questions: What to produce, How to produce; and For Whom to produce. However, the nations of the world approach these issues with very different production possibilities. The objective of this chapter is to assess how the U.S. economy stacks up. Specifically, this chapter address these three questions:

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

LEARNING OBJECTIVES:

After reading this chapter, the students should know:

1. The relative size of the U.S. economy.
2. How the U.S. output mix has changed over time.
3. How the United States is able to produce so much output.
4. How incomes are distributed in the United States and elsewhere.

NEW TO THIS EDITION

The changes to this chapter include:

- *Completely updated economic comparisons.*
- *All global economic data updated.*
- *All problems revised.*

LECTURE LAUNCHERS

How long will this chapter take? Two 75-minute class periods.

Where should you start?

1. Begin your discussion by asking students how economic freedom affects a nation's ability to grow.

a. *Ask students if economic freedom can help create jobs and grow the economy in poor countries.*
b. *Ask student if the high degree of market reliance in the U.S. economy is responsible for our superior economic growth.*

2. Ask students why we need government regulation of economic activities.
Government provides the framework in which businesses can operate.

3. Ask students what factors may be contributing to income inequality.
Are we becoming a nation of "haves" and "have nots"?

COMMON STUDENT ERRORS

Students often believe the following statements are true. Each incorrect statement is followed by a corrected version and an explanation. These common errors are also included in the student study guide.

1. A higher GDP means an increase in the standard of living. **WRONG**!
A high per capital GDP is an imperfect measure of the standard of living. **RIGHT!**
Many developing countries experience a rise in GDP, but their population grows faster. This means that there is actually less income per person and the standard of living falls! The growth in population must be taken into account in measuring the standard of living, which is the reason that the per capita GDP, not just the GDP, is used. However, even the per capita GDP measure fails to take into account the distribution of income.

2. Investors make an economic investment when they invest in the stock market.
WRONG!
Economic investment occurs only with the tangible creation or maintenance of capital goods. **RIGHT!**
A distinction must be made between financial investment and economic investment. Common usage usually refers to financial investment in which individuals purchase a financial security backed by a financial institution. Such an activity is called saving– the alternative to immediate consumption. This saving may eventually be used by financial corporations to make loans that will lead to economic investment. But economists have found that saving does not necessarily equal investment. Depending on the class, you may explain that the U.S. often saves less than it invests. This excess of investment over savings is financed by savings from the rest of the world. Therefore, economists analyze saving and investment separately.

ANNOTATED OUTLINE

I. Introduction

A. All nations confront the central economic questions of WHAT to produce, HOW to produce, and FOR WHOM to produce it. However, the nations of the world approach these issues with very different production possibilities.
B. In addition to varying production possibilities, the nations of the world use different mechanisms for deciding WHAT, HOW, and FOR WHOM to produce.
C. The objective of this chapter is to assess how the U.S. economy stacks up. Specifically,
   1. WHAT goods and services does the United States produce?
   2. HOW is that output produced?
   3. FOR WHOM is the output produced?

II. What America Produces

A. The U.S. has less than 5 percent of the world's population, yet it produces over 20 percent of the world's output.
B. GDP Comparisons
   1. **Definition**: **Gross Domestic Product (GDP) –** The total market value of all final goods and services produced within a nation's borders in a given time period.
   2. **World View: Comparative Output**
      The market value of output (GDP) is a basic measure of an economy's size. The U.S. economy is far larger than any other and accounts for nearly one-fifth of the entire world's output. This World View provides bar chart data comparing U.S. GDP to several other nations.
   3. In 2015, the U.S. economy produced about $18 trillion worth of goods and services compared to the second largest economy, China, which produced only $11 trillion.
   4. Per Capita GDP
      - Per capita GDP is an indicator of how much output the average person would get if all output were divided up evenly among the population.
      - **Definition: Per Capita GDP** – The dollar value of GDP divided by total population: average GDP.
      - With less than 5 percent of the world's population, the United States produces far more output per person than other countries do.
      - In Ethiopia and Haiti, per capita incomes are less than $1,000 per year – which is less than four dollars per day.
      - **World View: GDP per Capita Around the World**
        Per capita GDP is a measure of average living standards. Americans have access to far more goods and services than do people in other nations. This World View provides bar chart data comparing U.S. GDP per capita to several other nations.
   5. GDP Growth (Figure 2.1)
      - The GDP gap between the United States and most of the world's poor nations keeps growing.
      - The reason for this growing gap is economic growth.
      - **Definition: Economic Growth** – An increase in output (real GDP); an expansion of production possibilities.
      - On average, U.S. output has grown by roughly 3 percent a year, nearly three times faster than population growth (1 percent).

- As a result, not only does total output keep rising, but so does per capita output.

