

《宏观经济学》课程教学大纲

一、课程基本信息

课程代码：16004603

课程名称：《宏观经济学》（全英）

英文名称：Microeconomics

课程类别：学科基础课

学时：48 学时

学分：3 学分

适用对象：财务管理专业本科

考核方式：考试

先修课程：微观经济学

二、课程简介

中文简介：

宏观经济学是以整个国民经济为研究对象，通过研究和分析经济总量的决定及其变化，来考察国民经济整体的运行功能，进而说明资源如何才能在全社会范围内得以充分利用这一问题的。该课程的核心理论是国民收入决定理论。宏观经济学在研究国民收入决定的基础上，论证了政府的财政和货币政策及其组合能够从不同的方向影响国民收入。另外，宏观经济学也专门分析了失业、经济增长和经济周期等问题。本课程的教学内容主要由国民收入核算理论、决定理论、经济波动理论和增长理论，以及宏观经济政策等构成。

英文简介：

Macroeconomics is the study of the whole national economy, which researches and analyzes determinants and changes of total variables to explain how the whole economy works and how the resources are fully allocated in a society. Its central theories are to analyze how a national income can be determined and how the resources can be fully used and the ways to realize economic stable growth. Macroeconomics remedies the defects of market mechanism in order to build theoretical basis on government intervention. What's more, it provides theoretical and practicable standards for government to apply flexibly macroeconomic policies. The textbook consists of basic theories such as the measurement of national income, economic fluctuation and economic growth, macroeconomic policies and so on.

三、课程性质与教学目的

课程性质：本课程为学科基础课。主要任务让学生掌握描述宏观经济的总量、宏观经济均衡运行的条件以及凯恩斯主义及其他学派的宏观经济理论，认识和理解国家有关宏观经济政策，并能够运用这些理论分析实际经济问题。

教学目的：本课程为学生讲授宏观经济的主要总量概念、宏观经济的主要理论和宏观经济政策。主要培养学生对宏观经济运行的抽象理解能力以及对实际现象和问题的分析解决能力。

思政设计：根据应用型管理人才培养目标的要求，在宏观经济学的教学中，通过课堂讲授、案例分析和讨论，使学生掌握宏观经济学的基本理论、基本知识和基本分析工具，能初步运用宏观经济学的相关知识和分析工具对有关经济现象进行分析和评价，并对其主要流派及其观点有一定了解。在教学过程中，注意培养学生的经济学逻辑思维能力和独立学习、独立分析能力，注重培育创新精神。本课程教学一方面要向学生传授系统的宏观经济运行和经济政策原理，帮助学生们了解政府进行经济决策的机制与过程，客观地认识经济现象，并为学生们学习其他专业课提供了坚实的理论基础；另一方面，结合中国经济体制改革和市场经济发展实践，帮助学生们正确地运用宏观经济学中的有关理论来分析我国的宏观经济运行中的问题和对策。此外，鉴于宏观经济学是以西方发达市场经济国家的经济运行作为研究对象，所以宏观经济学教学过程中，还需要正确地运用马克思主义政治经济学观点与方法、结合中国市场经济体制改革的实践以及中国的具体国情对其进行分析乃至批判。

在宏观经济学课程中，将诚信和道德、国际化思维、团队合作、长远规划、创新等德育元素融入其中，使学生在在学习专业知识的同时，进一步感受祖国的繁荣、富强、昌盛，以及中国人民通过不懈努力实现中国梦的情怀。宏观经济学课程一个重要的特点是实践性，通过实践可以增强德育潜移默化影响的效果。将德育元素在《宏观经济学》课程中进行融入，可以通过课堂上的案例教学、模拟情景以及深入企业的实践活动，让学生对所学的宏观经济学知识加以综合运用并达到融会贯通，同时在这个过程中，也可以深刻体会到企业诚信经营、勇于承担社会责任的重要性和崇高性，以及这些与企业成功的内在必要联系。这些实践环节为学生的道德培养提供了很强的示范和启发作用。

四、教学内容及要求

第二十三章 Measuring a Nation's Income

（一）目的与要求

Chapter 23 is the first chapter in the macroeconomic section of the text. It is the first of a two-chapter sequence that introduces you to two vital statistics that economists use to monitor the macroeconomy— Gross Domestic Product (GDP) and the consumer price index. Chapter 23 develops how economists measure production and income in the macroeconomy. Chapter 24 develops how economists measure the level of prices in the macroeconomy. Taken together, Chapter 23 concentrates on the quantity of output in the macroeconomy while Chapter 24 concentrates on the price of output in the macroeconomy.

The purpose of this chapter is to provide students with an understanding of the measurement and the use of gross domestic product (GDP). GDP is the single most important measure of the health of the macro-economy. Indeed, it is the most widely reported statistic in every developed economy. In this chapter, students should understand:

1. why an economy's total income equals its total expenditure.
2. how gross domestic product (GDP) is defined and calculated.
3. the breakdown of GDP into its four major components.
4. the distinction between real GDP and nominal GDP.
5. whether GDP is a good measure of economic well-being.

(二) 教学内容

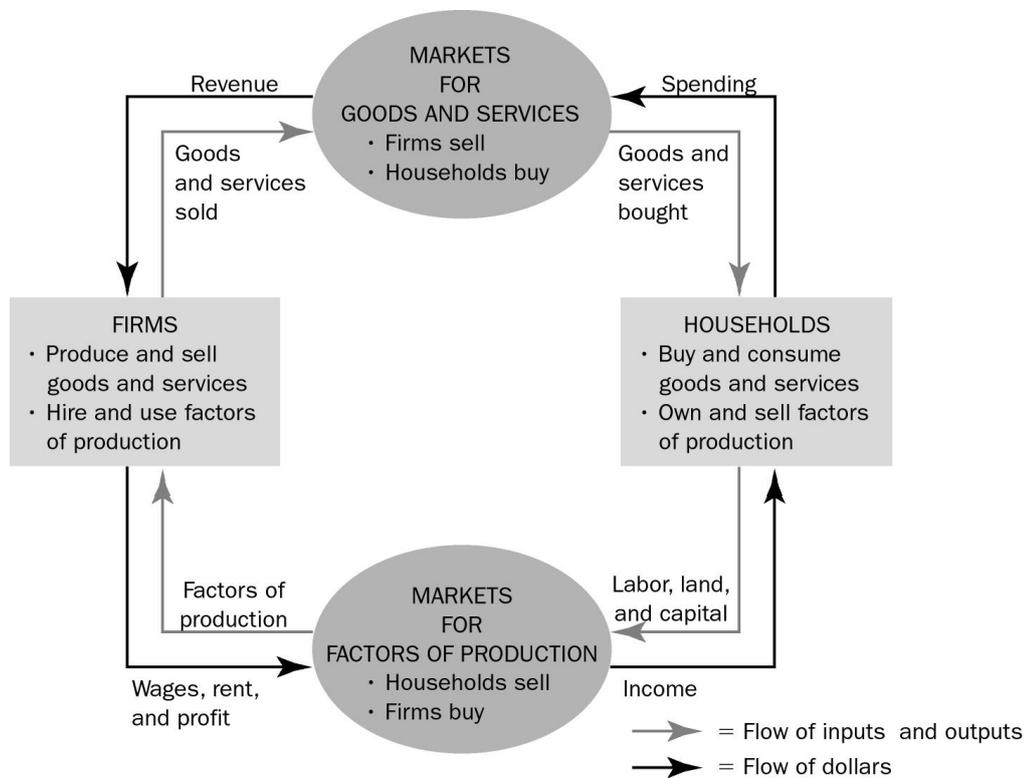
I. Review of the Definitions of Microeconomics and Macroeconomics

- A. Definition of microeconomics: the study of how households and firms make decisions and how they interact in markets.
- B. Definition of macroeconomics: the study of economy-wide phenomena including inflation, unemployment, and economic growth.

