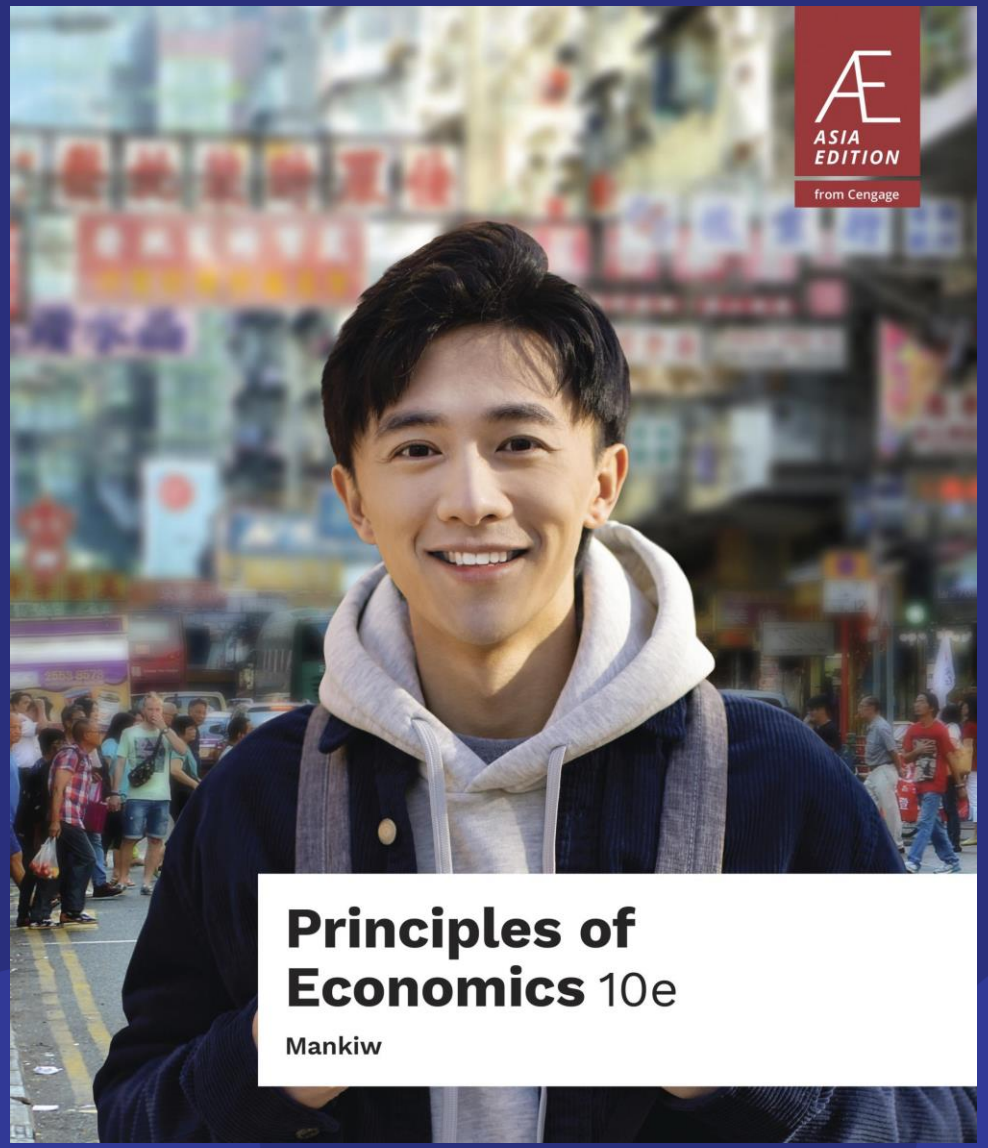


Principles of Economics, 10e

Chapter 26: Production and Growth

Chapter Objectives (1 of 2)

By the end of this chapter, you should be able to:

- Explain how productivity influences economic growth.
- Compare the future economic situation of two countries, given past data on income and growth rates.
- Identify which productivity determinant a given scenario represents.
- Describe the catch-up effect.
- Explain how a change in a productivity determinant impacts productivity.
- Explain how investments in education and R&D impact growth.

Chapter Objectives (2 of 2)

- Explain the impact of the enforcement of property rights on growth.
- Explain how savings and investment impact growth.
- Explain how government structure and stability impact growth rates.

26-1

Economic Growth around the World

Variations in the Standard of Living (1 of 2)

- Living standards vary widely from country to country
  - Average income in a rich country (U.S., Japan, or Germany) is about ten times the average income in a poor country (India, Nigeria, or Nicaragua
  - Differences are reflected in large differences in the quality of life: nutrition, housing, healthcare, life expectancy, and so on
- Within a country, over time
  - The U.S.: Real GDP per person growth: 2% per year (for the past 100 years)

Variations in the Standard of Living (2 of 2)

- Ranking of countries by income changes substantially over time
  - Poor countries are not necessarily doomed to poverty forever, e.g. Japan incomes were low in 1860 and are quite high now
  - Rich countries can’t take their status for granted
    - They may be overtaken by poorer but faster-growing countries

Table 1 The Variety of Growth Experiences

Real GDP per person (in 2020 dollars)

Country	Period	At Beginning of Period	At End of Period	Growth Rate (per year)
China	1900–2020	$ 834	$ 17,312	2.56%
Japan	1890–2020	1,751	42,197	2.48
Brazil	1900–2020	907	14,836	2.36
Mexico	1900–2020	1,350	18,833	2.22
Indonesia	1900–2020	1,038	12,074	2.07
Germany	1870-2020	2,544	53,694	2.05
Canada	1870-2020	2,766	48,073	1.92
India	1900-2020	786	6,454	1.77
United States	1870-2020	4,668	63,544	1.76
Argentina	1900–2020	2,671	20,768	1.72
Bangladesh	1900–2020	726	5,083	1.64
Pakistan	1900–2020	859	4,877	1.46
United Kingdom	1870-2020	5,601	44,916	1.40

26-2

Productivity: Its Role and Determinants

Why Productivity Is So Important (1 of 2)

- **Productivity***
  - Quantity of goods and services produced from each unit of labor
  - Key determinant of living standards: when a nation's workers are very productive, real GDP is large and incomes are high

*Words accompanied by an asterisk are key terms from the chapter.

Why Productivity Is So Important (2 of 2)

- Growth in productivity is the key determinant of growth in living standards
  - When productivity grows rapidly, so do living standards
  - An economy's income is the economy's output
  - A nation can enjoy a high standard of living only if it can produce a large quantity of goods and services

How Productivity Is Determined (1 of 2)

- **Physical capital***
  - The stock of equipment and structures that are used to produce goods and services
- **Human capital***
  - Knowledge and skills that workers acquire through education, training, and experience
- **Natural resources***
  - The inputs into the production of goods and services that are provided by nature, such as land, rivers, and mineral deposits

*Words accompanied by an asterisk are key terms from the chapter.

How Productivity Is Determined (2 of 2)

- **Technological knowledge***
  - Society's understanding of the best ways to produce goods and services
- Common knowledge: After one person uses it, everyone becomes aware of it
- Proprietary: It is known only by the company that discovers it
- Any advance in knowledge that boosts productivity and allows society to get more output from its resources

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning 1: Discussion Questions

Which of the following policies do you think would be most effective at boosting growth and living standards in a poor country over the long run?

A. Offer tax incentives for investment by local firms

B. Offer tax incentives for investment by foreign firms

C. Give cash payments for good school attendance

D. Crack down on government corruption

E. Restrict imports to protect domestic industries

F. Allow free trade

26-3

Economic Growth and Public Policy

Public Policy

- A society's standard of living depends on
  - Its ability to produce goods and services
- Productivity depends on
  - Physical capital per worker, human capital per worker, natural resources per worker, and technological knowledge
- Policymakers
  - What can government policy do to raise productivity and living standards?

Saving and Investment

- To raise future productivity encourage saving and investment
  - Invest more current resources in the production of capital
  - Trade-off: Sacrifice current consumption to increase future consumption
- Higher savings rate
  - More resources to make capital goods
  - Capital stock increases

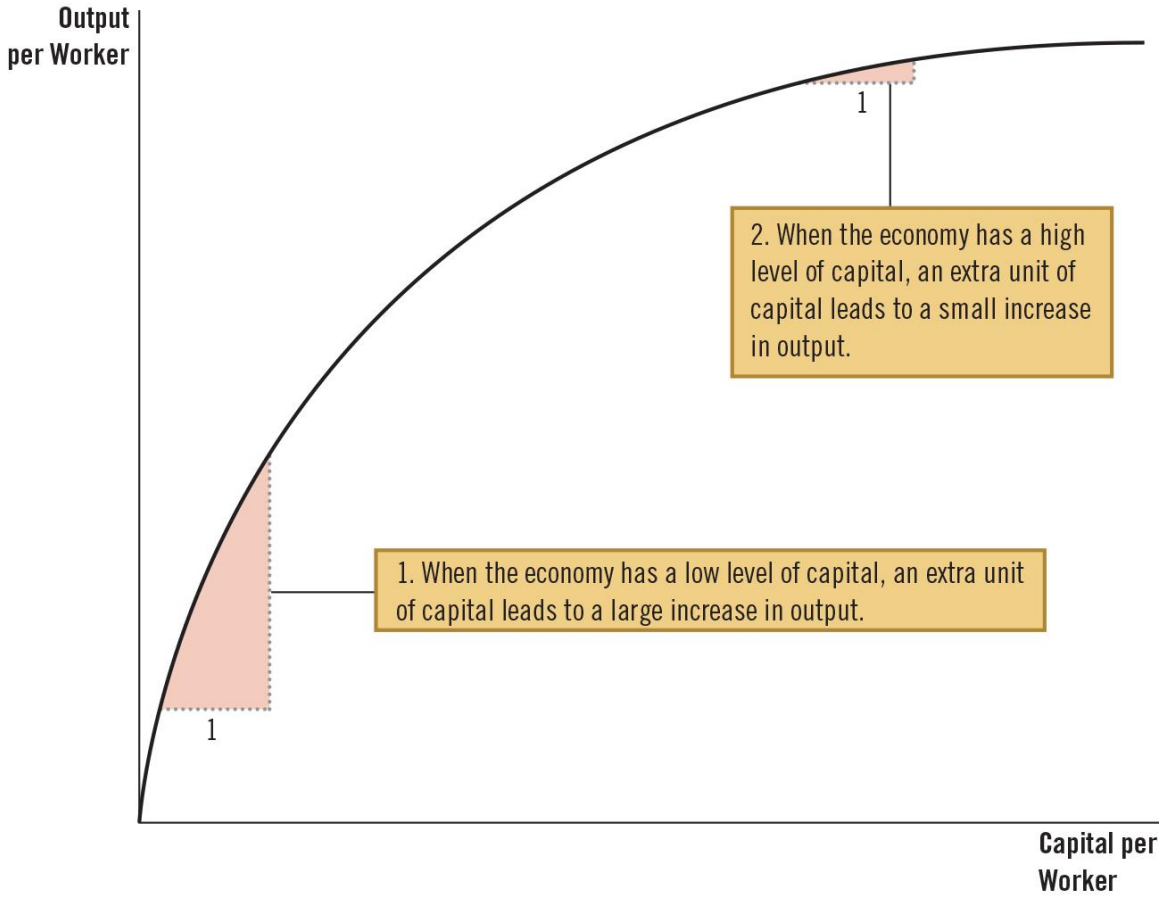
Diminishing Returns and the Catch-Up Effect

- **Diminishing returns***
  - Benefit from an extra unit of an input declines as the quantity of the input increases
- In the long run, higher saving rate leads to
  - Higher level of productivity
  - Higher level income
- This faster growth is temporary, due to diminishing returns to capital

*Words accompanied by an asterisk are key terms from the chapter.