6. Poor Nations (Table 2.1)
   - Some poor nations demonstrated economic growth (China and India).
   - However, in many poor nations, total output has actually declined year after year, depressing living standards.
   - For example, between 2000 and 2015, Zimbabwe's GDP declined by an average of 1.9 percent per year.
   - As a result, Zimbabwe's output in 2015 was 40 percent smaller than in 2000.
   - With negative economic growth and 0.9 percent average annual population growth, Zimbabwe's per capital GDP fell below $400 a year with two-thirds of its population being undernourished.
   - Even nations with positive GDP growth (e.g. Haiti, West Bank/Gaza) didn't grow fast enough to raise living standards.
7. The Mix of Output (Figure 2.2)
   - The mix of output in any nation always includes both goods and services.
   - A century ago, about two-thirds of U.S. output consisted of goods while one-third of output consisted of services.
   - Since then, over 25 million people have left farms and sought jobs in other sectors.
   - The relative decline in goods production does not mean the U.S. is producing fewer goods. Manufacturing output has increased fourfold since 1950. Today's mix of output is simply different.
8. Development Patterns
   - The transformation of the U.S. into a service economy is a reflection of our high incomes.
   - In Ethiopia, where the most urgent concern is still to keep people from starving, over 50 percent of output comes from the farm sector. Because poor countries can't afford it, services are not produced and consumed there.

III. How America Produces

A. Factors of Production
   1. **Definition: Factors of Production** – Resource inputs used to produce goods and services, e.g., land, labor, capital, entrepreneurship.
   2. Human Capital
      - Nations can accumulate various forms of capital.
      - The knowledge and skills workers possess can also be accumulated.
      - **Definition: Human Capital** – The knowledge and skills possessed by the workforce.
      - In the poorest countries, fewer than half ever attend high school. As a result, many are unable to read a book or even write their own names. Without functional literacy, such workers are doomed to low-productivity jobs.
      - The high output of the U.S. is explained not only by a wealth of resources but by their quality as well. The high productivity of the U.S. economy results from using highly educated workers in capital-intensive production processes.
      - **World View: The Education Gap Between Rich and Poor 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. This World View provides bar chart data comparing U.S. enrollment in secondary schools to other nations in the world based on income status of the nation.

3. Capital Stock
   - The exceptional productivity of American workers is due in large part to an abundance of capital.
   - American production tends to be capital-intensive while many other nations tend to use labor-intensive production processes.
   - **Definition: Capital-Intensive** – Production processes that use a high ratio of capital to labor inputs.
4. High Productivity
   Skilled workers coupled with sophisticated capital equipment explain why the U.S. leads other nations in worker productivity.
   - **Definition: Productivity** – Output per unit of input such as output per labor-hour.
   - **Factor Mobility** – Our continuing ability to produce the goods and services that consumers demand also depends on our ability in reallocating resources from one industry to another.
   - **Technological Advance** – Whenever technology advances, an economy can produce more output with existing resources. Its PPC will shift outward.
   - **Outsourcing and trade** – Technological advances permit global resource use. Advances in telecommunications have facilitated this. Although some US workers suffer job losses in this process, productivity and total output increase as U.S. workers pursue their comparative advantage.

B. Role of Government
   - We must also take heed of the role the government plays in choosing HOW a nation's goods and services are produced.
   - The Heritage Foundation has documented a positive relationship between the degree of economic freedom and economic growth.

1. Providing a Legal Framework
   - One of the most basic functions of government is to establish and enforce the rules of the game.
   - The government gives legitimacy to contracts by establishing the rules for such pacts and by enforcing their provisions.
   - By establishing ownership rights, contract rights, and other rules of the game, the government lays the foundation for market transactions.
2. Protecting the Environment
   - The legal contract system is designed to protect the interests of a buyer and a seller who wish to do business.
   - What if the business they contract for harms third parties?
   - **Definition: Externalities** – Costs (or benefits) of a market activity borne by a third party.
   - In the absence of government intervention, such side effects would be common.
   - To reduce the external costs of production, the government limits air, water, and noise pollution and regulates environmental use.
3. Protecting Consumers

- The government also uses its power to protect the interests of consumers.
- One way to do this is to prevent individual business firms from becoming too powerful.
- **Definition: Monopoly** – A firm that produces the entire market supply of a particular good or service.
- To protect consumers from monopoly exploitation, the government tries to prevent individual firms from dominating specific markets.
- The government also regulates the safety of products.

4. Protecting Labor
   - The government also regulates how labor resources are used in the production process.
   - In many poor nations, children are forced to start working at very early ages. They don't get the change to go to school or to stay healthy.
   - In the U.S., child labor laws and compulsory schooling prevent minor children from being exploited.
   - Government regulations also set standards for work place safety, minimum wages, fringe benefits, and overtime provisions.

