MACROECONOMICS

GLOBAL EDITION

14th Edition

Michael Parkin

MACROECONOMICS
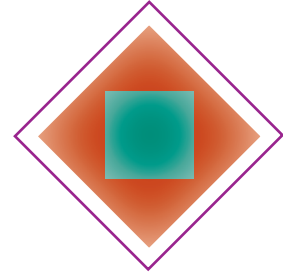
MICHAEL PARKIN

University of Western Ontario

Pearson

◆ SUMMARY

Key Points

Gross Domestic Product (pp. 116–118)

- GDP, or gross domestic product, is the market value of all the final goods and services produced in a country during a given period.
- A final good is an item that is bought by its final user, and it contrasts with an intermediate good, which is a component of a final good.
- GDP is calculated by using either the expenditure or income totals in the circular flow model.
- Aggregate expenditure on goods and services equals aggregate income and GDP.

Measuring U.S. GDP (pp. 119–121)

- Because aggregate expenditure, aggregate income, and the value of aggregate production are equal, we can measure GDP by using the expenditure approach or the income approach.
- The expenditure approach sums consumption expenditure, investment, government expenditure on goods and services, and net exports.
- The income approach sums wages, interest, rent, and profit (plus indirect taxes less subsidies plus depreciation).
- Real GDP is measured using a common set of prices to remove the effects of inflation from GDP.

The Uses and Limitations of GDP (pp. 122–127)

- GDP is used to compare the standard of living over time and across countries.
- GDP per person grows and fluctuates around the more smoothly growing potential GDP.
- A slowing of the growth rate of GDP per person during the 1970s has lowered incomes by a large amount.
- International GDP comparisons use PPP prices.
- GDP is not a perfect measure of the standard of living because it excludes household production, the underground economy, leisure time, and environmental quality.

Key Terms

PROBLEMS AND APPLICATIONS

Gross Domestic Product

1. Classify each of the following items as a final good or service or an intermediate good or service and identify each item as a component of consumption expenditure, investment, or government expenditure on goods and services:
   - A new Renault car bought for your birthday
   - Weapons bought by the Russian government
   - Tortillas bought by a Mexican fast-food stand
   - Glass bottles purchased by Perrier
   - A new house on the Caribbean island bought by Argentina's president

2. The following figure illustrates the circular flow model.
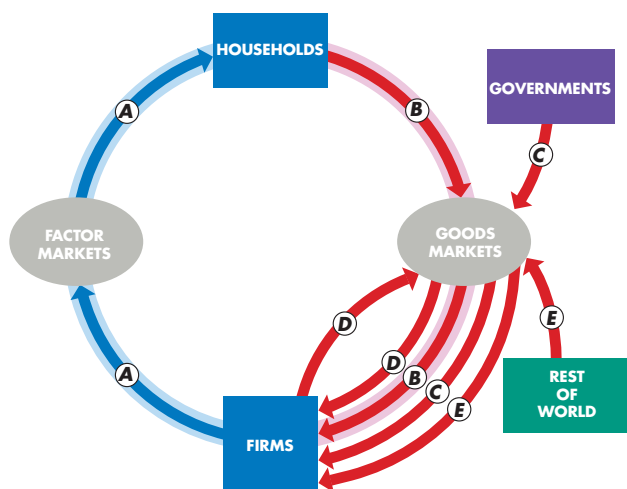
   During 2021, flow A was $13.0 trillion, flow B was $9.1 trillion, flow D was $3.3 trillion, and flow E was −$0.8 trillion. Calculate (i) GDP and (ii) government expenditure.

3. Use the following data to calculate aggregate expenditure and imports of goods and services.
   - Government expenditure: $20 billion
   - Aggregate income: $100 billion
   - Consumption expenditure: $67 billion
   - Investment: $21 billion
   - Exports of goods and services: $30 billion

Measuring U.S. GDP

4. The table in the next column lists some national accounts data for the United States in 2019.
   a. Calculate U.S. GDP in 2019.

Item	Billions of dollars
Wages	11,317
Consumption expenditure	14,266
Other factor incomes	4,935
Investment	3,784
Government expenditure	3,683
Net exports	−634
Depreciation	3,402

   b. Explain the approach (expenditure or income) you used to calculate GDP.

Use the following data to work Problems 5 and 6.

Tropical Republic produces only bananas and coconuts. The base year is 2021, and the table gives the quantities produced and the market prices.

Quantities	2021	2022
Bananas	800 bunches	900 bunches
Coconuts	400 bunches	500 bunches

Prices	2021	2022
Bananas	$2 a bunch	$4 a bunch
Coconuts	$10 a bunch	$5 a bunch

5. Calculate nominal GDP in 2021 and 2022.
6. Calculate real GDP in 2022 expressed in base-year prices.

The Uses and Limitations of GDP

7. Use the following data to work out the year in which the U.S. standard of living (i) increased and (ii) decreased. Explain your answer.