Figure 1 Illustrating the Production Function

- This figure shows how the amount of capital per worker influences the amount of output per worker.
- Other determinants of output, including human capital, natural resources, and technology, are held constant.
- The curve becomes flatter as the amount of capital increases because of diminishing returns to capital.



Catch-Up Effect (1 of 2)

- **Catch-up effect***
  - The property whereby countries that start off poor tend to grow more rapidly than countries that start off rich
- Accumulation of capital is subject to diminishing returns: The more capital an economy has, the less additional output it gets from an extra unit of capital
- Growth eventually slows down as capital, productivity, and income rise

*Words accompanied by an asterisk are key terms from the chapter.

Catch-Up Effect (2 of 2)

- Poor countries
  - Low productivity
  - Return to capital is often high
  - Small amounts of capital investment
    - Increase workers' productivity substantially
  - Tend to grow faster than rich countries
- Rich countries
  - High productivity
  - Additional capital investment
    - Small effect on productivity

Investment from Abroad (1 of 2)

- Domestic savings and foreign investment increase capital stock
- Investment by foreigners
  - Foreign direct investment
    - Capital investment that is owned and operated by a foreign entity
  - Foreign portfolio investment
    - Investment financed with foreign money but operated by domestic residents

Investment from Abroad (2 of 2)

- Benefits from investment
  - Some benefits flow back to the foreign capital owners
  - Increase the economy's stock of capital
  - Higher productivity and higher wages
  - State-of-the-art technologies developed in other countries
  - Especially good for poor countries that cannot generate enough saving to fund investment projects themselves

World Bank and IMF

- World Bank
  - Encourages flow of capital to poor countries
  - Funds from world's advanced countries
  - Makes loans to less developed countries
- World Bank and the IMF (International Monetary Fund)
  - Established to achieve common goal of promoting economic prosperity

Education

- Education is investment in human capital
  - Gap between wages of educated and uneducated workers
  - Opportunity cost: wages forgone
  - Conveys positive externalities
  - Subsidies to human-capital investment: Public education
- Problem for poor countries: Brain drain—the emigration of highly educated workers to rich countries, where these workers can earn more

Health and Nutrition (1 of 2)

- Health care expenditure
  - Is a type of investment in human capital: Healthier workers are more productive
- In countries with significant malnourishment, raising workers' caloric intake raises productivity
  - 1962–1995, caloric consumption rose 44% in S. Korea, and economic growth was spectacular
  - Nobel winner Robert Fogel: 30% of Great Britain's growth from 1790–1980 was due to improved nutrition

Health and Nutrition (2 of 2)

- Vicious circle
  - Countries are poor in part because their populations are not healthy
  - Populations are not healthy in part because they are poor and cannot afford adequate healthcare and nutrition
- Virtuous circle
  - Policies that lead to more rapid economic growth would naturally improve health outcomes, which in turn would further promote economic growth

Property Rights and Political Stability (1 of 2)

- To foster economic growth
  - Protect property rights (ability of people to exercise authority over the resources they own)
    - Prerequisite for the price system to work
    - Courts: Enforce property rights
  - Promote political stability

Property Rights and Political Stability (2 of 2)

- Major problem in less developed countries: Lack of property rights
  - Contracts are hard to enforce
  - Fraud, corruption often goes unpunished
  - Firms must bribe government officials for permits
- Political instability (frequent revolutions, coups)
  - Creates uncertainty over whether property rights will be protected in the future

Free Trade (1 of 2)

- Trade can make everyone better off
- Inward-oriented policies
  - Aim to raise living standards by avoiding interaction with other countries
  - For example, tariffs, limits on investment from abroad
- Outward-oriented policies
  - Promote integration with the world economy
  - For example, elimination of restrictions on trade or foreign investment

Free Trade (2 of 2)

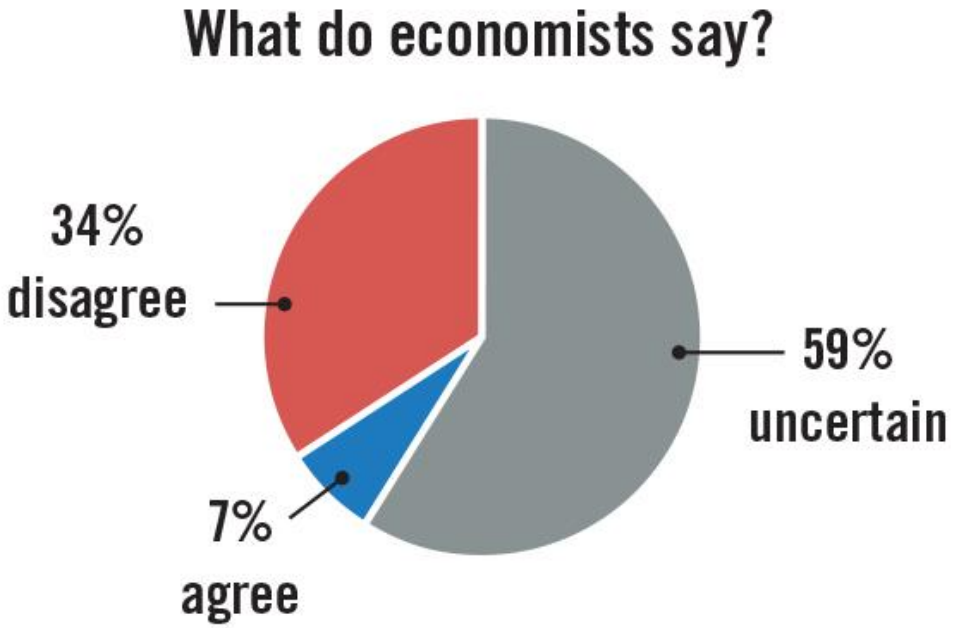
- Trade has similar effects as discovering new technologies
  - A country exporting wheat and importing textiles benefits as if it had invented a technology for turning wheat into textiles.
  - Improves productivity and living standards
- Countries with inward-oriented policies
  - Have generally failed to create growth: Argentina throughout the 20th century
- Countries with outward-oriented policies
  - Have often succeeded: South Korea, Singapore

Research and Development

- Technological progress: Main reason why living standards rise over the long run
- Knowledge is a public good
  - Ideas can be shared freely, increasing the productivity of many
- Policies to promote technological progress:
  - Patent laws
  - Tax incentives or direct support for private sector R&D
  - Grants for basic research at universities

Ask the Experts: Innovation and Growth

"Future innovations worldwide will not be transformational enough to promote sustained per-capita economic growth rates in the United States and western Europe over the next century as high as those over the past 150 years."



Source: IGM Economic Experts Panel, February 11, 2014.

Active Learning 2: Why Is So Much of Africa Poor?

- Many of the poorest people on the planet live in sub-Saharan Africa
  - In 2020, GDP per person in this region was only $3,821 (22% of the world average)
  - 40% of population lives on less than $1.90 per day
- Discuss some of the reasons (determinants of productivity) that may explain the low economic development in this area

Active Learning 2: Answers

1. Low capital investment
2. Low educational attainment
3. Poor health
4. High population growth
5. Geographic disadvantages
6. Restricted freedom
7. Rampant corruption
8. The legacy of colonization

26-4

Conclusion: The Importance of Long-Run Growth

Conclusion

- Ten Principles of Economics: A country's standard of living depends on its ability to produce goods and services
- Policymakers:
  - Increase productivity by encouraging the rapid accumulation of the factors of production and ensuring these factors are employed as effectively as possible
- Economists
  - Government can lend support to the invisible hand by maintaining property rights, political stability and subsidize specific industries for technological progress

Think-Pair-Share Activity

You are having a discussion with other young people from your generation. The conversation turns to a supposed lack of growth in the United States when compared to some Asian countries such as Japan, South Korea, and China. Your roommate says, “These Asian countries must have cheated somehow. That’s the only way they could have possibly grown so quickly.”

A. Have you learned anything in this chapter that would make you question your roommate’s assertion?

B. The phenomenal growth rate of Japan since World War II has often been referred to as the “Japanese miracle.” Is it a miracle or is it explainable?