C. Striking a Balance
   1. Government interventions are designed to change the way in which resources are used.
   2. Such interventions reflect the conviction that the market alone might not select the best possible way of producing goods and services.
   3. There is no guarantee, however, that government regulation of HOW goods are produced always make us better off.
   4. Government failure might replace market failure, leaving us no better off-possibly even worse off.

IV. For Whom America Produces

A. U.S. Income Distribution (Figure 2.3)
   1. Income Quintile
      Definition: Income Quintile – One-fifth of the population, rank-ordered by income (for example, top fifth).
   2. The top 20 percent (quintile) of the U.S. households gets half of all U.S. income.
   3. By contrast, the poorest 20 percent of U.S. households get less than 4 percent.

B. Global Inequality
   1. As unequal as American incomes are, income disparities are actually greater in many other countries. For example, in South Africa the richest tenth of the families receive 51% of that nation's income whereas in the United States the richest tenth of the families receive 30 percent of our country's income.
   2. **World View: Income Share of the Rich**
      The FOR WHOM question is reflected in the distribution of income. Although the U.S. distribution is very unequal, inequalities loom even larger in most Third World countries. This World View provides bar chart data comparing share of total income received by the top tenth of income earners in the U.S. to the same group in several other nations.
   3. As we saw earlier, GDP per capita in developing nations is far below U.S. GDP per capita. Consequently, even poor people in the United States receive more goods and services than the average household in most low-income countries.

V. The Economy Tomorrow: The United Nations Agenda

1. Nearly 3 billion people still live in abject poverty with incomes of less than $3 a day, more than a sixth of the world's population is illiterate, nearly half with no access to sanitation, and a fifth chronically undernourished.
2. In 2015, the U.N. adopted a list of 17 goals for sustainable development and a 15-year deadline to reach those goals. This list of goals includes ending world poverty, eliminating world hunger, reducing inequalities of race, gender, and income, protecting the environment, and slowing climate change.
3. The rich nations of the world have the resources to eliminate global poverty. Because people in rich nations have aspirations for a higher standard of living, they are typically unwilling to part with the resources needed to eliminate world poverty and hunger.
4. Poor nations often cannot mobilize the resources needed to accelerate economic growth because their governments are often corrupt and self-serving. This corruption discourages the investment that poor nations need. A better mix of market-based and government-directed policies is a prerequisite for ending global poverty.

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

In-class Debate

Should the government require people who have the academic ability to go to college?

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

Human capital
Factors of production
Productivity
GDP
Externalities

Teaching notes

Sample answers

No
1) An increase in the number of people going to college will increase the demand for college education and increase the price of college for everyone. However, the return to education (wages) may not increase; in fact it may decrease because more people have the education. This is a negative **externality** of having more people go to college.

2) While the **human capital** of the population would increase, initially GDP may not increase because some people who would have gone to work and produced output are now in college.

3) While the government should provide or support the opportunity for people who have the ability and want to attend college, forcing people to attend college is an intrusion into individual freedom of choice and this should not be the role of the government.

Yes
1) An increase in the number of people attending college will increase the **human capital** in the economy. An increase in **human capital** supports increases in **productivity** of labor, a primary factor of production.

2) Increases in **productivity** are directly related to increases in **GDP**. Increasing human capital makes all **factors of production** more productive.

3) Looking at the international data, there is a direct relationship between increases in **human capital** and increases in **economic growth**.

Extending the Debate

Should we tax the rich more and give to the poor?

Taxes are a primary tool for redistributing income from the wealthy to lower income earners. The economic impact of the redistribution of income is a highly debated topic and arguments are generally formed in the Tax Reduction/Increase debates.

The following two sites look at world income distribution and provide a comparison over time:

- https://www.globalpolicy.org/social-and-economic-policy/global-injustice-and-inequality/inequality-of-wealth-and-income-distribution.html
- http://www.imf.org/external/pubs/ft/weo/2007/02/

Data for the U.S. are also available from the Census Bureau at: http://www.census.gov. Search for income distribution.

From the Heritage Foundation, a conservative think tank, there are two articles that address the impact of tax changes:

- https://www.heritage.org/taxes/report/cbo-report-distribution-income-and-taxes-shows-taxes-matter
- https://www.heritage.org/taxes/commentary/why-adding-new-top-income-tax-rate-bad-idea

Teaching notes

After students have answered individually, post signs on walls of the room labeled with each choice. 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: Pairs combine into groups of four with one pair on each side of the debate. One pair reads their reasons while the other side listens. Then reverse roles so that the other pair reads their reasons. Each group of four selects the strongest argument on each side.

Or, follow with an individual writing assignment.