II. The Economy's Income and Expenditure

- A. To judge whether or not an economy is doing well, it is useful to look at Gross Domestic Product (GDP).
 1. GDP measures the total income of everyone in the economy.
 2. GDP measures total expenditure on an economy's output of goods and services.
- B. For an economy as a whole, total income must equal total expenditure.

1. If someone pays someone else \$100 to mow a lawn, the expenditure on the lawn service (\$100) is exactly equal to the income earned from the production of the lawn service (\$100).
2. We can also use the circular-flow diagram from Chapter 2 to show why total income and total expenditure must be equal.
 - a. Households buy goods and services from firms; firms use this money to pay for resources purchased from households.
 - b. In the simple economy described by this circular-flow diagram, calculating GDP could be done by adding up the total purchases of households or summing total income earned by households.
 - c. Note that this simple diagram is somewhat unrealistic as it omits saving, taxes, government purchases, and investment purchases by firms. However, because a transaction always has a buyer and a seller, total expenditure in the economy must be equal to total income.



III. The Measurement of Gross Domestic Product

- A. Definition of gross domestic product (GDP): the market value of all final goods and services produced within a country in a given period of time.
- B. “GDP Is the Market Value”
 - 1. To add together different items, market values are used.
 - 2. Market values are calculated by using market prices.
- C. “. . . Of All”
 - 1. GDP includes all items produced and sold legally in the economy.
 - 2. The value of housing services is somewhat difficult to measure.
 - a. If housing is rented, the value of the rent is used to measure the value of the housing services.
 - b. For housing that is owned (or mortgaged), the government estimates the rental value and uses this figure to value the housing services.
 - 3. GDP does not include illegal goods or services or items that are not sold in markets.
 - a. When you hire someone to mow your lawn, that production is included in GDP.
 - b. If you mow your own lawn, that production is not included in GDP.
- D. “. . . Final”
 - 1. Intermediate goods are not included in GDP.
 - 2. The value of intermediate goods is already included as part of the value of the final good.
 - 3. Goods that are placed into inventory are considered to be “final” and included in GDP as a firm’s inventory investment.

- a. Goods that are sold out of inventory are counted as a decrease in inventory investment.
 - b. The goal is to count the production when the good is finished, which is not necessarily the same time that the product is sold.
- E. "... Goods and Services ..."
1. GDP includes both tangible goods and intangible services.
- F. "... Produced ..."
1. Only current production is counted.
 2. Used goods that are sold do not count as part of GDP.
- G. "... Within a Country ..."
1. GDP measures the production that takes place within the geographical boundaries of a particular country.
 2. If a Canadian citizen works temporarily in the United States, the value of his output is included in GDP for the United States. If an American owns a factory in Haiti, the value of the production of that factory is not included in U.S. GDP.
- H. "... in a Given Period of Time."
1. The usual interval of time used to measure GDP is a quarter (three months).
 2. When the government reports GDP, the data are generally reported on an annual basis.
 3. In addition, data are generally adjusted for regular seasonal changes (such as Christmas).
- I. In addition to summing expenditure, the government also calculates GDP by adding up total income in the economy.
1. The two ways of calculating GDP almost exactly give the same answer.

2. The difference between the two calculations of GDP is called the statistical discrepancy.

J. FYI: Other Measures of Income

1. Gross National Product (GNP) is the total income earned by a nation's permanent residents.
 - a. GNP includes income that American citizens earn abroad.
 - b. GNP excludes income that foreigners earn in the United States.
2. Net National Product (NNP) is the total income of a nation's residents (GNP) minus losses from depreciation (wear and tear on an economy's stock of equipment and structures).
3. National income is the total income earned by a nation's residents in the production of goods and services.
 - a. National income differs from NNP by excluding indirect business taxes and including business subsidies.
 - b. NNP and national income also differ due to "statistical discrepancy."
4. Personal income is the income that households and noncorporate businesses receive.
5. Disposable personal income is the income that households and noncorporate businesses have left after taxes and other obligations to the government.

IV. The Components of GDP

- A. GDP (Y) can be divided into four components: consumption (C), investment (I), government purchases (G), and net exports (NX).

$$Y = C + I + G + NX$$

- B. Definition of **consumption**: **spending by households on goods and services, with the exception of purchases of new housing.**

C. Definition of **investment**: **spending on capital equipment, inventories, and structures, including household purchases of new housing.**

1. GDP accounting uses the word “investment” differently from how we use the term in everyday conversation.
2. When a student hears the word “investment,” he or she thinks of financial instruments such as stocks and bonds.
3. In GDP accounting, investment means purchases of investment goods such as capital equipment, inventories, or structures.

D. Definition of **government purchases**: **spending on goods and services by local, state, and federal governments.**

1. Salaries of government workers are counted as part of the government purchases component of GDP.
2. Transfer payments are not included as part of the government purchases component of GDP.

E. Definition of **net exports**: **spending on domestically produced goods by foreigners (exports) minus spending on foreign goods by domestic residents (imports).**

F. *Case Study: The Components of U.S. GDP*

1. Table 1 shows these four components of GDP for 2009.
2. The data for GDP come from the Bureau of Economic Analysis, which is part of the Department of Commerce.

V. Real Versus Nominal GDP

A. There are two possible reasons for total spending to rise from one year to the next.

1. The economy may be producing a larger output of goods and services.
2. Goods and services could be selling at higher prices.

B. When studying GDP over time, economists would like to know if output has changed (not prices).

C. Thus, economists measure real GDP by valuing output using a fixed set of prices.

D. A Numerical Example

1. Two goods are being produced: hot dogs and hamburgers.

Year	Price of Hot Dogs	Quantity of Hot Dogs	Price of Hamburgers	Quantity of Hamburgers
2010	\$1	100	\$2	50
2011	\$2	150	\$3	100
2012	\$3	200	\$4	150

2. Definition of **nominal GDP**: the production of goods and services valued at current prices.

$$\text{Nominal GDP for 2010} = (\$1 \times 100) + (\$2 \times 50) = \$200.$$

$$\text{Nominal GDP for 2011} = (\$2 \times 150) + (\$3 \times 100) = \$600.$$

$$\text{Nominal GDP for 2012} = (\$3 \times 200) + (\$4 \times 150) = \$1,200.$$

3. Definition of **real GDP**: the production of goods and services valued at constant prices.

Let's assume that the base year is 2008.

$$\text{Real GDP for 2010} = (\$1 \times 100) + (\$2 \times 50) = \$200.$$

$$\text{Real GDP for 2011} = (\$1 \times 150) + (\$2 \times 100) = \$350.$$

$$\text{Real GDP for 2012} = (\$1 \times 200) + (\$2 \times 150) = \$500.$$

E. Because real GDP is unaffected by changes in prices over time, changes in real GDP reflect changes in the amount of goods and services produced.

F. The GDP Deflator

1. Definition of **GDP deflator**: a measure of the price level calculated as the ratio of nominal GDP to real GDP times 100.

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

2. Example Calculations

GDP Deflator for 2010 = $(\$200 / \$200) \times 100 = 100$.