C. Are the high growth rates found in these Asian countries without cost?

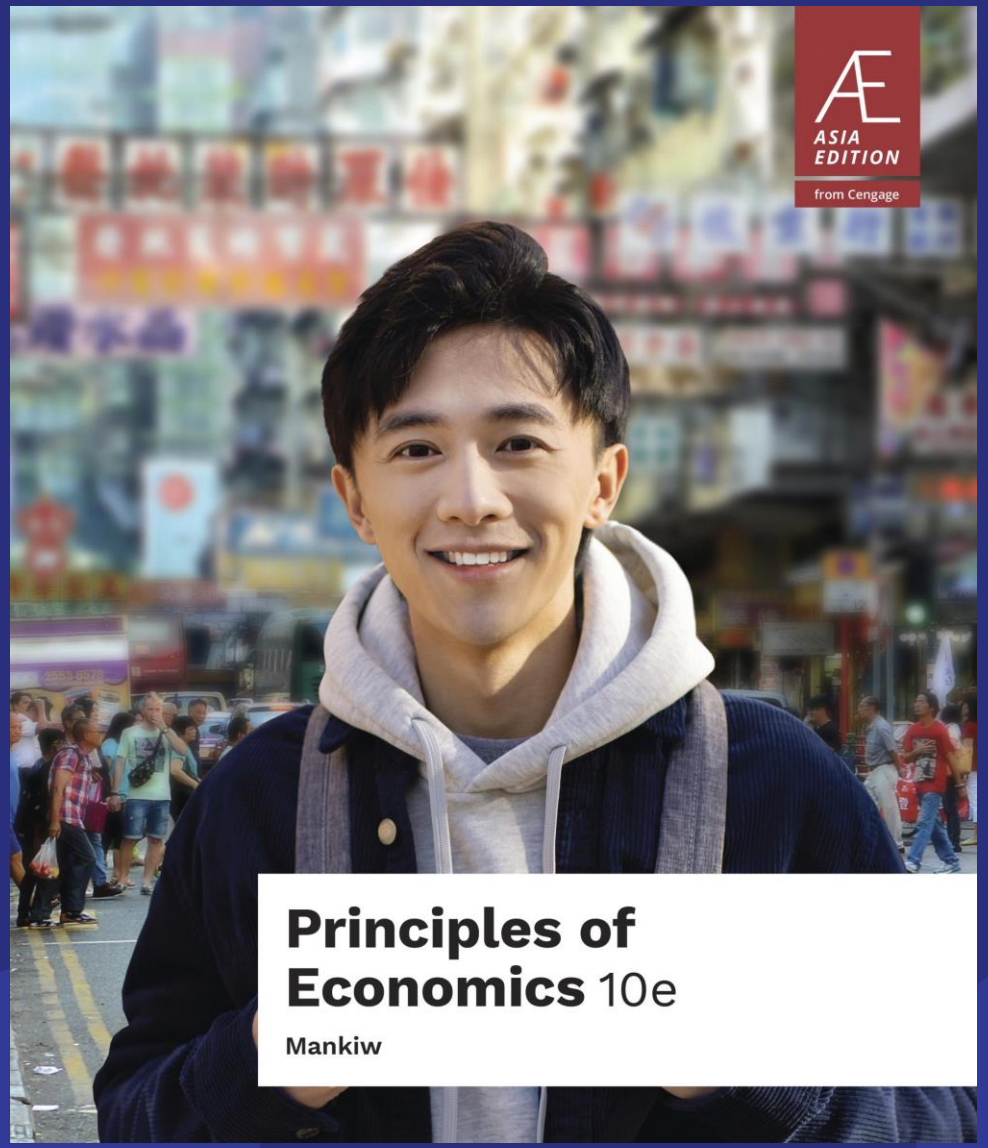
Self-Assessment

- In what way is your college degree a form of capital?

Summary

Click the link to review the objectives for this presentation.

Link to Objectives



Principles of Economics, 10e

Chapter 27: Saving, Investment, and the Financial System

Chapter Objectives (1 of 3)

By the end of this chapter, you should be able to:

- Categorize an event as either saving or investment.
- Explain how financial intermediaries connect borrowers and savers.
- Analyze the relationship between bond prices and the interest rate.
- Explain how financial markets connect borrowers and savers.
- Explain the difference between the bond market and the stock market.
- Explain how government borrowing can lead to crowding out.

Chapter Objectives (2 of 3)

- Analyze how changes in demand impact equilibrium in the market for loanable funds.
- Describe the loanable funds market.
- Explain the relationship between national saving, public saving, and private saving.
- Analyze how changes in the government budget impact equilibrium in the market for loanable funds.
- Explain the saving and investment identity.

Chapter Objectives (3 of 3)

- Analyze how changes in supply impact equilibrium in the market for loanable funds.
- Analyze the relationship between interest rates and quantity demanded.
- Analyze the relationship between interest rates and quantity supplied.
- Identify market equilibrium in the loanable funds market.

27-1

Financial Institutions in an Economy

The Financial System and Financial Institutions

- **Financial system***
  - Group of institutions in the economy that help match one person's saving with another person's investment
- Financial institutions
  - Institutions through which savers can directly provide funds to borrowers
  1. Financial markets
  2. Financial intermediaries

*Words accompanied by an asterisk are key terms from the chapter.

Financial Markets

- **Financial markets***
  - Financial institutions through which savers can directly provide funds to borrowers
  1. The bond market
  2. The stock market

*Words accompanied by an asterisk are key terms from the chapter.

The Bond Market

- **Bond***
  - A certificate of indebtedness that specifies the obligations of the borrower to the buyer of the bond
  - Specifies
    - Date of maturity: Time at which the loan will be repaid
    - Rate of interest: Paid periodically until the date of maturity
    - Principal: Amount borrowed

*Words accompanied by an asterisk are key terms from the chapter.

Bond Characteristics (1 of 3)

1. Term: Length of time until bond matures
   - Short term (months), long term (10-30+ years), perpetuities (never mature)
     - Long-term bonds are riskier than short-term bonds
     - Long-term bonds usually pay higher interest rates

Bond Characteristics (2 of 3)

2. Credit risk: Probability of borrower default
   - Higher interest rates for higher probability of default
   - U.S. government bonds tend to pay low interest rates
   - High-yield bonds (junk bonds), very high interest rates
   - Buyers of bonds can judge credit risk by checking with private agencies that evaluate the financial condition of bond issuers.

Bond Characteristics (3 of 3)

3. Tax treatment
   - Interest on most bonds is taxable income
   - Municipal bonds
     - Issued by state and local governments
     - No tax, lower interest rate
4. Inflation protection
   - Treasury Inflation-Protected Securities (TIPS)
   - Indexed to a measure of inflation: When prices rise, payments rise proportionately

The Stock Market (1 of 2)

- **Stock***
  - Claim to partial ownership in a firm
  - Claim to some of the profits the firm makes
- Equity finance
  - Sale of stock to raise money
- Debt finance
  - Sale of bonds to raise money

*Words accompanied by an asterisk are key terms from the chapter.

The Stock Market (2 of 2)

- Organized stock exchanges
  - Trading stock shares by stockholders
  - The business (that issued the stock) receives no money
- Stock prices
  - Determined by the *supply of and demand* for the stock in these companies
- Stock index
  - Average of a group of stock prices
  - For example, Dow Jones Industrial Average, Standard & Poor's 500 Index, SSE Composite Index, CSI 300 Index, etc.

Financial Intermediaries

- **Financial intermediaries***
  - Financial institutions through which savers can indirectly provide funds to borrowers
  - Most important are banks and mutual funds

*Words accompanied by an asterisk are key terms from the chapter.

Banks

- Primary role for banks:
  - Take in deposits from savers (small interest rate)
  - Use these deposits to make loans to borrowers (charge a higher interest rate)
- Secondary role of banks:
  - Facilitate purchases of goods and services
    - *Medium of exchange* for people to engage in transactions
      - Use *checks, debit cards, and electronic payments* to access deposits
    - Store of value for the wealth that people have accumulated

Mutual Funds

- **Mutual fund***
  - An institution that sells shares to the public and uses the proceeds to buy a portfolio of stocks and bonds
- Advantages
  - Allow people with small amounts of money to *diversify* their holdings (less risk)
  - Give ordinary people access to the skills of professional money managers
- Index funds, buy all the stocks in a stock index
  - Perform somewhat better on average than mutual funds

*Words accompanied by an asterisk are key terms from the chapter.

Summing Up

- An economy contains a large variety of financial institutions
  - Bond market, stock market, banks, mutual funds, pension funds, credit unions, insurance companies
- Important to keep in mind that financial institutions all serve the same goal
  - Directing the resources of savers into the hands of borrowers

27-2

Saving and Investment in the National Income Accounts

Some Important Identities

- **Accounting** refers to the way in which various numbers are defined and added up
- Rules of national income accounting include several Important identities
- **Identity**
  - An equation that must be true because of the way the variables in the equation are defined
  - Clarify how different variables are related to one another

GDP

- Gross domestic product (GDP, *Y*)
  - Total income = Total expenditure
- $Y = C + I + G + NX$
  - Y = gross domestic product, GDP
  - C = consumption
  - I = investment
  - G = government purchases
  - NX = net exports

Closed and Open Economies

- Closed economy
  - Does not interact with other economies
  - $NX = 0$
- Open economy
  - Interacts with other economies
  - $NX \neq 0$

Closed Economy

- **National saving*** (*S*)
  - Total income in the economy that remains after paying for consumption and government purchases
- Assume closed economy: $NX = 0$

$$Y = C + I + G$$

$$Y - C - G = I$$

$$S = Y - C - G$$

$$\boldsymbol{S = I}$$

*Words accompanied by an asterisk are key terms from the chapter.

Private and Public Saving

- Define T = Taxes minus transfer payments

  $S = Y - C - G$, *or* $S = (Y - T - C) + (T - G)$

- **Private saving*** $(Y - T - C)$
  - Income that households have left after paying for taxes and consumption
- **Public saving*** $(T - G)$
  - Tax revenue that the government has left after paying for its spending
- **National saving (*S*) = Private saving + Public saving**

*Words accompanied by an asterisk are key terms from the chapter.

Budget Surplus and Deficit

- **Budget surplus*** ($T - G > 0$)
  - Excess of tax revenue over government spending = Public saving
- **Budget deficit*** ($T - G < 0$)
  - Shortfall of tax revenue from government spending = –Public saving

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning: Applying the Concepts

- You have the following information: GDP = $19 trillion, *C* = $13 trillion, *G* = $2.5 trillion, and Budget deficit = $1.2 trillion.
- Find public saving, net taxes, private saving, national saving, and investment.

Active Learning: Answers

- Public saving: $T - G = -$ \$1.2 trillion
- Net taxes: T = \$1.3 trillion

  $G - T = 1.2$, $G = 2.5$, so $T = 2.5 - 1.2 = 1.3$
- Private saving: \$4.7 trillion

  $= Y - T - C = 19 - 1.3 - 13 = 4.7$
- National saving = Investment: $S = I$ = \$3.5 trillion

  $S = Y - C - G = 19 - 13 - 2.5 = 3.5$

  S = Private + Public saving $= 4.7 - 1.2 = 3.5$

The Meaning of Saving and Investment (1 of 2)

- Private saving
  - Income remaining after households pay their taxes and pay for consumption
  - Examples of what households do with saving
    - Buy corporate bonds or equities
    - Purchase a certificate of deposit at the bank
    - Buy shares of a mutual fund
    - Let accumulate in saving or checking accounts

The Meaning of Saving and Investment (2 of 2)

- Investment
  - The purchase of new capital
- Examples of investment
  - General Motors spends $250 million to build a new factory in Ohio
  - You buy $5,000 worth of computer equipment for your business
  - Your parents spend $300,000 to have a new house built
- Although saving and investment are equal for the overall economy, banks and other financial institutions make individual differences between saving and investment possible

27-3

The Market for Loanable Funds

Market for Loanable Funds: A Model

- **Market for loanable funds***
  - The market in which those who want to save supply funds and those who want to borrow to invest demand funds
  - A supply–demand model of the financial system
- Helps us understand
  - How the financial system coordinates saving & investment
  - How government policies and other factors affect saving, investment, the interest rate

*Words accompanied by an asterisk are key terms from the chapter.