Debate project

Productivity

Productivity in the United States has changed drastically in the last thirty years. There is a debate among economists as to the causes of the changes in productivity as well as the relationship with other economic variables.
Key questions:

- How is productivity measured?
- What has been the annual average productivity in the U.S. for the last 30 years?
- What are the issues associated with changes in productivity?
- How can the government affect productivity?

The Bureau of Labor Statistics collects the data and calculates various measures of productivity. You can find more information at: http://www.bls.gov/bls/productivity.htm.

Additional data can be found at:

http://www.ny.frb.org/research/data_indicators/index.html

The following two articles from the Federal Reserve discuss productivity changes occurring today.

"Is the United States Losing its Productivity Advantage?"
http://www.newyorkfed.org/research/current_issues/ci13-8.pdf

"The Sources of the Second Surge of U.S. Productivity and Implications for the Future,"
http://www.federalreserve.gov/newsevents/speech/bernanke20060831a.htm

PRINT MEDIA EXERCISE

Chapter 2
The U.S. Economy

Name:
Section:
Grade:

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

1. Mount a copy (do not cut up newspapers or magazines) of the article on a letter-sized page. Make sure there is room at the bottom of the article to write the answers to the questions.

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 or magazine), title (newspaper headline or magazine article title), date, and page for the article you have chosen. Use this format:

   Source: _____ Date: _____ Page:_____
   Headline: _____
   If this information also appears in the article itself, circle each item.

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. Since they could have chosen any article they wanted, the lack of relevance to the data is their fault, not the articles.

3. When 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

For two politically-different but each highly-readable guides to the US economy see:

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

Stein, H., and Murry Foss, A *New Illustrated Guide to the American Economy: A Hundred Key Issues*, American Enterprise Institute, Washington, D.C., 1995.

CHAPTER 2

The U.S. Economy:

A Global View

LEARNING OBJECTIVES

After learning about this chapter, you should know

- LO2-1 The relative size of the U.S. economy.
- LO2-2 How the U.S. output mix has changed over time.
- LO2-3 How America is able to produce so much output.
- LO2-4 How incomes are distributed in the United States and elsewhere.

Nations Have Different Economic Outcomes

- Every country must answer the three basic questions:
  - **WHAT** to produce?
  - **HOW** to produce?
  - **FOR WHOM** to produce it?
- Since each country has vastly different production possibilities, each must confront very different output choices.
- Some use central (government) planning, while others rely on the market mechanism.

What Is Produced?

- The United States;
  - is the largest producer of goods and services in the world.
  - is the largest consumer of goods in the world.
  - specializes in producing what it can produce at a lower opportunity cost than other countries can.
  - purchases from other countries goods and services they can produce at a lower opportunity cost than the United States.

What America Produces

- **Gross domestic product (GDP):** the total market value of all final goods and services produced within a nation's borders in a given time period; a measure of an economy's size.
  - U.S. GDP accounts for about **one-fifth** of the world's GDP.
  - U.S. GDP is one and a half times that of China's, the second-largest GDP.