GDP Deflator for 2011 = $(\$600 / \$350) \times 100 = 171$.

GDP Deflator for 2012 = $(\$1200 / \$500) \times 100 = 240$.

G. *Case Study: Real GDP over Recent History*

1. Figure 2 shows quarterly data on real GDP for the United States since 1965.
2. We can see that real GDP has increased over time.
3. We can also see that there are times when real GDP declines. These periods are called recessions.

VI. Is GDP a Good Measure of Economic Well-Being?

- A. GDP measures both an economy's total income and its total expenditure on goods and services.
- B. GDP per person tells us the income and expenditure level of the average person in the economy.
- C. GDP, however, may not be a very good measure of the economic well-being of an individual.
1. GDP omits important factors in the quality of life including leisure, the quality of the environment, and the value of goods produced but not sold in formal markets.
 2. GDP also says nothing about the distribution of income.
 3. However, a higher GDP does help us achieve a good life. Nations with larger GDP generally have better education and better health care.

D. *In the News: The Underground Economy*

1. The measurement of GDP misses many transactions that take place in the underground economy.

2. This article compares the underground economies of the United States and several other countries.

E. *Case Study: International Differences in GDP and the Quality of Life*

1. Table 3 shows real GDP per person, life expectancy, adult literacy rates, and Internet usage for 12 countries.
2. In rich countries, life expectancy is higher and adult literacy and Internet usage rates are also high.
3. In poor countries, people typically live only into their 50s, only about half of the adult population is literate, and Internet usage is very rare.

(三) 思政设计

从国家统计局公报、国际 IMF 组织等网站报告链接、权威 GDP 等数据导入开始，了解中国与国际经济形势，中国 GDP 的变化。复习提问 GDP 概念、核算方法。使得学生不仅意识到中国改革开放后巨大成就，增强“道路自信”，而且了解和重视高质量发展。通过理论实践比对，加深对知识的了解，夯实基础知识。

(四) 课后练习

1. Explain why an economy's income must equal its expenditure.
2. Which contributes more to GDP—the production of an economy car or the production of a luxury car? Why?
3. A farmer sells wheat to a baker for \$2. The baker uses the wheat to make bread, which is sold for \$3. What is the total contribution of these transactions to GDP?
4. Many years ago, Peggy paid \$500 to put together a record collection. Today, she sold her albums at a garage sale for \$100. How does this sale affect current GDP?
5. List the four components of GDP. Give an example of each.

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第二十四章 Measuring the Cost of Living

(一) 目的与要求

Chapter 24 is the second chapter of a two-chapter sequence that deals with how economists measure output and prices in the macroeconomy. Chapter 23 addressed how economists measure output. Chapter 24 develops how economists measure the overall price level in the macroeconomy.

The purpose of Chapter 24 is twofold: first, to show you how to generate a price index and, second, to teach you how to employ a price index to compare dollar figures from different points in time and to adjust interest rates for inflation. In addition, you will learn some of the shortcomings of using the consumer price index as a measure of the cost of living. In this chapter, students should understand:

1. how the consumer price index (CPI) is constructed.
2. why the CPI is an imperfect measure of the cost of living.
3. how to compare the CPI and the GDP deflator as measures of the overall price level.
4. how to use a price index to compare dollar figures from different times.
5. the distinction between real and nominal interest rates.

(二) 教学内容

I. The Consumer Price Index

A. Definition of **consumer price index (CPI): a measure of the overall cost of the goods and services bought by a typical consumer.**

B. How the Consumer Price Index Is Calculated

Table 1

1. Fix the basket.
 - a. The Bureau of Labor Statistics uses surveys to determine a representative bundle of goods and services purchased by a typical consumer.
 - b. Example: 4 hot dogs and 2 hamburgers.
2. Find the prices.

- a. Prices for each of the goods and services in the basket must be determined for each time period.
- b. Example:

Year	Price of Hot Dogs	Price of Hamburgers
2010	\$1	\$2
2011	\$2	\$3
2012	\$3	\$4

3. Compute the basket's cost.

- a. By keeping the basket the same, only prices are being allowed to change. This allows us to isolate the effects of price changes over time.
- b. Example:

$$\begin{aligned} \text{Cost in 2010} &= (\$1 \times 4) + (\$2 \times 2) = \$8. \\ \text{Cost in 2011} &= (\$2 \times 4) + (\$3 \times 2) = \$14. \\ \text{Cost in 2012} &= (\$3 \times 4) + (\$4 \times 2) = \$20. \end{aligned}$$

4. Choose a base year and compute the index.

- a. The base year is the benchmark against which other years are compared.
- b. The formula for calculating the price index is:

$$\text{CPI} = \left(\frac{\text{cost of basket in current year}}{\text{cost of basket in base year}} \right) \times 100$$

- c. Example (using 2010 as the base year):

$$\begin{aligned} \text{CPI for 2010} &= (\$8)/(\$8) \times 100 = 100. \\ \text{CPI for 2011} &= (\$14)/(\$8) \times 100 = 175. \\ \text{CPI for 2012} &= (\$20)/(\$8) \times 100 = 250. \end{aligned}$$

5. Compute the inflation rate.

- a. Definition of **inflation rate**: the percentage change in the price index from the preceding period.
- b. The formula used to calculate the inflation rate is:

$$\text{inflation rate} = \left(\frac{\text{CPI}_{\text{Year 2}} - \text{CPI}_{\text{Year 1}}}{\text{CPI}_{\text{Year 1}}} \right) \times 100\%$$

- c. Example:

Inflation Rate for 2011 = $(175 - 100)/100 \times 100\% = 75\%$.

Inflation Rate for 2012 = $(250 - 175)/175 \times 100\% = 43\%$.

C. The Producer Price Index

1. Definition of **producer price index (PPI)**: a measure of the cost of a basket of goods and services bought by firms.
2. Because firms eventually pass on higher costs to consumers in the form of higher prices on products, the producer price index is believed to be useful in predicting changes in the CPI.

D. FYI: What Is in the CPI's Basket?

Figure 1

1. Figure 1 shows the makeup of the market basket used to compute the CPI.
2. The largest category is housing, which makes up 43% of a typical consumer's budget.

E. Problems in Measuring the Cost of Living

1. Substitution Bias

- a. When the price of one good changes, consumers often respond by substituting another good in its place.
- b. The CPI does not allow for this substitution; it is calculated using a fixed basket of goods and services.
- c. This implies that the CPI overstates the increase in the cost of living over time.

2. Introduction of New Goods

- a. When a new good is introduced, consumers have a wider variety of goods and services to choose from.
- b. This makes every dollar more valuable, which lowers the cost of maintaining the same level of economic well-being.
- c. Because the market basket is not revised often enough, these new goods are left out of the bundle of goods and services included in the basket.

3. Unmeasured Quality Change

- a. If the quality of a good falls from one year to the next, the value of a dollar falls; if quality rises, the value of the dollar rises.
- b. Attempts are made to correct prices for changes in quality, but it is often difficult to do so because quality is hard to measure.

4. The size of these problems is also difficult to measure.

5. Most studies indicate that the CPI overstates the rate of inflation by approximately one percentage point per year.

6. The issue is important because many government transfer programs (such as Social Security) are tied to increases in the CPI.

F. *In the News: Shopping for the CPI*

1. To collect the data for the CPI, thousands of individuals must check prices in stores.

2. This is an article that chronicles a day in the life of one of these shoppers.

G. The GDP Deflator versus the Consumer Price Index

1. The GDP deflator reflects the prices of all goods produced domestically, while the CPI reflects the prices of all goods bought by consumers.