Supply and Demand for Loanable

- Assume only one financial market
  - All savers deposit their saving in this market
  - All borrowers take out loans from this market
  - There is one interest rate, which is both the return to saving and the cost of borrowing

The Supply of Loanable Funds

- Saving is the source of the supply of loanable funds
  - Households with extra income can loan it out and earn interest
  - Public saving
    - If positive, adds to national saving and the supply of loanable funds
    - If negative, it reduces national saving and the supply of loanable funds

The Demand for Loanable Funds

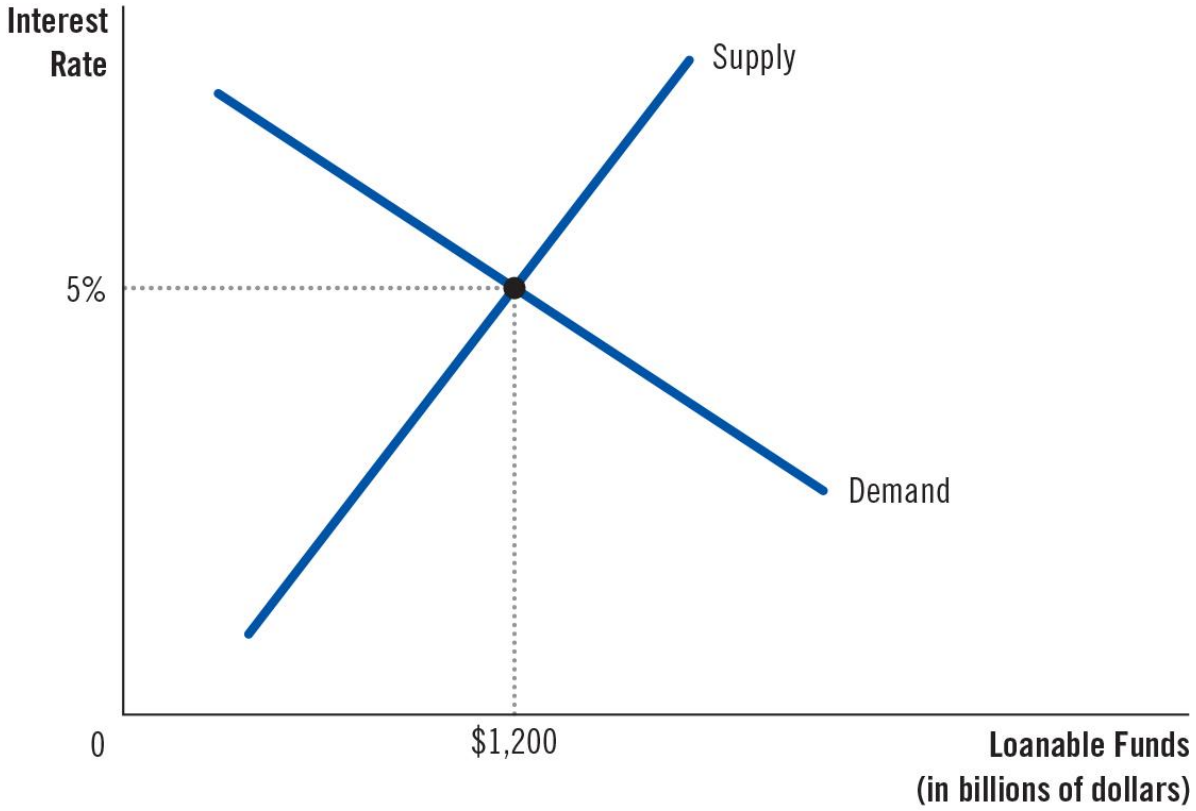
- Investment is the source of the demand for loanable funds
  - Firms borrow the funds they need to pay for new equipment, factories, etc.
  - Households borrow the funds they need to purchase new houses
- Remark: the supply and demand for loanable funds depend on the *real* (rather than nominal) interest rate. For the rest of this chapter, when you see the term interest rate, remember that we are talking about the real interest rate.

Reaching Equilibrium

- If interest rate < equilibrium
  - $Q_S < Q_D$, so shortage of loanable funds
  - Encourage lenders to raise the interest rate
    - Encourage saving (increase Q_S)
    - Discourage borrowing for investment (decreasing Q_D)
- If interest rate > equilibrium
  - Surplus of loanable funds
  - Decrease interest rate to compete for borrowers

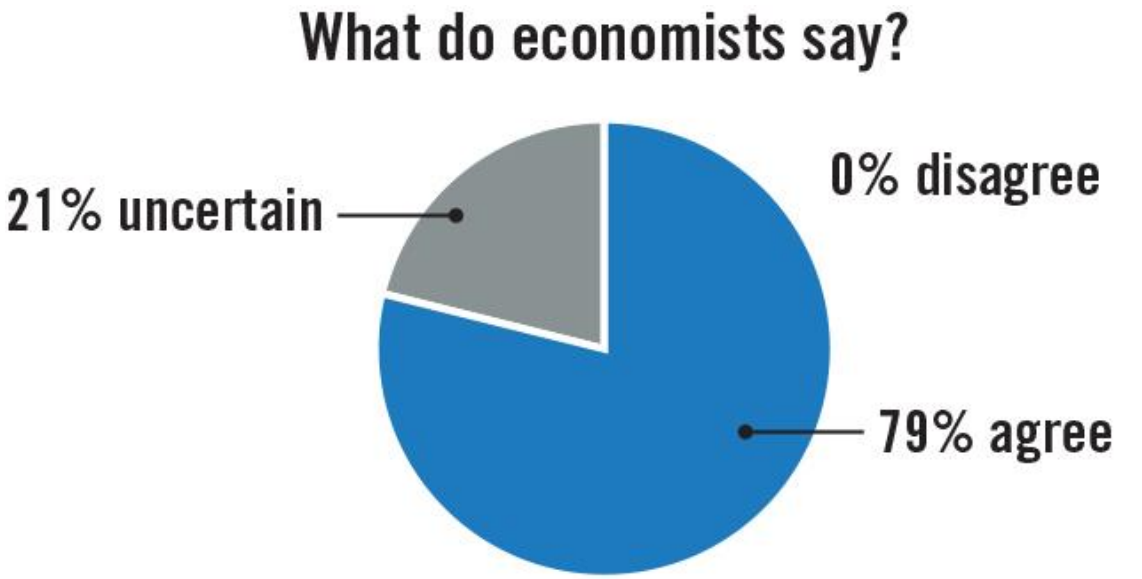
Figure 1 The Market for Loanable Funds

- The interest rate in the economy adjusts to balance the supply and demand for loanable funds.
- The supply of loanable funds comes from national saving, both private and public.
- The demand for loanable funds comes from firms and households that want to borrow for purposes of investment.
- Here, the equilibrium interest rate is 5 percent, and $1,200 billion of loanable funds are supplied and demanded.



Ask the Experts: Fiscal Policy and Saving

"Sustained tax and spending policies that boost consumption in ways that reduce the saving rate are likely to lower long-run living standards."



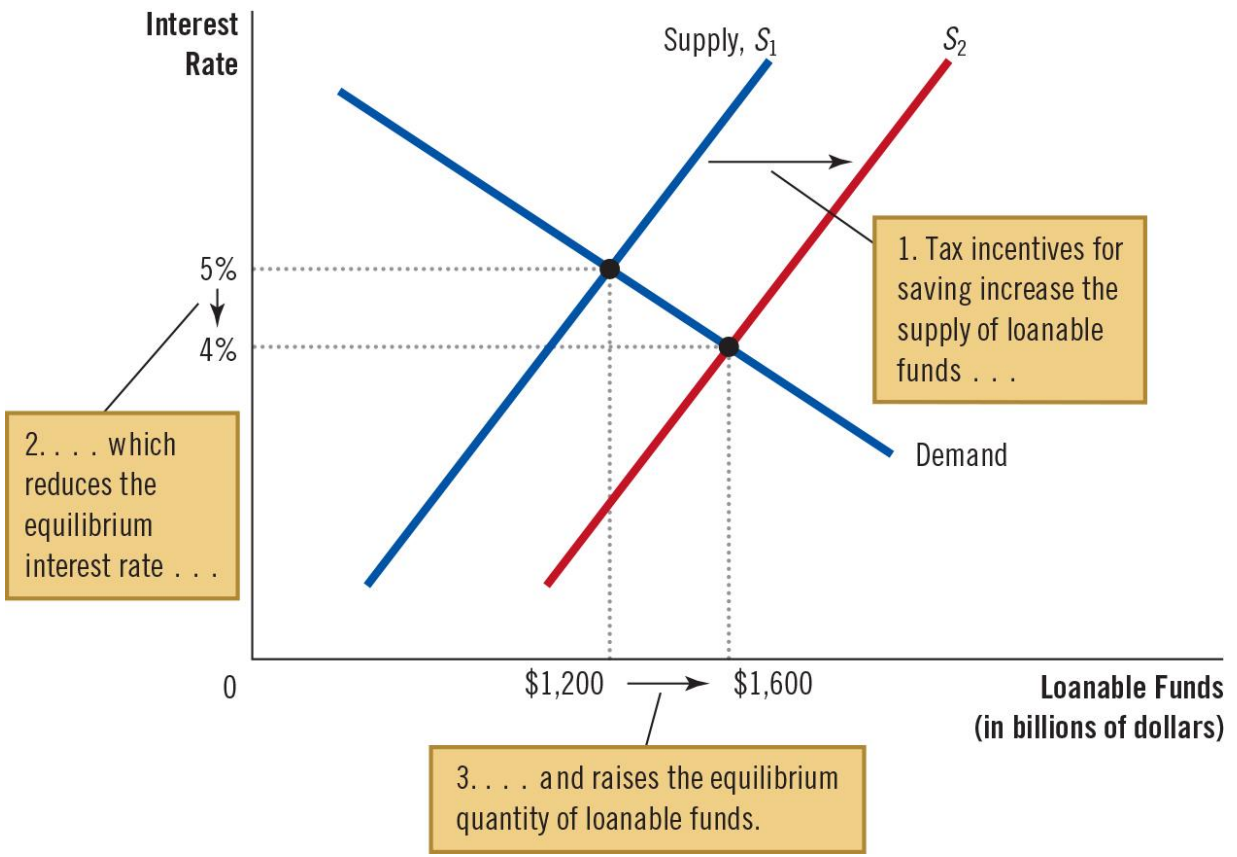
Source: IGM Economic Experts Panel, July 8, 2013.