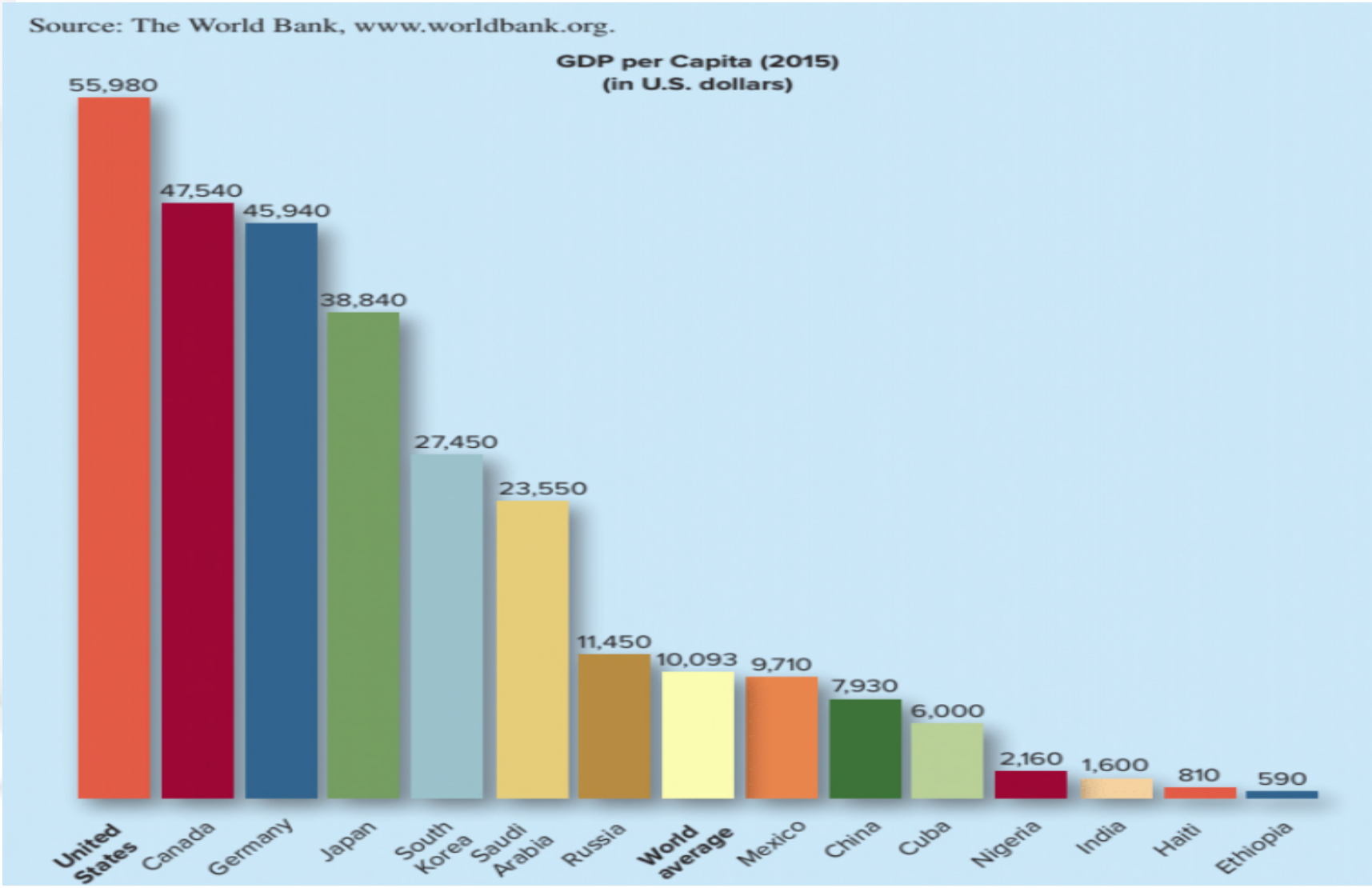
Living Standards

- **Per capita GDP:** GDP divided by the population; an indication of a country's standard of living.

  -If GDP grows faster than population grows, standard of living rises.

  -If GDP grows slower than population grows, standard of living falls.