Year	Real GDP	Population
2017	$18.1 trillion	325.1 million
2018	$18.7 trillion	326.7 million
2019	$19.1 trillion	328.5 million
2020	$18.4 trillion	330.1 million

Mathematical Note

8. An agricultural economy produces only potatoes and tomatoes.

Quantities	2016	2017
Potatoes	2,000 tons	2,300 tons
Tomatoes	900 tons	1,000 tons

Prices	2016	2017
Potatoes	€27 a ton	€33 a ton
Tomatoes	€14 a ton	€12 a ton

Calculate the country's chained-euro real GDP in 2017 expressed in 2016 euros.

ADDITIONAL PROBLEMS AND APPLICATIONS

Gross Domestic Product

9. Classify each of the following items as a final or an intermediate good or service, and identify which is a component of consumption expenditure, investment, or government expenditure on goods and services:
   - Financial services bought by China Investment Corporation.
   - Desktop computers bought by Barclays.
   - New taximeters imported from China by the London Taxi Company.
   - New DVD bought by a student from Virgin Megastore.

Use the figure in Problem 2 to work Problems 10 and 11.

10. In 2020, flow A was $1,000 billion, flow C was $250 billion, flow B was $650 billion, and flow E was $50 billion. Calculate investment.

11. In 2021, flow D was $2 trillion, flow E was $-$1 trillion, flow A was $10 trillion, and flow C was $4 trillion. Calculate consumption expenditure.

Use the following information to work Problems 12 and 13.

Naval Group, a French company, provides parts and equipment for Brazilian submarines. Renault do Brasil, the Brazilian subsidiary of the French car manufacturer Renault, produces cars for the Brazilian market in Paraná.

12. Explain where these activities appear in the Brazilian National Income and Product Accounts.

13. Explain where these activities appear in France's National Income and Product Accounts.

Use the following news clip to work Problems 14 and 15, and use the circular flow model to illustrate your answers.

Gannett Outsourcing Nearly 500 Jobs to India

Gannett (the largest U.S. newspaper publisher by daily circulation) is outsourcing 485 jobs to India.

Source: newjerseyglobe.com, December 11, 2020

14. Explain how Gannett's outsourcing to India will change India's GDP.

15. Explain how Gannett's outsourcing to India will change U.S. GDP.

Measuring U.S. GDP

Use the following data to work Problems 16 and 17. The table lists some macroeconomic data for the United States in 2016.

Item	Billions of dollars
Wages	9,908
Consumption expenditure	12,498
Other factor incomes	4,567
Investment	3,037
Government expenditure	3,254
Net exports	−507

16. Calculate U.S. GDP in 2016.

17. Explain the approach (expenditure or income) that you used to calculate GDP.

Use the following data to work Problems 18 and 19.

An economy produces only apples and oranges. The base year is 2022, and the table gives the quantities produced and the prices.

Quantities	2022	2023
Apples	60	160
Oranges	80	220

Prices	2022	2023
Apples	$0.50	$1.00
Oranges	$0.25	$2.00

18. Calculate nominal GDP in 2022 and 2023.

19. Calculate real GDP in 2022 and 2023 expressed in base-year prices.

Use the following news clip to work Problems 20 and 21.

China's Economy Accelerates as Retail, Investment Pick Up

China's real GDP increased 6.9 percent in the first quarter of 2017 from a year earlier. Investment grew by 9.2 percent and retail sales by 10.9 percent. In current prices, GDP increased by 11.8 percent from a year earlier.

Source: *Bloomberg News*, April 17, 2017

20. Explain how China's real GDP can grow at a 6.9 percent rate when consumption and investment grew faster than 6.9 percent.

21. Explain why the growth rate of GDP in current prices does not provide information about how quickly the economy is really growing.

The Uses and Limitations of GDP

22. The United Nations' Human Development Index (HDI) is based on GDP per person, life expectancy at birth, and indicators of the quality and quantity of education.
    a. Explain why the HDI might be better than GDP as a measure of economic welfare.
    b. Which items in the HDI are part of GDP and which items are not in GDP?
    c. Do you think the HDI should be expanded to include items such as pollution, resource depletion, and political freedom? Explain.
    d. What other items should be included in a comprehensive measure of economic welfare?

Use the following information to work Problems 23 and 24.

Comparing GDP Per Person

The International Monetary Fund reported the following data on gross domestic product per capita, measured in U.S. dollars at market exchange rates in 2019: Canada $46,400, China $10,243, United Kingdom $42,417, and United States $65,254.

> Source: International Monetary Fund, World Economic Outlook Database, April 2021

23. Explain the special complications involved with attempting to compare the economic welfare in China and the United States by using the GDP for each country.

24. Explain why the data reported here might be a poor indicator of the differences in economic welfare among Canada, the United Kingdom, and the United States, but nevertheless provide the correct ranking of the countries.

25. **The Forbes Billionaires List: Africa's Billionaires 2020**

    Africa's billionaires are richer than a year ago. As a group, the continent's 20 billionaires are worth $73.4 billion, an increase of $4.7 billion from a year ago.