Policy 1: Saving Incentives

- If a reform of the tax laws encourages greater saving, e.g., Individual Retirement Accounts, the result is lower interest rates and greater investment
- Ten Principles of Economics: People respond to incentives
  - Increase in supply
  - New equilibrium
    - Lower interest rate
    - Higher quantity of loanable funds
  - Greater S and I

Figure 2 Saving Incentives Increase the Supply of Loanable Funds

- A change in the tax laws to encourage Americans to save more shifts the supply of loanable funds to the right from S_1 to S_2.
- As a result, the equilibrium interest rate falls, and the lower interest rate stimulates investment.
- Here, the equilibrium interest rate falls from 5 percent to 4 percent, and the equilibrium quantity of loanable funds saved and invested rises from $1,200 billion to $1,600 billion.



Policy 2: Investment Incentives

- If a reform of the tax laws encourages greater investment, e.g., instituting an investment tax credit, the result is higher interest rates and greater saving
  - Increase in demand
    - Demand curve shifts right
  - New equilibrium
    - Higher interest rate
    - Higher quantity of loanable funds
  - Greater S and I

Figure 3 Investment Incentives Increase the Demand for Loanable Funds

- If the passage of an investment tax credit encourages firms to invest more, the demand for loanable funds increases.
- As a result, the equilibrium interest rate rises, and the higher interest rate stimulates saving.
- Here, when the demand curve shifts from D_1 to D_2, the equilibrium interest rate rises from 5 percent to 6 percent, and the equilibrium quantity of loanable funds saved and invested rises from $1,200 billion to $1,400 billion.

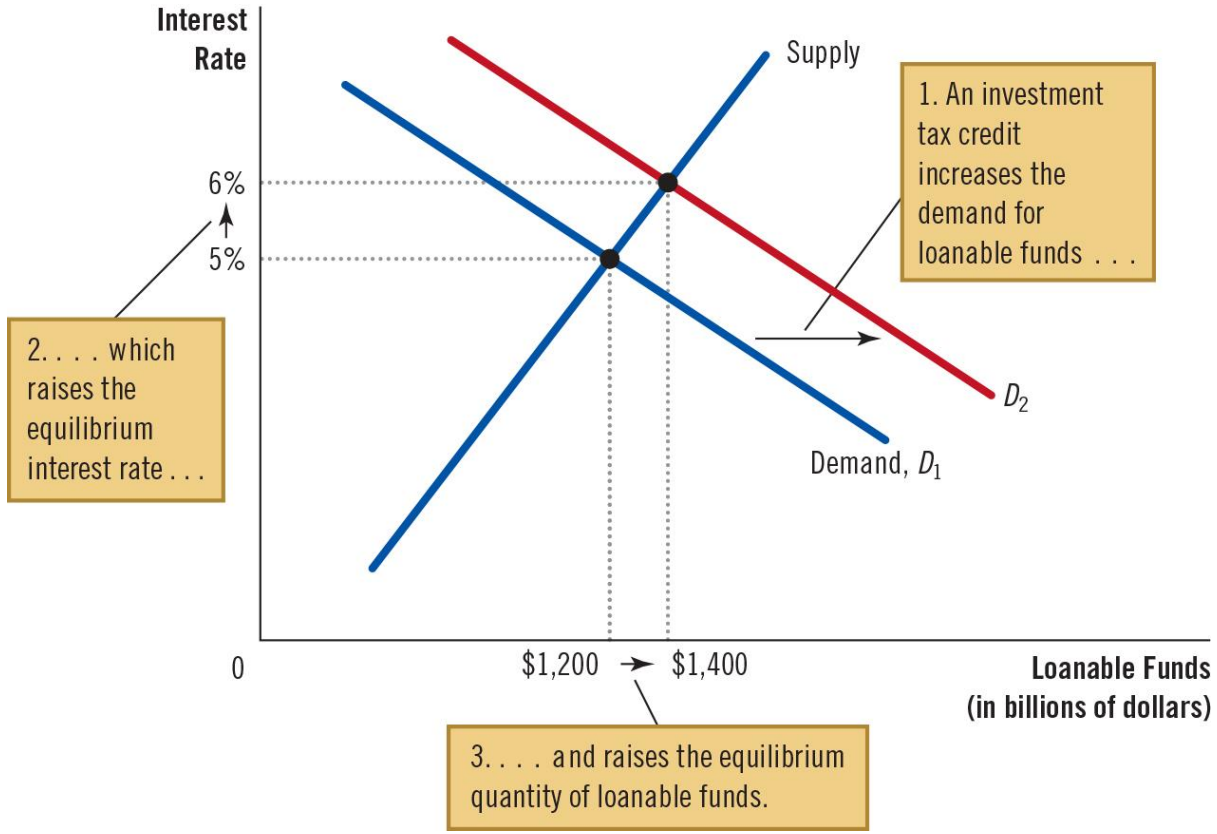
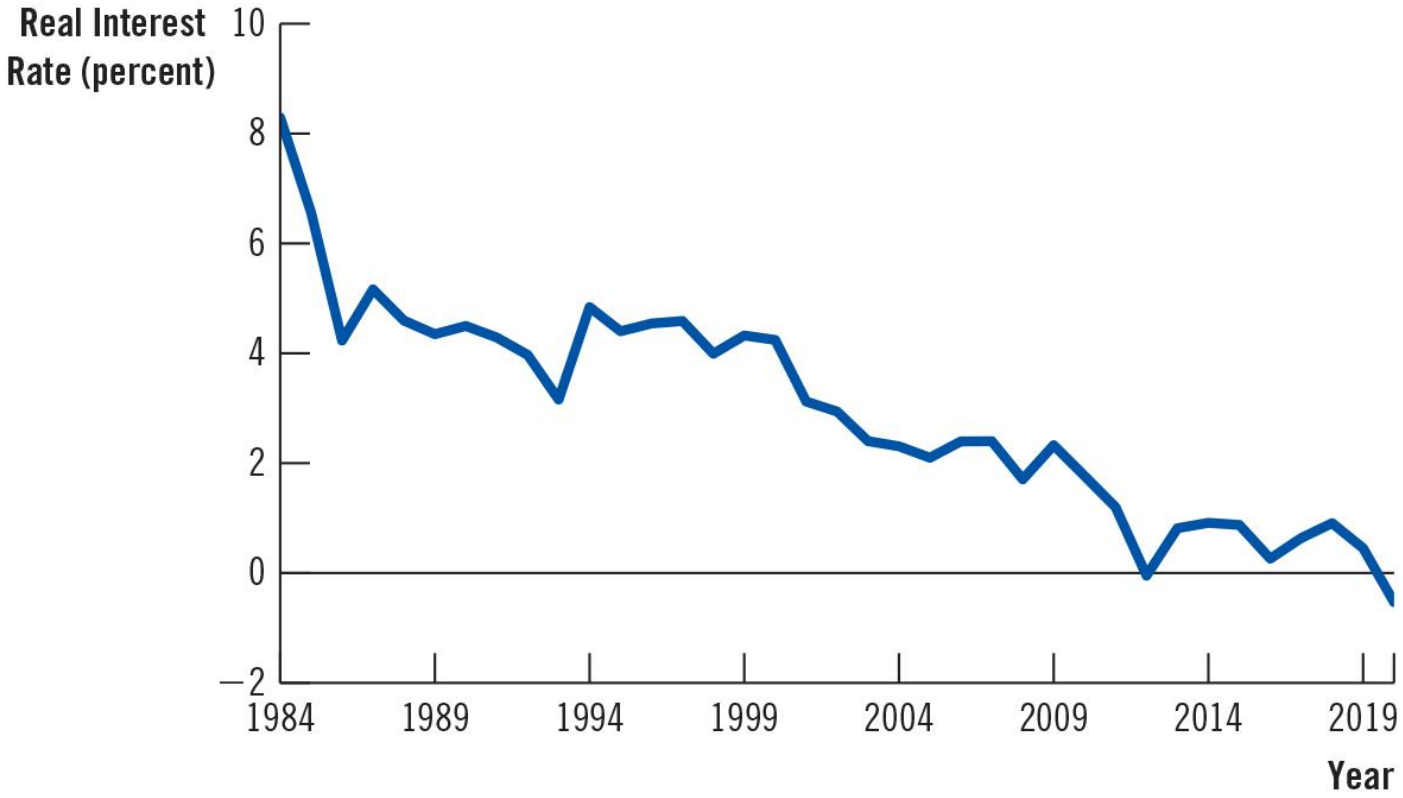


Figure 4 The Decline in the Real Interest Rate

- The real interest rate declined substantially from 1984 to 2020.
- The reason is a puzzle, though various hypotheses have been proposed.



Source: The Federal Reserve, the Department of Commerce, and the author's calculations. The real interest rate presented here is the yield on 10-year Treasury bonds minus the core inflation rate (based on the PCE deflator excluding food and energy) as a measure of expected inflation.