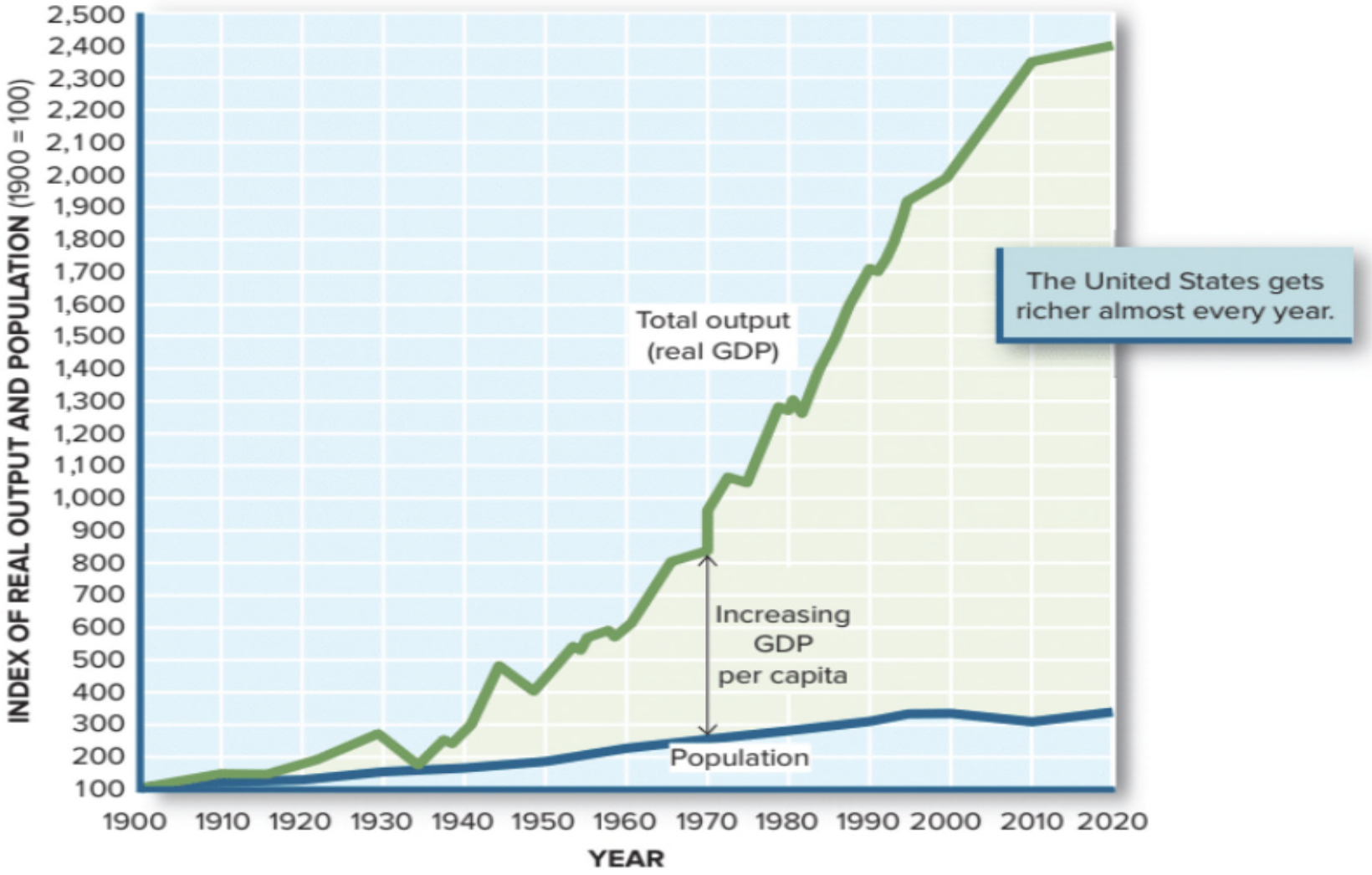
GDP Per Capita Around the World



GDP Growth

- **Economic growth:** an increase in output; an expansion of production possibilities.
  - U.S. output has grown roughly 3 percent per year, while population has grown about 1 percent per year, raising per capita GDP.