Figure 2

2. The CPI compares the prices of a *fixed* basket of goods over time, while the GDP deflator compares the prices of the goods *currently produced* to the prices of the goods produced in the base year. This means that the group of goods and services used to compute the GDP deflator changes automatically over time as output changes.
3. Figure 2 shows the inflation rate as measured by both the CPI and the GDP deflator.

II. Correcting Economic Variables for the Effects of Inflation

A. Dollar Figures from Different Times

1. To change dollar values from one year to the next, we can use this formula:

$$\text{Value in Year 2 dollars} = \text{Value in Year 1 dollars} \times \left(\frac{\text{Price level in Year 2}}{\text{Price level in Year 1}} \right)$$

2. Example: Babe Ruth's 1931 salary in 2009 dollars:

$$\text{Salary in 2009 dollars} = \text{Salary in 1931 dollars} \times \frac{\text{Price level in 2009}}{\text{Price level in 1931}}$$

$$\text{Salary in 2009 dollars} = \$80,000 \times (214.5/15.2).$$

$$\text{Salary in 2009 dollars} = \$1,128,947.$$

3. *FYI: Mr. Index Goes to Hollywood*

- a. Reports of box office success are often made in terms of the dollar values of ticket sales.

- b. These ticket sales are then compared with ticket sales of movies in the past.
- c. However, no correction for changes in the value of a dollar are made.

B. Indexation

1. Definition of **indexation**: the automatic correction of a dollar amount for the effects of inflation by law or contract.
2. As mentioned above, many government transfer programs use indexation for the benefits. The government also indexes the tax brackets used for federal income tax.
3. There are uses of indexation in the private sector as well. Many labor contracts include cost-of-living allowances (COLAs).

C. Real and Nominal Interest Rates

1. Example: Sally Saver deposits \$1,000 into a bank account that pays an annual interest rate of 10%. A year later, she withdraws \$1,100.
2. What matters to Sally is the *purchasing power* of her money.
 - a. If there is zero inflation, her purchasing power has risen by 10%.
 - b. If there is 6% inflation, her purchasing power has risen by about 4%.
 - c. If there is 10% inflation, her purchasing power has remained the same.
 - d. If there is 12% inflation, her purchasing power has declined by about 2%.
 - e. If there is 2% deflation, her purchasing power has risen by about 12%.
3. Definition of **nominal interest rate**: the interest rate as usually reported without a correction for the effects of inflation.
4. Definition of **real interest rate**: the interest rate corrected for the effects of inflation.

$$\text{real interest rate} = \text{nominal interest rate} - \text{inflation rate}$$

5. Case Study: Interest Rates in the U.S. Economy

Figure 3

- a. Figure 3 shows real and nominal interest rates from 1965 to the present.
- b. The nominal interest rate is always greater than the real interest rate in this diagram because there was always inflation during this period.
- c. Note that in the late 1970s the real interest rate was negative because the inflation rate exceeded the nominal interest rate.

(三) 思政设计

引入 CPI 核算的案例研究一，分析中国的物价消费指数 CPI 的项目分类与权重。比较中美 CPI 核算的篮子构成有何差异？进一步用 CPI 指数的构成解释中国的消费升级。

引入中国通货膨胀历史状况的案例研究二，分析中国通货膨胀的整体状况。并进一步解释不同时期通货膨胀的成因，以及在开放条件下通货膨胀形成的机理。

(四) 课后练习

1. Which do you think has a greater effect on the consumer price index: a 10 percent increase in the price of caviar? Why?
2. Describe the three problems that make the consumer price index an imperfect measure of the cost of living.
3. If the price of a Navy submarine rises, is the consumer price index or the GDP deflator affected more? Why?
4. Over a long period of time, the price of a candy bar rose from \$0.10 to \$0.60. Over the same period, the consumer price index rose from 150 to 300. Adjusted for overall inflation, how much did the price of the candy bar change?
5. Explain the meaning of nominal interest rate and real interest rate. How are they related?

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第二十五章 Production and Growth

(一) 目的与要求

Chapter 25 is the first chapter in a four-chapter sequence on the production of output in the long run. Chapter 25 addresses the determinants of the level and growth rate of output. We find that capital and labor are among the primary determinants of output. In Chapter 26, we address how saving and investment in capital goods affect the production of output, and in Chapter 27, we learn about some of the tools people and firms use when choosing capital projects in which to invest. In Chapter 28, we address the market for labor.

The purpose of Chapter 25 is to examine the long-run determinants of both the level and the growth rate of real GDP per person. Along the way, we will discover the factors that determine the productivity of workers and address what governments might do to improve the productivity of their citizens.

In this chapter, students should:

1. see how much economic growth differs around the world
2. consider why productivity is the key determinant of a country's standard of living
3. analyze the factors that determine a country's productivity
4. examine how a country's policies influence its productivity growth

(二) 教学内容

I. Economic Growth Around the World

A. Table 1 shows data on real GDP per person for 13 countries during different periods of time.

1. The data reveal the fact that living standards vary a great deal between these countries.
2. Growth rates are also reported in the table. Japan has had the largest growth rate over time, 2.76% per year (on average).
3. Because of different growth rates, the ranking of countries by income per person changes over time.
 - a. In the late 19th century, the United Kingdom was the richest country in the world.

- b. Today, income per person is lower in the United Kingdom than in the United States (a former colony of the United Kingdom).

B. *FYI: Are You Richer Than the Richest American?*

1. According to the magazine *American Heritage*, the richest American of all time is John B. Rockefeller, whose wealth today would be the equivalent of approximately \$200 billion.
2. Yet, because Rockefeller lived from 1839 to 1937, he did not get the chance to enjoy many of the conveniences we take for granted today such as television, air conditioning, and modern medicine.
3. Thus, because of technological advances, the average American today may enjoy a “richer” life than the richest American who lived a century ago.

C. *FYI: A Picture Is Worth a Thousand Statistics*

1. This box presents three photos showing a typical family in three countries – the United Kingdom, Mexico, and Mali. Each family was photographed outside their home, together with all of their material possessions.
2. These photos demonstrate the vast difference in the standards of living in these countries.

II. Productivity: Its Role and Determinants

A. Why Productivity Is So Important

1. Example: Robinson Crusoe
 - a. Because he is stranded alone, he must catch his own fish, grow his own vegetables, and make his own clothes.
 - b. His standard of living depends on his ability to produce goods and services.
2. Definition of **productivity: the amount of goods and services a worker produces in each hour of work.**
3. Review of Principle #8: A Country’s Standard of Living Depends on Its Ability to Produce Goods and Services.

B. How Productivity Is Determined

1. Physical Capital per Worker
 - a. Definition of **physical capital: the stock of equipment and structures that are used to produce goods and services.**
 - b. Example: Crusoe will catch more fish if he has more fishing poles.
2. Human Capital per Worker
 - a. Definition of **human capital: the knowledge and skills that workers acquire through education, training, and experience.**
 - b. Example: Crusoe will catch more fish if he has been trained in the best fishing techniques or as he gains experience fishing.

3. Natural Resources per Worker

- a. Definition of **natural resources**: the inputs into the production of goods and services that are provided by nature, such as land, rivers, and mineral deposits.
- b. Example: Crusoe will have better luck catching fish if there is a plentiful supply around his island.