Policy 3: Government Budget Deficits and Surpluses (1 of 3)

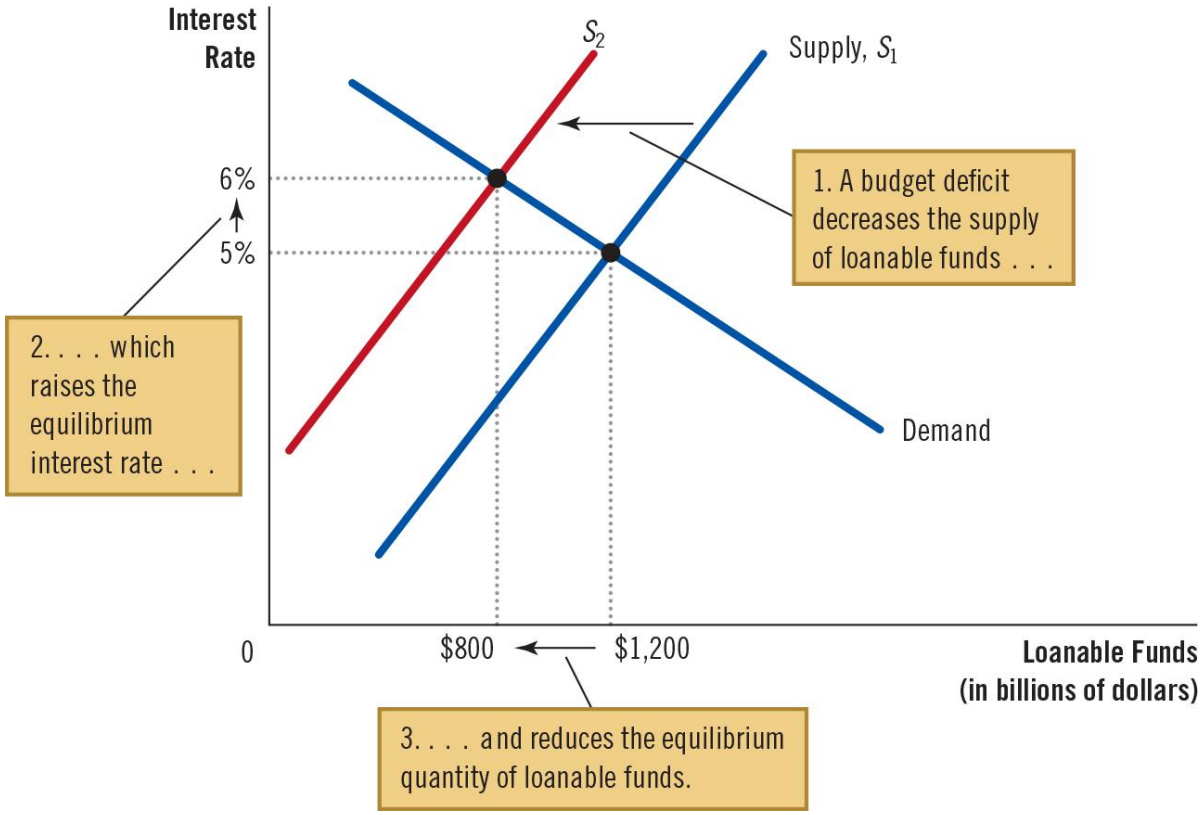
- Budget deficit
  - Excess of government spending over tax revenue
  - Governments finance budget deficits by borrowing in the bond market
  - Government debt: Accumulation of past government borrowing
- Budget surplus
  - Excess of tax revenue over government spending
- Balanced budget
  - Government spending exactly equals tax revenue

Policy 3: Government Budget Deficits and Surpluses (2 of 3)

- Government starts with a balanced budget then runs budget deficit
  - Change in supply of loanable funds (= private + public saving)
  - Decrease in supply
    - Supply curve shifts left
  - New equilibrium
    - Higher interest rate
    - Smaller quantity of loanable funds

Figure 5 The Effect of a Government Budget Deficit

- When the government spends more than it receives in tax revenue, the resulting budget deficit lowers national saving.
- The supply of loanable funds decreases, and the equilibrium interest rate rises.
- Thus, when the government borrows to finance its budget deficit, *it crowds out households and firms that otherwise would borrow to finance investment.*
- Here, when the supply curve shifts from S_1 to S_2, the equilibrium interest rate rises from 5 percent to 6 percent, and the equilibrium quantity of loanable funds saved and invested falls from $1,200 billion to $800 billion.



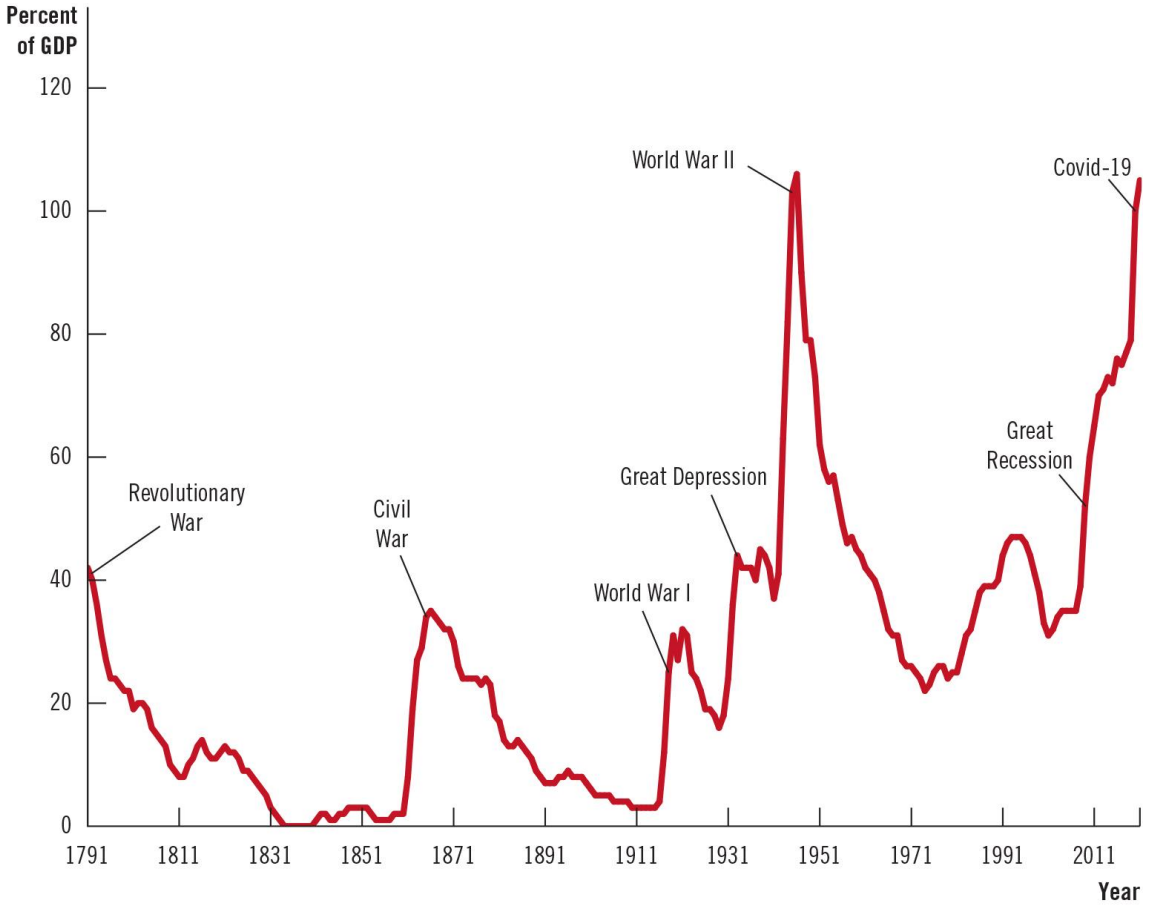
Policy 3: Government Budget Deficits and Surpluses (3 of 3)

- **Crowding out***
  - Decrease in investment that results from government borrowing
- A budget deficit reduces national saving, decreases the supply of loanable funds, raises the interest rate, and investment falls
- A budget surplus increases the supply of loanable funds, reduces the interest rate, and stimulates investment

*Words accompanied by an asterisk are key terms from the chapter.

Figure 6 The U.S. Government Debt

The debt of the U.S. federal government, expressed here as a percentage of GDP, has varied throughout history. Wars and deep economic downturns are typically associated with substantial increases in government debt.



Source: U.S. Department of Treasury; U.S. Department of Commerce; and T. S. Berry, "Production and Population since 1789," Bostwick Paper No. 6, Richmond, 1988. The data here are for government debt held by the public, which excludes government debt held in government accounts, such as the Social Security trust fund.

27-4

Conclusion

Conclusion

- Ten Principles of Economics: Markets are usually a good way to organize economic activity
- When financial markets bring the supply and demand for loanable funds into balance, they help allocate the economy's scarce resources to their most efficient uses
- Financial markets link the present and the future
- Well-functioning financial markets are important not only for current generations but also for future generations who will inherit many of the benefits

Think-Pair-Share Activity

You are watching a presidential debate. When a candidate is questioned about his position on economic growth, the presidential candidate steps forward and says, “We need to get this country growing again. We need to use tax incentives to stimulate saving and investment, and we need to get that budget deficit down so that the government stops absorbing our nation’s saving.”

A. If G remains unchanged, what inconsistency is implied by the presidential candidate’s statement?

B. If the presidential candidate truly wishes to decrease taxes and decrease the budget deficit, what has the candidate implied about his plans for G?

