Chapter 6 Exercises

Self-Check Questions

1. Country A has export sales of $20 billion, government purchases of $1,000 billion, business investment of $50 billion, imports of $40 billion, and consumption spending of $2,000 billion. What is the dollar value of GDP?

2. Which of the following are included in GDP, and which are not?

   a. The cost of hospital stays

   b. The rise in life expectancy over time

   c. Child care provided by a licensed day care center

   d. Child care provided by a grandmother

   e. The sale of a used car

   f. The sale of a new car

   g. The greater variety of cheese available in supermarkets

   h. The iron that goes into the steel that goes into a refrigerator bought by a consumer

3. Use the data from the following table to determine the percent change in real GDP growth from 2005 to 2020.

Year	Nominal GDP (billions of dollars)	GDP Deflator (2012 = 100)
1960	542.4	16.6
1965	742.3	17.8
1970	1,073.3	21.7
1975	1,684.9	29.8
1980	2,857.3	42.3
1985	4,339.0	54.6
1990	5,963.1	63.7
1995	7,639.7	71.9
2000	10,252.3	78.1
2005	13,036.6	87.4
2010	14,992.1	96.1
2015	18,219.3	104.8
2020	20,893.7	113.6

4. In the U.S. economy, when was the longest recession and when was the longest expansion? Review the data in Table 3 in Lesson 6.2.

5. Is it possible for GDP to rise while GDP per capita is simultaneously falling? Is it possible for GDP to fall while per capita GDP is rising?

6. In 2019, the Central African Republic had a GDP of $2.22 billion and a population of 4.75 million. Calculate the GDP per capita of the Central African Republic.

7. Explain briefly whether each of the following would cause a rise in GDP to overstate or understate the degree of change in the broad standard of living.

   a. The environment becomes more polluted.

   b. The crime rate declines.

   c. A greater variety of goods becomes available to consumers.

   d. Infant mortality declines.

Review Questions

8. What are the main components of measuring GDP with what is demanded?

9. What are the main components of measuring GDP with what is produced?

10. Would you usually expect GDP as measured by what is demanded to be greater than GDP measured by what is supplied, or the reverse?

11. Why must double counting be avoided when measuring GDP?

12. What is the difference between a series of economic data over time measured in nominal terms versus the same data series over time measured in real terms?

13. How do you convert a series of nominal economic data over time to real terms?
14. What are the typical patterns of GDP for a high-income economy like the United States in the long run and the short run?
15. What are the two main difficulties that arise in comparing the GDP of different countries?
16. List some of the reasons why GDP should not be considered an effective measure of the standard of living in a country.

Critical Thinking Questions

17. What does GDP not tell us about the economy?
18. Should people typically pay more attention to their real income or their nominal income? If you choose the latter, why would that make sense in today's world? Would your answer be the same for the 1970s?
19. Why do you suppose that U.S. GDP is so much higher today than fifty or one hundred years ago?
20. Why do you think that GDP does not grow at a steady rate, but rather speeds up and slows down?
21. Cross-country comparisons of GDP per capita typically use purchasing power parity (PPP)-equivalent exchange rates, which are a measure of the long-run equilibrium value of an exchange rate. Why could using market exchange rates, which sometimes change dramatically in a short period of time, be misleading?
22. Why might GDP per capita be only an imperfect measure of a country's standard of living?
23. How might a "green" GDP be measured?

Problems

24. Last year, a small nation with abundant forests cut down $200 worth of trees. $100 in trees was then turned into $150 in lumber. $100 worth of that lumber was used to produce $250 worth of bookshelves. Assuming the country produces no other outputs, and there are no other inputs used in the production of trees, lumber, and bookshelves, what is this nation's GDP? In other words, what is the value of the final goods produced, including trees, lumber, and bookshelves?
25. The prime interest rate is the rate that banks charge their best customers. Based on the nominal interest rates and inflation rates given in the following table, in which year would it have been best to be a lender? In which year would it have been best to be a borrower?

Year	Prime Interest Rate	Inflation Rate
1970	7.9%	5.7%
1974	10.8%	11.0%
1978	9.1%	7.6%
1981	18.9%	10.3%

26. Individuals use mortgage loans to purchases houses. The following table provides a list of the mortgage interest rates being charged for several different years and the rate of inflation for each year. In which year would it have been better to be a person borrowing money from a bank to buy a home? In which year would it have been better to be a bank lending money?

Year	Mortgage Interest Rate	Inflation Rate
1984	12.4%	4.3%
1990	10.0%	5.4%
2001	7.0%	2.8%

27. Ethiopia has a GDP of $8 billion and a population of 55 million. Costa Rica has a GDP of $9 billion and a population of 4 million. Calculate the GDP per capita for each country and identify which one is higher.

28. In 1980, Denmark had a GDP of $70 billion and a population of 5.1 million. In 2000, Denmark had a GDP of $160 billion and a population of 5.3 million. By what percentage did Denmark's GDP per capita rise between 1980 and 2000?

29. The Czech Republic has a GDP of 1,800 billion koruny (CZK). The exchange rate is CZK 20 = USD 1. The Czech population is 20 million. What is the GDP per capita of the Czech Republic expressed in USD?