4. Technological Knowledge

- a. Definition of **technological knowledge**: society's understanding of the best ways to produce goods and services.
- b. Example: Crusoe will catch more fish if he has invented a better fishing lure.
- c. *Case Study: Are Natural Resources a Limit to Growth?* This section points out that as the population has grown over time, we have discovered ways to lower our use of natural resources. Thus, most economists are not worried about shortages of natural resources.

C. FYI: The Production Function

1. A production function describes the relationship between the quantity of inputs used in production and the quantity of output from production.
2. The production function generally is written like this:

$$Y = A F(L, K, H, N)$$

where Y = output, L = quantity of labor, K = quantity of physical capital, H = quantity of human capital, N = quantity of natural resources, A reflects the available production technology, and $F()$ is a function that shows how inputs are combined to produce output.

3. Many production functions have a property called constant returns to scale.
 - a. This property implies that as all inputs are doubled, output will exactly double.
 - b. This implies that the following must be true:

$$xY = A F(xL, xK, xH, xN)$$

where $x = 2$ if inputs are doubled.

- c. This also means that if we want to examine output per worker we could set $x = 1/L$ and we would get the following: This shows that output per worker depends on the amount of physical capital per worker (K/L), the amount of human capital per worker (H/L), and the amount of natural resources per worker (N/L).

III. Economic Growth and Public Policy

A. Saving and Investment

1. Because capital is a produced factor of production, a society can change the amount of capital that it has.
2. However, there is an opportunity cost of doing so; if resources are used to produce capital goods, fewer goods and services are produced for current consumption.

B. Diminishing Returns and the Catch-Up Effect

1. Definition of **diminishing returns**: the property whereby the benefit from an extra unit of an input declines as the quantity of the input increases.
 - a. As the capital stock rises, the extra output produced from an additional unit of capital will fall.
 - b. This can be seen in Figure 1, which shows how the amount of capital per worker determines the amount of output per worker, holding constant all other determinants of output.
 - c. Thus, if workers already have a large amount of capital to work with, giving them an additional unit of capital will not increase their productivity by much.
 - d. In the long run, a higher saving rate leads to a higher level of productivity and income, but not to higher growth rates in these variables.

2. An important implication of diminishing returns is the catch-up effect.
 - a. Definition of **catch-up effect: the property whereby countries that start off poor tend to grow more rapidly than countries that start off rich.**
 - b. When workers have very little capital to begin with, an additional unit of capital will increase their productivity by a great deal.

C. Investment from Abroad

1. Saving by domestic residents is not the only way for a country to invest in new capital.
2. Investment in the country by foreigners can also occur.
 - a. Foreign direct investment occurs when a capital investment is owned and operated by a foreign entity.
 - b. Foreign portfolio investment occurs when a capital investment is financed with foreign money but operated by domestic residents.
3. Some of the benefits of foreign investment flow back to foreign owners. But the economy still experiences an increase in the capital stock, which leads to higher productivity and higher wages.
4. The World Bank is an organization that tries to encourage the flow of investment to poor countries.
 - a. The World Bank obtains funds from developed countries such as the United States and makes loans to less-developed countries so that they can invest in roads, sewer systems, schools, and other types of capital.
 - b. The World Bank also offers these countries advice on how best to use these funds.

D. Education

1. Investment in human capital also has an opportunity cost.

- a. When students are in class, they cannot be producing goods and services for consumption.
 - b. In less-developed countries, this opportunity cost is considered to be high; as a result, children often drop out of school at a young age.
2. Because there are positive externalities in education, the effect of lower education on the economic growth rate of a country can be large.
 3. Many poor countries also face a “brain drain”—the best educated often leave to go to other countries where they can enjoy a higher standard of living.
 4. *In the News: Promoting Human Capital*
 - a. Human capital is a key to economic growth.
 - b. This is an article that describes how some developing countries now give parents an immediate financial incentive to keep their children in school.

E. Health and Nutrition

1. Human capital can also be used to describe another type of investment in people: expenditures that lead to a healthier population.
2. Other things being equal, healthier workers are more productive.
3. Making the right investments in the health of the population is one way for a nation to increase productivity.

F. Property Rights and Political Stability

1. Protection of property rights and promotion of political stability are two other important ways that policymakers can improve economic growth.
2. There is little incentive to produce products if there is no guarantee that they cannot be taken. Contracts must also be enforced.
3. Countries with questionable enforcement of property rights or an unstable political climate will also have difficulty in attracting foreign (or even domestic) investment.

G. Free Trade

1. Some countries have tried to achieve faster economic growth by avoiding transacting with the rest of the world.
2. However, trade allows a country to specialize in what it does best and thus consume beyond its production possibilities.
3. When a country trades wheat for steel, it is as well off as it would be if it had developed a new technology for turning wheat into steel.
4. The amount a nation trades is determined not only by government policy but also by geography.
 - a. Countries with good, natural seaports find trade easier than countries without this resource.
 - b. Countries with more than 80 percent of their population living within 100 kilometers of a coast have an average GDP per person that is four times as large as countries with 20 percent of their population living near a coast.

H. Research and Development

1. The primary reason why living standards have improved over time has been due to large increases in technological knowledge.
2. Knowledge can be considered a public good.
3. The U.S. government promotes the creation of new technological information by providing research grants and providing tax incentives for firms engaged in research.
4. The patent system also encourages research by granting an inventor the exclusive right to produce the product for a specified number of years.

I. Population Growth

1. Stretching Natural Resources

- a. Thomas Malthus (an English minister and early economic thinker) argued that an ever-increasing population meant that the world was doomed to live in poverty forever.
 - b. However, he failed to understand that new ideas would be developed to increase the production of food and other goods, including pesticides, fertilizers, mechanized equipment, and new crop varieties.
2. Diluting the Capital Stock
- a. High population growth reduces GDP per worker because rapid growth in the number of workers forces the capital stock to be spread more thinly.
 - b. Countries with a high population growth have large numbers of school-age children, placing a burden on the education system.
3. Some countries have already instituted measures to reduce population growth rates.
4. Policies that foster equal treatment for women should raise economic opportunities for women leading to lower rates of population.
5. Promoting Technological Progress
- a. Some economists have suggested that population growth has driven technological progress and economic prosperity.
 - b. In a 1993 journal article, economist Michael Kremer provided evidence that increases in population lead to technological progress.

J. *In the News: One Economist's Answer*

- 1. Why do some nations thrive while others do not?
- 2. This is an article by economist Daron Acemoglu providing his ideas on the answers to this question.

(三) 思政设计

从国家统计局、国际 IMF 组织等网站报告链接、权威金融数据库中了解：世界各国、各地区人均 GDP 的变化和排行。使得学生不仅意识到中国改革开放后中国宏观经济保持了近四十年的高速增长，而且使得同学们进一步意识到，中国经济发展在人均 GDP 指标上仍面临着进一步提高人民生活水平的艰巨任务。中国宏观经济在不同发展阶段下面临不同的发展目标。中国共产党第十九届中央委员会第五次全体会议，于 2020 年 10 月 26 日至 29 日在北京举行。根据《公报》，会议提出到二〇三五年基本实现社会主义现代化的远景目标，其中包括人均国内生产总值（人均 GDP）达到中等发达国家水平。

(四) 课后练习

1. What does the level of a nation's GDP measure?
2. What does the growth rate of GDP measure?
3. Would you rather live in a nation with a high level of GDP and a low growth rate or in a nation with a low level of GDP and a high growth rate?
4. List and describe four determinants of productivity.
5. In what way is a college degree a form of capital?
6. Explain how higher saving leads to a higher standard of living. What might deter a policymaker from trying to raise the rate of saving?
7. Does a higher rate of saving lead to higher growth temporarily or indefinitely?
8. Why would removing a trade restriction, such as a tariff, lead to more rapid economic growth?
9. How does the rate of population growth influence the level of GDP per person?
10. Describe two ways the U.S. government tries to encourage advances in technological knowledge.