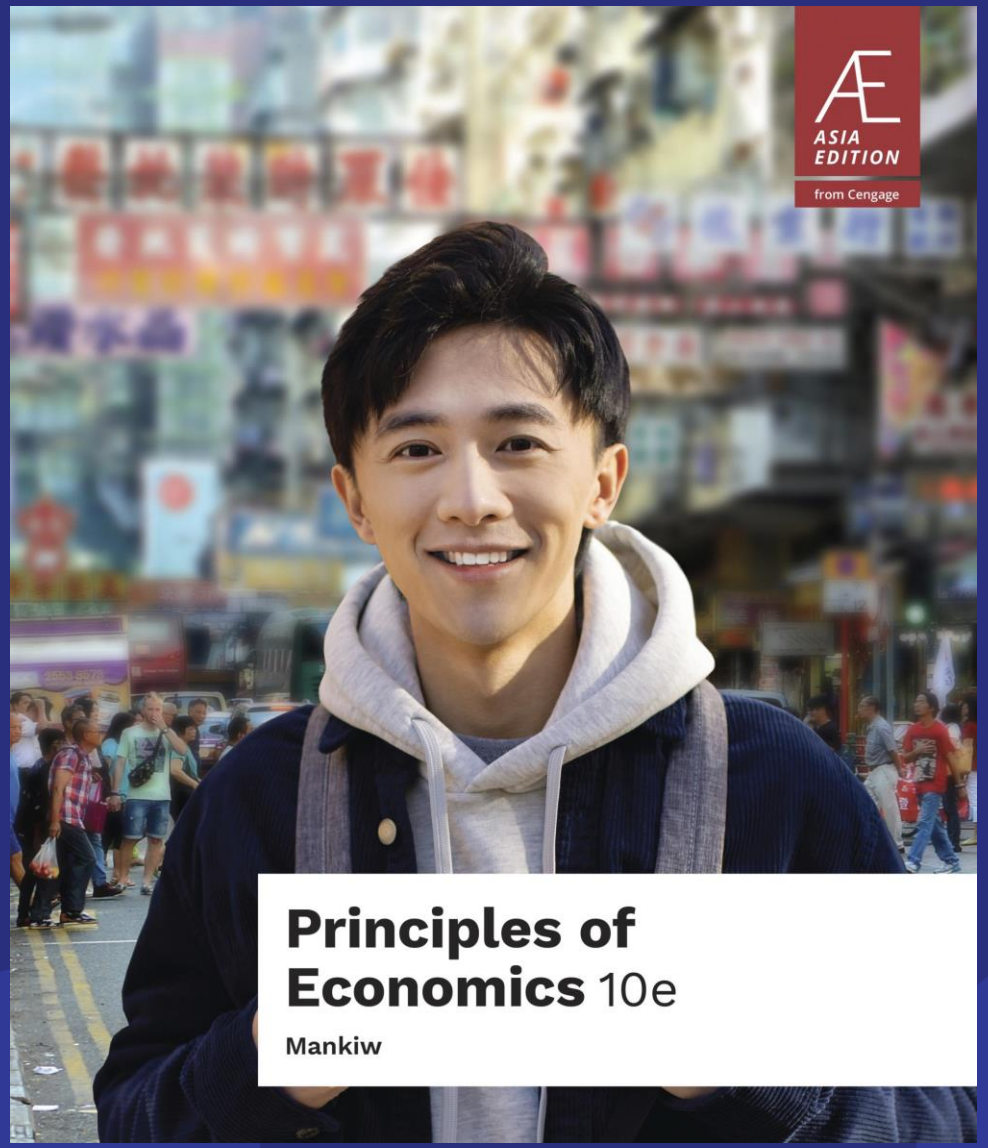
Self-Assessment

- What is a government budget deficit? How does it affect interest rates, investment, and economic growth?

Summary

Click the link to review the objectives for this presentation.

Link to Objectives



Principles of Economics, 10e

Chapter 29: Unemployment

Chapter Objectives (1 of 2)

By the end of this chapter, you should be able to:

- Explain why a natural rate of unemployment exists.
- Analyze the presence of unemployment in an economy.
- Categorize the type of unemployment in a given scenario as structural, frictional, or cyclical.
- Identify an individual's employment status in a given scenario.
- Calculate the labor force participation rate in a given scenario.

Chapter Objectives (2 of 2)

- Determine how discouraged workers impact the unemployment rate.
- Calculate the unemployment rate for an economy.
- Identify whether a given policy will reduce frictional unemployment.
- Analyze the effect of unions and collective bargaining on the labor market.

29-1

Identifying Unemployment

How Is Unemployment Measured?

- Unemployment statistics are produced by Bureau of Labor Statistics (BLS), in the U.S. Department of Labor
  - Based on a monthly survey of 60,000 households: Current Population Survey
  - Based on “adult population” (16 yrs. or older)
- BLS divides population into 3 groups
  - Employed
  - Unemployed
  - Not in the labor force

Employed

- Full-time and part-time workers
  - Paid employees, self-employed, and unpaid workers in a family business, full-time and part-time
  - Worked without pay in family member's business
  - Temporarily absent because of vacation, illness, bad weather, or similar reasons

Unemployed

- People not working, are available for work, and have looked for work during previous 4 weeks
- Those waiting to be recalled to a job after a temporary layoff

Not in the Labor Force

- Those not employed and not unemployed
  - Full-time students
  - Homemakers
  - Retirees

Unemployment Rate

- **Labor force***
  - Total number of workers, including both the employed and unemployed
- **Unemployment rate***
  - Percentage of the labor force that is unemployed

$$\text{Unemployment rate} = \frac{\text{Number of unemployed}}{\text{Labor force}} \times 100$$

*Words accompanied by an asterisk are key terms from the chapter.

Labor-Force Participation Rate

- **Labor-force participation rate***
  - Percentage of the adult population that is in the labor force
  - Computed for both the entire adult population and specific groups

$$\text{Unemployment rate} = \frac{\text{Number of unemployed}}{\text{Labor force}} \times 100$$

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning 1: Calculate Labor Force Statistics

Compute the labor force, unemployment-rate, adult population, and labor force participation rate using the following data

Adult population of the U.S. by group, July 2022

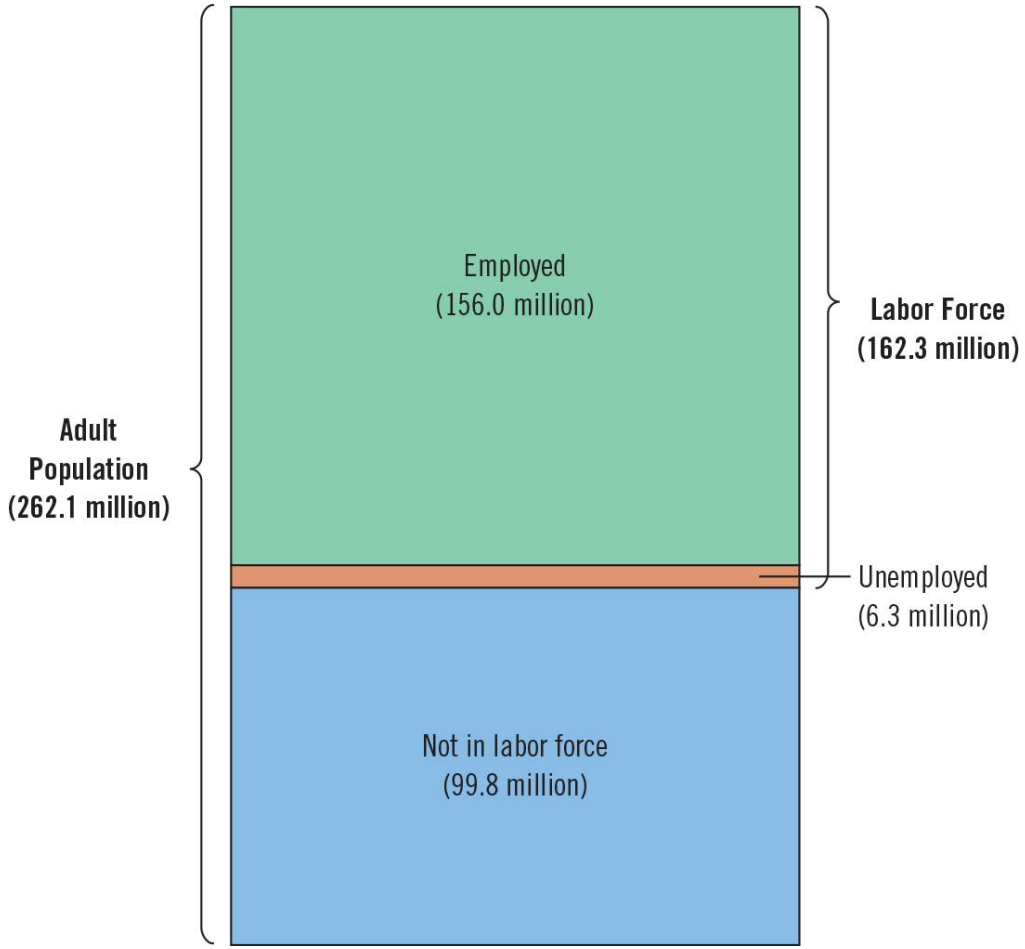
Number of employed	158.3 million
Number of unemployed	5.7 million
Not in labor force	100.1 million

Active Learning 1: Answers

- Labor force = Employed + Unemployed = 158.3 + 5.7 = 164 million
- Unemployment rate = 100 × (Unemployed)/(Labor force) = 100 × 5.7/164 = 3.5%
- Adult population = Labor force + Not in labor force = 164 + 100.1 = 264.1 million
- LFPR = 100 × (Labor force)/(Adult population) = 100 × 164/264.1 = 62.1%

Figure 1 The Breakdown of the Population in December 2021

The Bureau of Labor Statistics divides the adult population into three categories: employed, unemployed, and not in the labor force.



Source: Bureau of Labor Statistics.

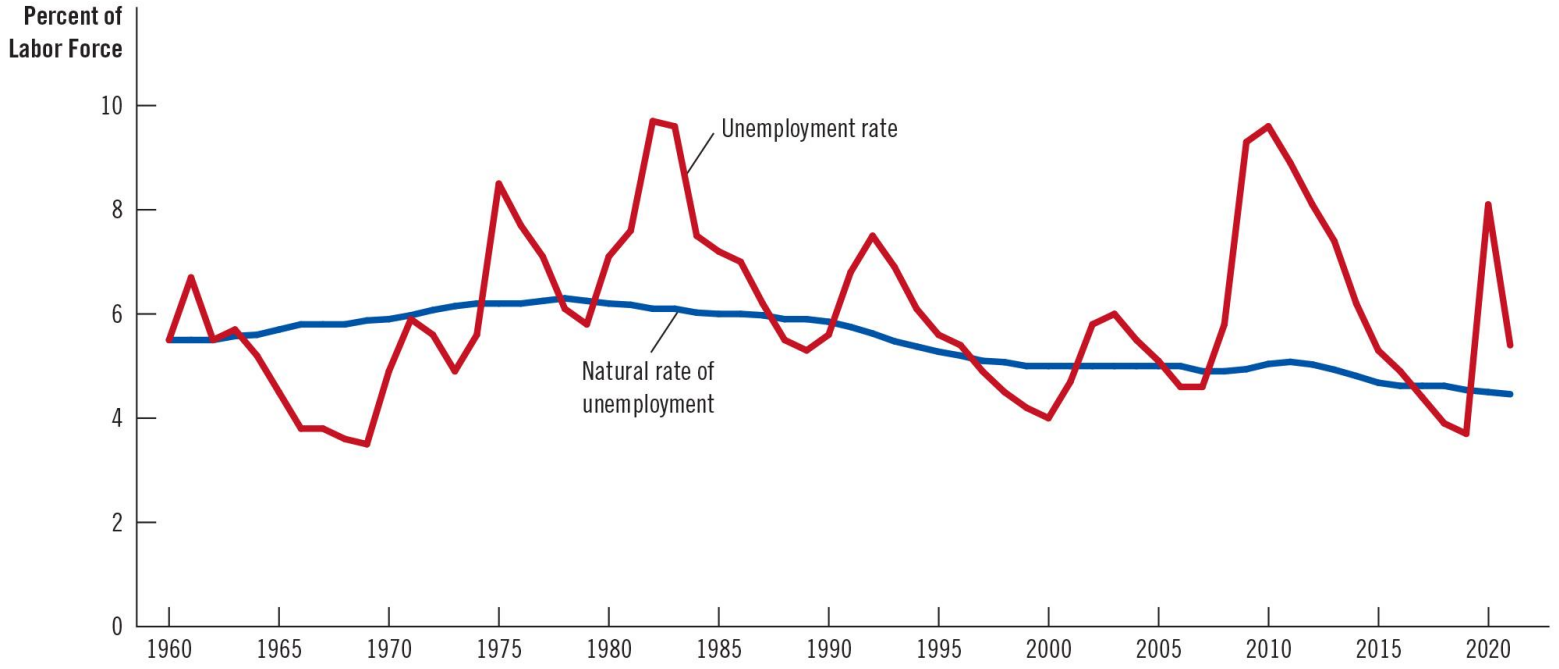
Unemployment

- **Natural rate of unemployment***
  - Normal rate of unemployment around which the unemployment rate fluctuates
- **Cyclical unemployment***
  - Deviation of unemployment from its natural rate
  - Associated with short-run fluctuations in economic activity

*Words accompanied by an asterisk are key terms from the chapter.