U.S. Output and Population Growth



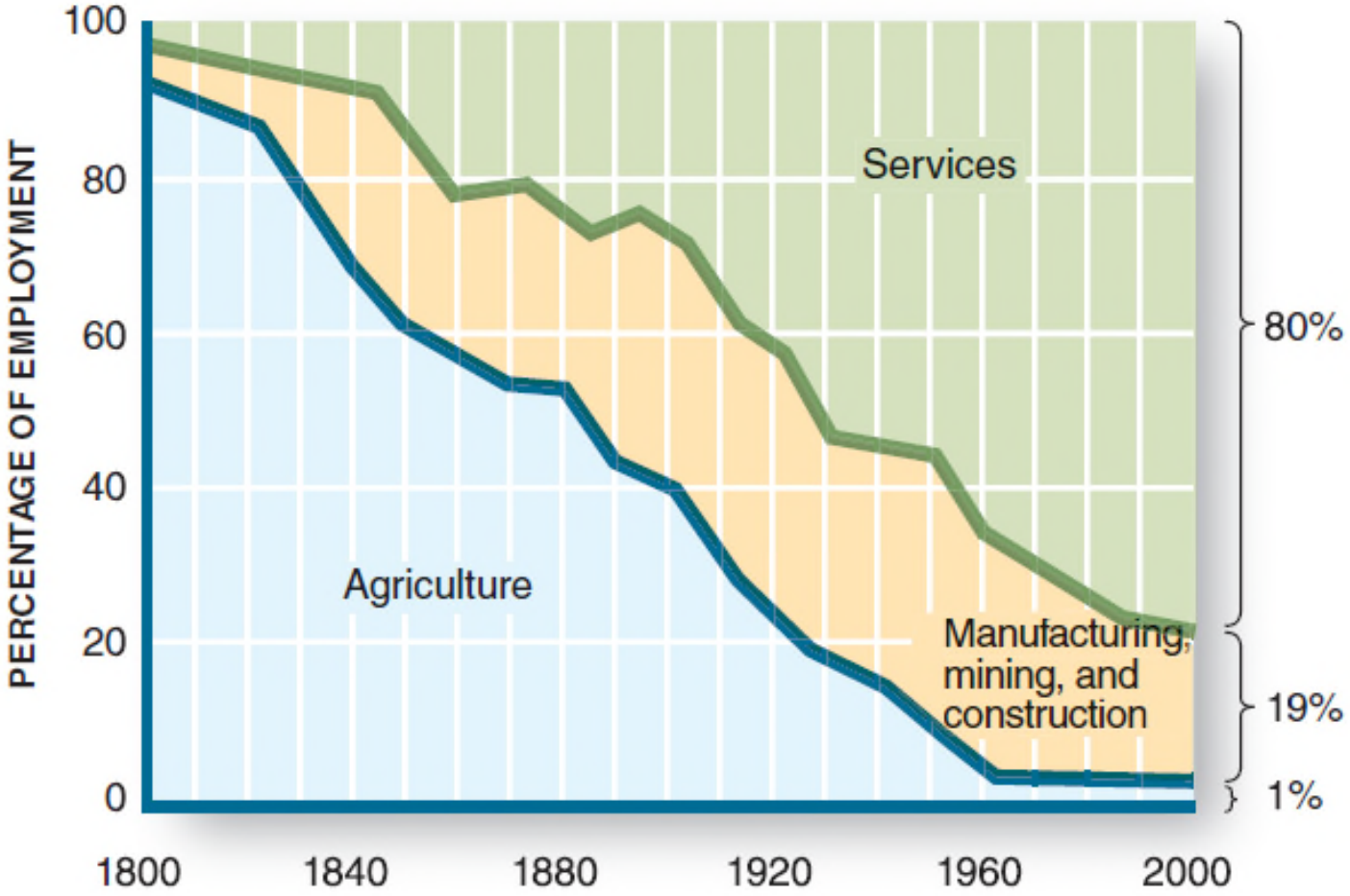
Rich Nations and Poor Nations

- GDP per capita figures are very different in rich and poor nations.
  - **Rich nations:** populations grow slowly, so GDP per capita increases, improving the standard of living.
  - **Poor nations:** population increases rapidly and GDP may be declining, so GDP per capita is stagnant or decreases, making it difficult to raise living standards.

The Changing Mix of Output

- In the past 100 years, the United States transformed from an agricultural society to an industry-based society, and **now** to a service-based society.
  - Eighty percent of U.S. output consists of services, not goods.
  - Even so, the United States remains one of the world's largest manufacturers of goods.

The Changing Mix of Output II



Exercise

- Write down the occupations of your parents and your grandparents.
- Add to the list the type of occupation you are aspiring to.
- **How do the differences relate to the changing output mix in the United States over the last century?**

The Changing Mix of Output III

- The transformation of the United States into a service economy reflects our increasing incomes and relative affluence.

- In poorer countries, resources must be devoted to producing food and goods, not services.

How to Produce?

- How a country produces depends on what resource inputs are available.
- Key among the resource inputs is capital.
  - **Human capital:** the knowledge and skills possessed by the workforce.
  - **Physical capital:** the facilities, tools, equipment, and infrastructure available to the workforce.

Investment in Capital

- The United States;
  - invests heavily in **human capital.**
  - has accumulated a massive amount of **physical capital.**
  - has **high productivity** resulting from using highly educated workers with high-tech equipment in **capital-intensive** production processes.
  - households are able to consume so much because American workers produce so much.

Capital? Or Labor?

- Richer countries tend to be capital-intensive, while poorer countries tend to be labor-intensive.
- **Capital-intensive:**
  - Capital is abundant and relatively low-cost.
  - Labor is costly.
- **Labor-intensive:**
  - Capital is unavailable or very expensive.
  - Labor is cheap.

Other Factors

- **Technological advancement:**
  - Finding new and better ways to produce products.
  - When technology advances, an economy can produce more output with existing resources.
  - Its production possibilities curve shifts outward.

Other Factors II

- **Factor mobility:**
  - Rapidly reallocating resources from declining industries to expanding industries.
- **Outsourcing and trade:**
  - Taking advantage of low opportunity cost around the world.
  - Exploiting technological advancements to use resources from around the world.

Outsourcing

- U.S. workers have a comparative advantage in high-skill, capital-intensive jobs.
- Workers in other countries have a comparative advantage in lower-skill, labor-intensive jobs.
- Outsourcing flows both ways – low-skill jobs leaving the United States and high-skill jobs coming to the United States.

Role of Government in Market Reliant Economy

- Market-reliant economies **grow faster** than government-dominated economies.
  - Entrepreneurs can freely pursue opportunities in the market. They will innovate and create new products. This leads to faster economic growth.
  - When government owns the factors of production, imposes high taxes, or tightly regulates output, there is little incentive to design new products or pursue new technology.

Roles of Government

- **Providing a legal framework**
  - Property rights
  - Rule of law (contracts, fraud)
- **Protecting the environment**
  - Negative externalities
  - Eliminate third-party harm

Roles of Government II

- **Protecting consumers**
  - Fostering competition
  - Product safety
- **Protecting labor**
  - Workplace safety
  - Child labor laws
  - Compulsory schooling
  - Minimum wage law
  - Overtime provisions