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第二十六章 Saving, Investment, and the Financial System

(一) 目的与要求

Chapter 26 is the second chapter in a four-chapter sequence on the production of output in the long run. In Chapter 25, we found that capital and labor are among the primary determinants of output. For this reason, Chapter 26 addresses the market for saving and investment in capital, and Chapter 27 addresses the tools people and firms use when choosing capital projects in which to invest. Chapter 28 will address the market for labor.

The purpose of Chapter 26 is to show how saving and investment are coordinated by the loanable-funds market. Within the framework of the loanable-funds market, we are able to see the effects of taxes and government deficits on saving, investment, the accumulation of capital, and ultimately, the growth rate of output.

By the end of this chapter, students should understand:

1. some of the important financial institutions in the U.S. economy.
2. how the financial system is related to key macroeconomic variables.
3. the model of the supply and demand for loanable funds in financial markets.
4. how to use the loanable-funds model to analyze various government policies.
5. how government budget deficits affect the U.S. economy.

(二) 教学内容

I. Definition of **financial system**: the group of institutions in the economy that help to match one person's saving with another person's investment.

II. Financial Institutions in the U.S. Economy

A. Financial Markets

1. Definition of **financial markets**: financial institutions through which savers can directly provide funds to borrowers.
2. The Bond Market
 - a. Definition of **bond**: a certificate of indebtedness.

- b. A bond identifies the date of maturity and the rate of interest that will be paid periodically until the loan matures.
- c. One important characteristic that determines a bond's value is its term. The term is the length of time until the bond matures. All else being equal, long-term bonds pay higher rates of interest than short-term bonds.
- d. Another important characteristic of a bond is its credit risk, which is the probability that the borrower will fail to pay some of the interest or principal. All else being equal, the more risky a bond is, the higher its interest rate.
- e. A third important characteristic of a bond is its tax treatment. For example, when state and local governments issue bonds (called municipal bonds), the interest income earned by the holders of these bonds is not taxed by the federal government. This makes the bonds more attractive, lowering the interest rate needed to entice people to buy them.

3. The Stock Market

- a. Definition of **stock**: **a claim to partial ownership in a firm.**
- b. The sale of stock to raise money is called *equity finance*; the sale of bonds to raise money is called *debt finance*.
- c. Stocks are sold on organized stock exchanges (such as the New York Stock Exchange or NASDAQ) and the prices of stocks are determined by supply and demand.
- d. The price of a stock generally reflects the perception of a company's future profitability.
- e. A *stock index* is computed as an average of a group of stock prices.
- f. *FYI: Key Numbers for Stock Watchers* describes three key numbers that are reported on the financial pages.

B. Financial Intermediaries

- 1. Definition of **financial intermediaries**: **financial institutions through which savers can indirectly provide funds to borrowers.**

2. Banks

- a. The primary role of banks is to take in deposits from people who want to save and then lend them out to others who want to borrow.
- b. Banks pay depositors interest on their deposits and charge borrowers a slightly higher rate of interest to cover the costs of running the bank and provide the bank owners with some amount of profit.
- c. Banks also play another important role in the economy by allowing individuals to use checking deposits as a medium of exchange.

3. Mutual Funds

- a. Definition of **mutual fund**: **an institution that sells shares to the public and uses the proceeds to buy a portfolio of stocks and bonds.**
- b. The primary advantage of a mutual fund is that it allows individuals with small amounts of money to diversify.
- c. Mutual funds called “index funds” buy all of the stocks of a given stock index. These funds have generally performed better than funds with active fund managers. This may be true because they trade stocks less frequently and they do not have to pay the salaries of fund managers.

C. Summing Up

1. There are many financial institutions in the U.S. economy.
2. These institutions all serve the same goal—moving funds from savers to borrowers.

D. FYI: Financial Crises

1. What are the key elements of a financial crisis?
 - a. A large decline in asset prices.
 - b. Insolvencies at some financial institutions.

- c. A decline in confidence in financial institutions.
 - d. A credit crunch.
 - e. An economic downturn.
 - f. A vicious circle.
2. Financial crises do have serious consequences but eventually end.

III. Saving and Investment in the National Income Accounts

A. Some Important Identities

1. Remember that GDP can be divided up into four components: consumption, investment, government purchases, and net exports.

$$Y = C + I + G + NX$$

2. We will assume that we are dealing with a closed economy (an economy that does not engage in international trade or international borrowing and lending). This implies that GDP can now be divided into only three components:

$$Y = C + I + G$$

3. To isolate investment, we can subtract C and G from both sides:

$$Y - C - G = I$$

4. The left-hand side of this equation ($Y - C - G$) is the total income in the economy after paying for consumption and government purchases. This amount is called national saving.

5. Definition of **national saving (saving): the total income in the economy that remains after paying for consumption and government purchases.**

6. Substituting saving (S) into our identity gives us:

$$S = I$$

7. This equation tells us that saving equals investment.
8. Let's go back to our definition of national saving once again:

$$S = Y - C - G$$

9. We can add taxes (T) and subtract taxes (T):

$$S = (Y - C - T) + (T - G)$$

10. The first part of this equation ($Y - T - C$) is called private saving; the second part ($T - G$) is called public saving.
- Definition of **private saving**: the income that households have left after paying for taxes and consumption.
 - Definition of **public saving**: the tax revenue that the government has left after paying for its spending.
 - Definition of **budget surplus**: an excess of tax revenue over government spending.
 - Definition of **budget deficit**: a shortfall of tax revenue from government spending.
11. The fact that $S = I$ means that (for the economy as a whole) saving must be equal to investment.
- The bond market, the stock market, banks, mutual funds, and other financial markets and institutions stand between the two sides of the $S = I$ equation.
 - These markets and institutions take in the nation's saving and direct it to the nation's investment.

B. The Meaning of Saving and Investment

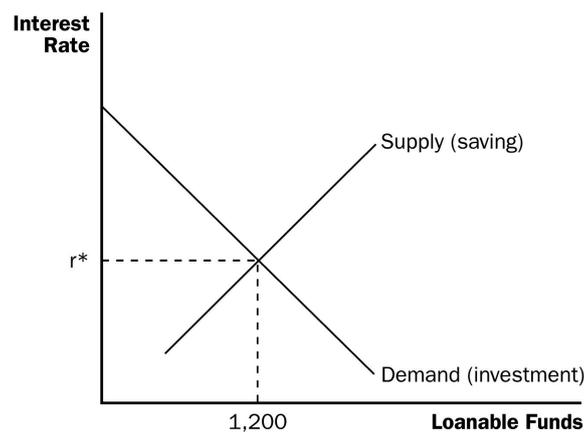
- In macroeconomics, investment refers to the purchase of new capital, such as equipment or buildings.
- If an individual spends less than he earns and uses the rest to buy stocks or mutual funds, economists call this saving.