    > Source: cnbcafrica.com, February 21, 2020

    One-third of Africans earn about $2 a day.

    a. Why might GDP per person misrepresent the standard of living of the average African?
    b. Why might $2 a day underestimate the standard of living of the poorest Africans?

Economics in the News

26. After you have studied *Economics in the News* on pp. 128–129, answer the following questions.
    a. How did the BEA estimates of the real GDP growth rate in the second and third quarters of 2020 change from the advanced estimate to the third estimate?
    b. How did the NY Fed nowcast of the second quarter growth rate change through the quarter?
    c. How did the NY Fed nowcast of the third quarter growth rate change through the quarter?
    d. Describe the common feature of the relationship between the BEA and the NY Fed estimates of real GDP present since 2002 and visible in the second and third quarters of 2020.

27. **GDP Outdated, Here Are the Alternatives**

    A panel of high-profile economists suggest measuring the economic well-being of families and removing the emphasis on GDP growth. Some economists propose including a value on housework and making better estimates of healthcare improvements. Nobel Laureate Angus Deaton suggests conducting a survey to ask people how happy they are.

    > Source: weforum.org, February 10, 2020

    Suppose that a new index is calculated using the suggestions in the news clip.

    a. Would the new index be a better measure of the standard of living than GDP per person? Explain your answer.
    b. Explain the challenges involved in trying to incorporate the new index.
    c. Explain how the United Nations' Human Development Index compares with the new index.
    d. Is there likely to be a high correlation between GDP per person and the new index? Why or why not?

Mathematical Note

28. Use the information in Problem 18 to calculate the chained-dollar real GDP in 2023 expressed in 2022 dollars.

5

MONITORING JOBS AND INFLATION

After studying this chapter, you will be able to:

◆ Explain why unemployment is a problem and how we measure the unemployment rate and other labor market indicators

◆ Explain why unemployment occurs and why it is present even at full employment

◆ Explain why inflation is a problem and how we measure the inflation rate

Each month, we chart the course of unemployment and inflation as measures of U.S. economic health. How do we measure the unemployment rate and the inflation rate, and are they reliable vital signs for the economy?

As the U.S. economy expanded after the Great Recession of 2008 and 2009, job growth was weak and the health of the labor market became a major issue for many families. But after a deeper Covid-induced recession in 2020, jobs bounced back rapidly. *Economics in the News*, at the end of this chapter, puts the spotlight on the labor market in 2020 as the economy crashed and unemployment soared.

◆ Employment and Unemployment

What kind of job market will you enter when you graduate? Will there be plenty of good jobs to choose among, or will jobs be so hard to find that you end up taking one that doesn't use your education and pays a low wage? The answer depends, to a large degree, on the total number of jobs available and on the number of people competing for them.

The class of 2021 faced a challenging job market, but a better market than those of the decade that preceded it. In May 2021, 9 million Americans wanted a job but couldn't find one. That number is down from 15 million at the end of 2009 and 23 million in 2020.

Unemployment is kept in check because the U.S. economy is an incredible job-creating machine. Even in 2009 with 15 million unemployed, 139 million people had jobs—22 million more than in 1989. And in 2019 before Covid, job growth had created another 20 million jobs taking the total to 159 million.

Why Unemployment Is a Problem

Unemployment is a serious personal and social economic problem for two main reasons. It results in

- Lost incomes and production
- Lost human capital

Lost Incomes and Production The loss of a job brings a loss of income and lost production. These losses are devastating for the people who bear them and they make unemployment a frightening prospect for everyone. Unemployment benefits create a safety net, but they don't fully replace lost earnings.

Lost production means lower consumption and a lower investment in capital, which lowers the living standard in both the present and the future.

Lost Human Capital Prolonged unemployment permanently damages a person's job prospects by destroying human capital.

ECONOMICS IN ACTION

What Kept Ben Bernanke Awake at Night

The Great Depression began in October 1929, when the U.S. stock market crashed. It reached its deepest point in 1933, when 25 percent of the labor force was unemployed, and lasted until 1941, when the United States entered World War II. The depression quickly spread globally to envelop most nations.

The 1930s were and remain the longest and worst period of high unemployment in history. Failed banks, shops, farms, and factories left millions of Americans without jobs, homes, and food. Without the support of government and charities, millions would have starved.

The Great Depression was an enormous political event: It fostered the rise of the German and Japanese militarism that were to bring the most devastating war humans have ever fought. It also led to President Franklin D. Roosevelt's "New Deal," which enhanced the role of government in economic life and made government intervention in markets popular and the market economy unpopular.

The Great Depression also brought a revolution in economics. British economist John Maynard Keynes published his *General Theory of Employment, Interest, and Money* and created what we now call macroeconomics.

Many economists have studied the Great Depression and tried to determine why what started out as an ordinary recession became so devastating. Among them is Ben Bernanke, the former Chairman of the Federal Reserve.

One of the reasons the Fed was so aggressive in cutting interest rates during 2007–2008 and saving banks from going under is that Ben Bernanke was vividly aware of the horrors of total economic collapse and was determined to avoid any risk of a repeat of the Great Depression.