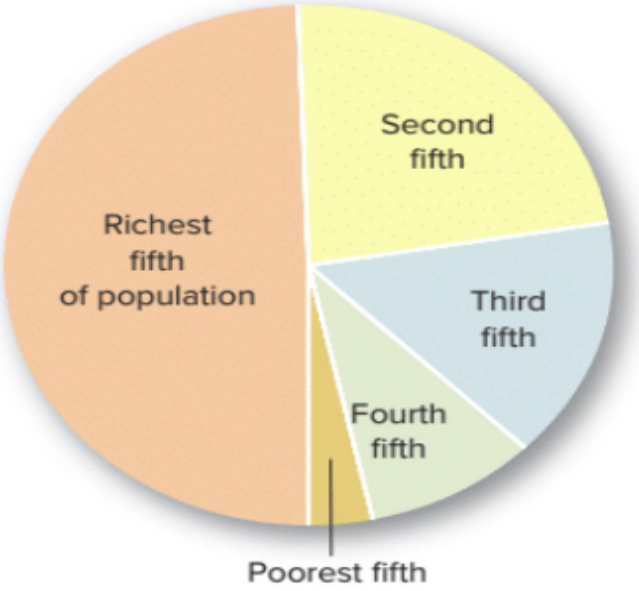
For Whom America Produces

- Allocating the products to the users can be done by government or by the market mechanism.
  - or by a mixture of the two.
  - In the United States, the majority of GDP is distributed via the market mechanism.
  - In market distribution those with the most income get the most goods.

U.S. Income Distribution

- Income has an unequal distribution in the United States (and in every other country).
- The higher the income, the greater the ability to buy goods and services.
- We sort U.S. income earners by **quintile** (one-fifth of the population) rank-ordered by income.
- The top quintile gets more than half of all U.S. income. The bottom quintile gets only 3.1percent.

U.S. Distribution of Income



Income Quintile	2015 Income	Average Income	Share of Total Income (%)
Highest fifth	Above $117,000	$202,000	51.1
Second fifth	$72,000–117,000	$ 92,000	23.2
Third fifth	$44,000–72,000	$ 57,000	14.3
Fourth fifth	$23,000–44,000	$ 33,000	8.2
Lowest fifth	$0–23,000	$ 12,500	3.1

Source: U.S. Department of Commerce, Bureau of the Census (averages rounded to thousands of dollars; 2015 data).

World View: Distribution of Income

- Income disparities are greater in other countries, especially in the poorer countries.
- Poor people (bottom quintile) in the United States receive far more goods and services than the average household (middle quintile) in most low-income countries.

What Is the U.S. Economy Like?

- **WHAT** goods and services does the United States produce?
  - It produces goods desired by its consumers.
  - If it has lower opportunity costs, it produces goods in the country; if not, it buys goods from other countries.
  - The United States has become a heavily service-based economy.

What Is the U.S. Economy Like? (cont.)

- **HOW** is that output produced?
  - United States firms are in business to be profitable.
  - To succeed, they must satisfy their customers and comply with government regulations.
  - Each firm will select the low-cost mixture of inputs necessary to produce a good acceptable to its customers.

What Is the U.S. Economy Like? (cont. II)

- **FOR WHOM** is the output produced?
  - For those who are both willing and able to pay for it.
  - In the market economy, those with larger incomes satisfy more of their wants than those with less.

Application: The Economy Tomorrow

- There is poverty around the world.
  - 3 billion people live on incomes of less than $3 a day.
  - One-sixth are illiterate.
  - A fifth is chronically undernourished.
- The World Bank set goals to reduce extreme poverty, achieve universal primary education, reduce infant mortality, and increase access to potable water.

Application: The Economy Tomorrow II

- People aspire to higher living standards.
- Rich nations choose to meet their own needs first before helping the world's poor.
- Most poor nations have major problems:
  - Corruption.
  - No private property protection.
  - No contract enforcement.
  - This discourages investment in their nations from the world's richer nations.

Revisiting the Learning Objectives

- **LO2-1 Know the relative size of the United States economy.**
  - The United States produces about $18 trillion of output per year.
  - This is more than one-fifth of the world's total.
  - The U.S. GDP per capita is five times the world average.

Revisiting the Learning Objectives II

- **LO2-2 Know how the U.S. output mix has changed over time.**
  - The output mix has transitioned from agricultural, to industrial, to services over the past century.
  - Services now account for nearly 80 percent of U.S. output.
  - This is due to the relatively high incomes in the United States.

Revisiting the Learning Objectives III

- **LO2-3 Know how America is able to produce so much output.**
  - U.S. workers possess high productivity.
  - Abundant capital, education, technology, training, and management all contribute.
  - Also, the United States enjoys a relatively high degree of economic freedom (market reliance).

Revisiting the Learning Objectives IV

- **LO2-4 Know how incomes are distributed in the United States and elsewhere.**
  - Incomes are distributed unequally everywhere.
  - The worst inequity occurs in the poorer nations.
  - In the United States the highest quintile receives over 16 times more income than the lowest quintile.

Looking Ahead: Chapter 3

Supply and Demand

After learning about this chapter, you should know

- The nature and determinates of market demand.
- The nature and determinants of market supply.
- How market prices are established.
- What causes market prices to change.
- How government price controls affect market outcomes.