IV. The Market for Loanable Funds

A. Definition of **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.

B. Supply and Demand for Loanable Funds

1. The supply of loanable funds comes from those who spend less than they earn. The supply can occur directly through the purchase of some stock or bonds or indirectly through a financial intermediary.
2. The demand for loanable funds comes from households and firms who wish to borrow funds to make investments. Families generally invest in new homes while firms may borrow to purchase new equipment or to build factories.
3. The price of a loan is the interest rate.



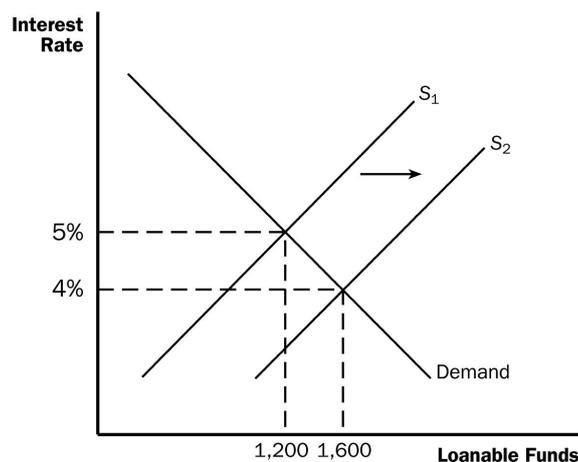
- a. All else equal, as the interest rate rises, the quantity of loanable funds supplied will increase.
 - b. All else equal, as the interest rate rises, the quantity of loanable funds demanded will fall.
4. At equilibrium, the quantity of funds demanded is equal to the quantity of funds supplied.
 - a. If the interest rate in the market is greater than the equilibrium rate, the quantity of funds demanded would be smaller than the quantity of funds

supplied. Lenders would compete for borrowers, driving the interest rate down.

- b. If the interest rate in the market is less than the equilibrium rate, the quantity of funds demanded would be greater than the quantity of funds supplied. The shortage of loanable funds would encourage lenders to raise the interest rate they charge.
5. The supply and demand for loanable funds depends on the real (rather than nominal) interest rate because the real rate reflects the true return to saving and the true cost of borrowing.

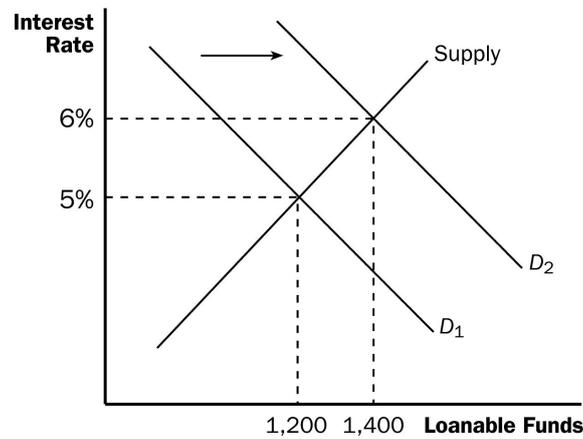
C. Policy 1: Saving Incentives

1. Savings rates in the United States are relatively low when compared with other countries such as Japan and Germany.



2. Suppose that the government changes the tax code to encourage greater saving.
 - a. This will cause an increase in saving, shifting the supply of loanable funds to the right.
 - b. The equilibrium interest rate will fall and the equilibrium quantity of funds will rise.
3. Thus, the result of the new tax laws would be a decrease in the equilibrium interest rate and greater saving and investment.

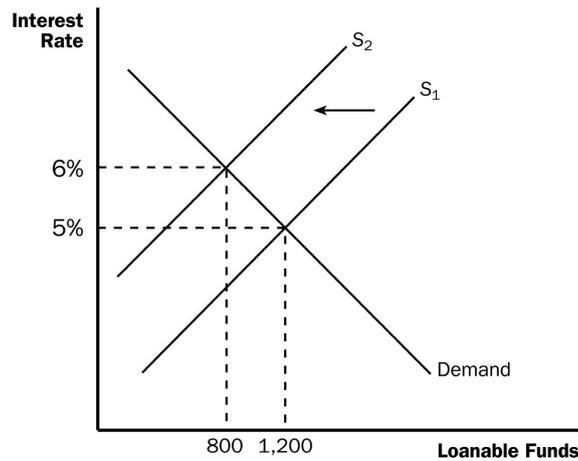
D. Policy 2: Investment Incentives



1. Suppose instead that the government passed a new law lowering taxes for any firm building a new factory or buying a new piece of equipment (through the use of an investment tax credit).
 - a. This will cause an increase in investment, causing the demand for loanable funds to shift to the right.
 - b. The equilibrium interest rate will rise, and the equilibrium quantity of funds will increase as well.
2. Thus, the result of the new tax laws would be an increase in the equilibrium interest rate and greater saving and investment.

E. Policy 3: Government Budget Deficits and Surpluses

1. A budget deficit occurs if the government spends more than it receives in tax revenue.
2. This implies that public saving ($T - G$) falls, which will lower national saving.



- a. The supply of loanable funds will shift to the left.
 - b. The equilibrium interest rate will rise, and the equilibrium quantity of funds will decrease.
3. When the interest rate rises, the quantity of funds demanded for investment purposes falls.
 4. Definition of **crowding out**: a decrease in investment that results from government borrowing.
 5. When the government reduces national saving by running a budget deficit, the interest rate rises and investment falls.
 6. Government budget surpluses work in the opposite way. The supply of loanable funds increases, the equilibrium interest rate falls, and investment rises.
 7. *Case Study: The History of U.S. Government Debt*
 - a. Figure 5 shows the debt of the U.S. government expressed as a percentage of GDP.
 - b. Throughout history, the primary cause of fluctuations in government debt has been wars. However, the U.S. debt also increased substantially during the 1980s when taxes were cut but government spending was not.

- c. By the late 1990s, the debt-to-GDP ratio began declining due to budget surpluses.
- d. The debt-to-GDP ratio began rising again during the first few years of the George W. Bush presidency. The causes have been threefold: tax cuts, a recession, and an increase in government spending for the war on terrorism.
- e. A very large increase in the debt-to-GDP ratio started occurring in 2008 because of the financial crisis and the deep economic contraction.

(三) 思政设计

案例分析：我国经济高速以及中速发展的综合要素来源。结合经济增长理论与中国经济的增长状况，分析阐述中国经济高速以及中速发展的综合要素来源。从增长来源来看，由于我国是世界储蓄率最高的国家之一，又是投资率最高的国家之一，资本的形成总额相当于美国的 1.4 倍，实物资本的增长率仍然保持在 7%左右。从劳动力要素看，我国劳动力数量有所下降，但是总人口就业率仍然保持在 55%以上，其中妇女就业参与率仍然保持较高水平，并居世界前列，非农就业人数持续增长，农业就业人数持续下降。从人力资本要素来看，我国已经成为世界最大的知识型、技能型、创业型、创新型劳动者大军。同时，我国已经进入创新驱动发展的重要阶段，全要素生产率 TFP 的增长率保持在 1%以上。

(四) 课后练习

1. What is the role of the financial system? Name and describe two markets that are part of the financial system in the U.S. economy. Name and describe two financial intermediaries.
2. Why is it important for people who own stocks and bonds to diversify their holdings? What type of financial institution makes diversification easier?
3. What is national saving? What is private saving? What is public saving?

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第二十九章 The Monetary System

(一) 目的与要求

Chapter 29 is the first chapter in a two-chapter sequence dealing with money and prices in the long run. Chapter 29 describes what money is and develops how the Federal Reserve controls the quantity of money. Since the quantity of money influences the rate of inflation in the long run, the following chapter concentrates on the causes and costs of inflation.