Figure 2 Unemployment Rate since 1960

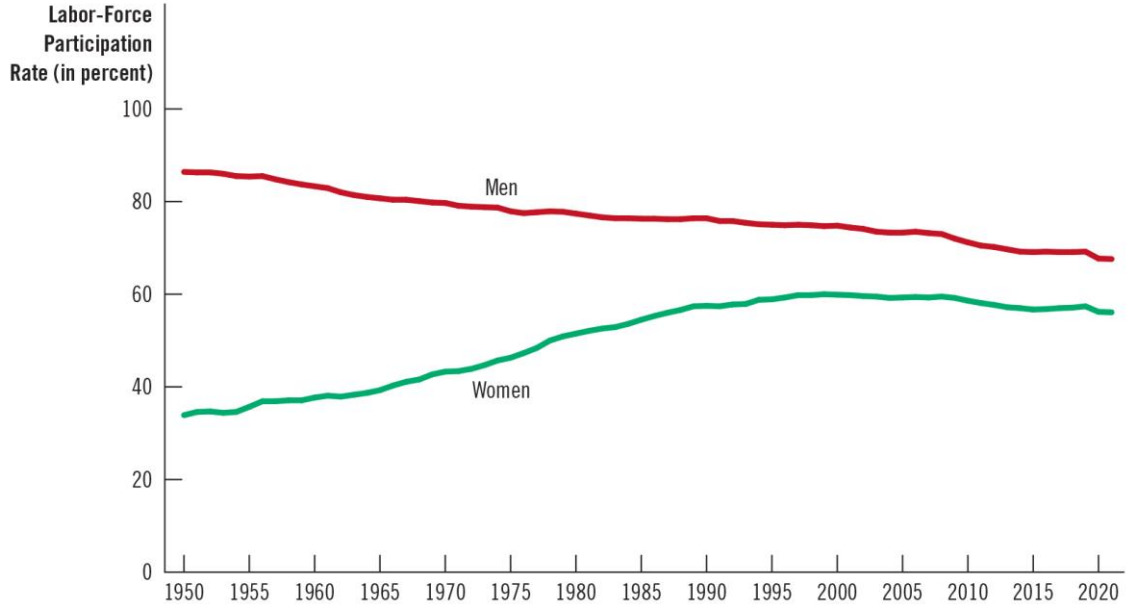
This graph uses annual data on the U.S. unemployment rate to show the percentage of the labor force without a job. The natural rate of unemployment is the normal level of unemployment around which the unemployment rate fluctuates.



Source: U.S. Department of Labor, Congressional Budget Office.

Figure 3 Labor-Force Participation Rates for Men and Women since 1950

This figure shows the percentage of adult men and women who are members of the labor force. It shows that, over the past several decades, women have entered the labor force, and men have left it.



Source: U.S. Department of Labor.

Does the Unemployment Rate Measure What We Want It to Measure?

- The unemployment rate
  - Not a perfect indicator of joblessness or the health of the labor market
    - It excludes discouraged workers
    - It does not distinguish between full-time and part-time work, or people working part time because full-time jobs not available
    - Some people misreport their work status
  - Still a very useful barometer of the labor market & economy

Discouraged Workers

- **Discouraged workers***
  - Individuals who would like to work but have given up looking for a job
- Some of those who report being unemployed may not be trying hard to find a job
  - Want to qualify for a government help
  - Working but paid “under the table”

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning 2: Limitations of the Unemployment Rate

- In each of the following, what happens to the unemployment rate? Does the unemployment rate give an accurate impression of what's happening in the labor market?

  A. Hailey lost her job and begins looking for a new one

  B. Josiah, a steelworker who has been out of work since his mill closed last year, becomes discouraged and gives up looking for work

Active Learning 2: Answers

A. Unemployment rate rises
   - Number of unemployed increases, labor force stays the same
   - A rising unemployment rate gives the impression that the labor market is worsening, and it is

B. Discouraged workers would like to work but have given up looking for jobs. Classified as “not in the labor force” rather than “unemployed”
   - Unemployment rate falls because Josiah is no longer counted as unemployed
   - A falling unemployment rate gives the impression that the labor market is improving, but it is not

How Long Are the Unemployed without Work?

- Most spells of unemployment are short
  - Typically, 1/3 of the unemployed have been unemployed under 5 weeks, 2/3 have been unemployed under 14 weeks
  - Only 19.3% have been unemployed over 6 months
- Most unemployment observed at any given time is long term
  - The small group of long-term unemployed persons has fairly little turnover, so it accounts for most of unemployment observed over time

Table 1 Measures of Labor Underutilization (1 of 2)

The table shows various measures of joblessness for the U.S. economy. The data are for December 2021.

Measure	Description	Rate
U-1	Persons unemployed 15 weeks or longer, as a percent of the civilian labor force (includes only very long-term unemployed)	1.7%
U-2	Job losers and persons who have completed temporary jobs, as a percent of the civilian labor force (excludes job leavers)	1.9
U-3	Total unemployed, as a percent of the civilian labor force (official unemployment rate)	3.9
U-4	Total unemployed, plus discouraged workers, as a percent of the civilian labor force plus discouraged workers	4.3
U-5	Total unemployed plus all marginally attached workers, as a percent of the civilian labor force plus all marginally attached workers	4.9
U-6	Total unemployed, plus all marginally attached workers, plus total employed part-time for economic reasons, as a percent of the civilian labor force plus all marginally attached workers	7.3

Table 1 Measures of Labor Underutilization (2 of 2)

Note: The Bureau of Labor Statistics defines terms as follows:

- Marginally attached workers are people neither working nor looking for work but indicate that they want and are available for a job and have looked for work sometime in the recent past.
- Discouraged workers are marginally attached workers who have given a job-market-related reason for not currently looking for a job.
- Persons employed part-time for economic reasons are those who want and are available for full-time work but have had to settle for a part-time schedule.

Source: U.S. Department of Labor.

Why Are There Always Some People Unemployed?

- **Frictional unemployment***
  - Unemployment that results because it takes time for workers to search for the jobs that best suit their tastes and skills
  - Short-term for most workers
- **Structural unemployment***
  - Unemployment that results because the number of jobs available in some labor markets is insufficient to provide a job for everyone who wants one
  - Usually, longer-term

*Words accompanied by an asterisk are key terms from the chapter.

29-2

Job Search

Why Some Frictional Unemployment Is Inevitable

- **Job search***
  - The process by which workers find appropriate jobs given their tastes and skills
- Some frictional unemployment is inevitable
  - Because the economy is always changing
  - Sectoral shifts: changes in the composition of demand among industries or regions
  - Changing patterns of international trade

*Words accompanied by an asterisk are key terms from the chapter.

Public Policy and Job Search (1 of 3)

- Government-run employment agencies
  - Provide information about job vacancies
- Public training programs
  - Aim to ease workers' transition from declining to growing industries
  - Help disadvantaged groups escape poverty

Public Policy and Job Search (2 of 3)

- Advocates
  - Keeps the labor force more fully employed
  - Reduce the inequities inherent in a constantly changing market economy

Public Policy and Job Search (3 of 3)

- Critics
  - Should the government get involved with the process of job search?
  - Better to let the private market match workers and jobs
  - The government is most likely worse
    - Disseminating the right information to the right workers
    - Deciding what kinds of worker training would be most valuable

Unemployment Insurance (1 of 2)

- **Unemployment insurance***
  - A government program that partially protects the incomes of workers who become unemployed
  - Increases frictional unemployment
- Who qualifies?
  - Only the unemployed who were laid off because their previous employers no longer needed their skills

*Words accompanied by an asterisk are key terms from the chapter.

Unemployment Insurance (2 of 2)

- Benefits of unemployment insurance
  - Reduces income uncertainty
  - Unemployed have more time to search
  - Unemployed can look for jobs that better suit their tastes and skills
  - Improves the ability of the economy to match each worker with the most appropriate job

Active Learning 3: Structural or Frictional Unemployment?

- Which of the following would be most likely to reduce frictional unemployment?
  A. The government eliminates the minimum wage
  B. The government increases unemployment insurance benefits
  C. More workers post their resumes at LinkedIn.com, and more employers use LinkedIn.com to find suitable workers to hire
  D. Sectoral shifts become more frequent

Active Learning 3: Answers

A. Likely to reduce structural unemployment, not frictional unemployment

B. Likely to increase frictional unemployment, not reduce it

C. Likely to speed up the process of matching workers & jobs, which would reduce frictional unemployment

D. Likely to increase frictional unemployment, not reduce it

29-6

Conclusion

Conclusion

- The economy's natural rate changes over time
- Natural rate of unemployment evolves
- Unemployment is not a simple problem with a simple solution
- How we choose to organize our society can profoundly influence how prevalent a problem it is

Think-Pair-Share Activity

While watching the news, the news anchor says, “Unemployment statistics released by the Department of Labor today show an increase in unemployment from 6.1 to 6.2%. This is the third month in a row where the unemployment rate has increased.” Your roommate says, “Every month there are fewer and fewer people with jobs. I don’t know how much longer the country can continue like this.”

A. Can your roommate’s statement be deduced from the unemployment rate statistic? Why or why not?

B. What information would you need to determine whether there are really fewer people with jobs?

Self-Assessment

- Are minimum-wage laws a better explanation for structural unemployment among teenagers or among college graduates? Why?

Summary

Click the link to review the objectives for this presentation.

Link to Objectives