The purpose of Chapter 29 is to help you develop an understanding of what money is, what forms money takes, how the banking system helps create money, and how the Federal Reserve controls the quantity of money. An understanding of money is important because the quantity of money affects inflation and interest rates in the long run and production and employment in the short run.

In this chapter, students should understand:

1. what money is and what functions money has in the economy.
2. what the Federal Reserve System is.
3. how the banking system helps determine the supply of money.
4. what tools the Federal Reserve uses to alter the supply of money.

(二) 教学内容

I. The Meaning of Money

A. Definition of **money**: the set of assets in an economy that people regularly use to buy goods and services from other people.

B. The Functions of Money

1. Money serves three functions in our economy.
 - a. Definition of **medium of exchange**: an item that buyers give to sellers when they want to purchase goods and services.
 - b. Definition of **unit of account**: the yardstick people use to post prices and record debts.
 - c. Definition of **store of value**: an item that people can use to transfer purchasing power from the present to the future.

2. Definition of **liquidity**: the ease with which an asset can be converted into the economy's medium of exchange.
 - a. Money is the most liquid asset available.
 - b. Other assets (such as stocks, bonds, and real estate) vary in their liquidity.
 - c. When people decide in what forms to hold their wealth, they must balance the liquidity of each possible asset against the asset's usefulness as a store of value.

C. The Kinds of Money

1. Definition of **commodity money**: money that takes the form of a commodity with intrinsic value.
2. Definition of **fiat money**: money without intrinsic value that is used as money because of government decree.
3. *In the News: Mackerel Economics*
 - a. Even prisoners need a form of money.
 - b. This is an article from *The Wall Street Journal* describing how containers of mackerel are now a common currency in U.S. prisons.

D. Money in the U.S. Economy

1. The quantity of money circulating in the United States is sometimes called the *money stock*.
2. Included in the measure of the money supply are currency, demand deposits, and other monetary assets.
 - a. Definition of **currency**: the paper bills and coins in the hands of the public.
 - b. Definition of **demand deposits**: balances in bank accounts that depositors can access on demand by writing a check.

3. Figure 1 shows the monetary assets included in two important measures of the money supply, M1 and M2.
4. *FYI: Why Credit Cards Aren't Money*
 - a. Credit cards are not a form of money; when a person uses a credit card, he or she is simply deferring payment for the item.
 - b. Because using a debit card is like writing a check, the account balances that lie behind debit cards are included in the measures of money.
5. *Case Study: Where Is All the Currency?*
 - a. If we divide the amount of outstanding currency in the United States by the adult population, we find that the average adult should have approximately \$3,653 in currency.
 - b. Of course, most adults carry a much smaller amount.
 - c. One explanation is that a great deal of U.S. currency may be held in other countries.
 - d. Another explanation is that large amounts of currency may be held by criminals because transactions that use currency leave no paper trail.

II. The Federal Reserve System

A. Definition of **Federal Reserve (Fed)**: the central bank of the United States.

B. Definition of **central bank**: An institution designed to oversee the banking system and regulate the quantity of money in the economy.

C. The Fed's Organization

1. The Fed was created in 1913 after a series of bank failures.
2. The Fed is run by a Board of Governors with 7 members who serve 14-year terms.

- a. The Board of Governors has a chairman who is appointed for a four-year term.
- b. The current chairman is Ben Bernanke.
3. The Federal Reserve System is made up of 12 regional Federal Reserve Banks located in major cities around the country.
4. One job performed by the Fed is the regulation of banks to ensure the health of the nation's banking system.
 - a. The Fed monitors each bank's financial condition and facilitates bank transactions by clearing checks.
 - b. The Fed also makes loans to banks when they want (or need) to borrow.
5. The second job of the Fed is to control the quantity of money available in the economy.
 - a. Definition of **money supply: the quantity of money available in the economy**.
 - b. Definition of **monetary policy: the setting of the money supply by policymakers in the central bank**.

D. The Federal Open Market Committee

1. The Federal Open Market Committee (FOMC) consists of the 7 members of the Board of Governors and 5 of the 12 regional Federal Reserve District Bank presidents.
2. The primary way in which the Fed increases or decreases the supply of money is through open market operations (which involve the purchase or sale of U.S. government bonds).
 - a. If the Fed wants to increase the supply of money, it creates dollars and uses them to purchase government bonds from the public through the nation's bond markets.

- b. If the Fed wants to lower the supply of money, it sells government bonds from its portfolio to the public. Money is then taken out of the hands of the public and the supply of money falls.

III. Banks and the Money Supply

A. The Simple Case of 100-Percent-Reserve Banking

1. Example: Suppose that currency is the only form of money and the total amount of currency is \$100.
2. A bank is created as a safe place to store currency; all deposits are kept in the vault until the depositor withdraws them.
 - a. Definition of **reserves: deposits that banks have received but have not loaned out.**
 - b. Under the example described above, we have 100-percent-reserve banking.
3. The financial position of the bank can be described with a T-account:

FIRST NATIONAL BANK			
Assets		Liabilities	
Reserves	\$100.00	Deposits	\$100.00

4. The money supply in this economy is unchanged by the creation of a bank.
 - a. Before the bank was created, the money supply consisted of \$100 worth of currency.
 - b. Now, with the bank, the money supply consists of \$100 worth of deposits.
5. This means that, if banks hold all deposits in reserve, banks do not influence the supply of money.

B. Money Creation with Fractional-Reserve Banking

1. Definition of **fractional-reserve banking: a banking system in which banks hold only a fraction of deposits as reserves.**
2. Definition of **reserve ratio: the fraction of deposits that banks hold as reserves.**

3. Example: Same as before, but First National decides to set its reserve ratio equal to 10% and lend the remainder of the deposits.
4. The bank's T-account would look like this:

FIRST NATIONAL BANK			
Assets		Liabilities	
Reserves	\$10.00	Deposits	\$100.00
Loans	\$90.00		

5. When the bank makes these loans, the money supply changes.
 - a. Before the bank made any loans, the money supply was equal to the \$100 worth of deposits.
 - b. Now, after the loans, deposits are still equal to \$100, but borrowers now also hold \$90 worth of currency from the loans.
 - c. Therefore, when banks hold only a fraction of deposits in reserve, banks create money.
6. Note that, while new money has been created, so has debt. There is no new wealth created by this process.

C. The Money Multiplier

1. The creation of money does not stop at this point.
2. Borrowers usually borrow money to purchase something and then the money likely becomes redeposited at a bank.
3. Suppose a person borrowed the \$90 to purchase something and the funds then get redeposited in Second National Bank. Here is this bank's T-account (assuming that it also sets its reserve ratio to 10%):

SECOND NATIONAL BANK			
Assets		Liabilities	
Reserves	\$9.00	Deposits	\$90.00
Loans	\$81.00		

4. If the \$81 in loans becomes redeposited in another bank, this process will go on and on.
5. Each time the money is deposited and a bank loan is created, more money is created.
6. Definition of **money multiplier: the amount of money the banking system generates with each dollar of reserves.**

$\text{money multiplier} = 1/\text{reserve ratio}$
--

7. In our example, the money supply increased from \$100 to \$1,000 after the establishment of fractional-reserve banking.

D. Bank Capital, Leverage, and the Financial Crisis of 2008–2009

1. In reality, banks also get funds from issuing debt and equity.
2. Definition of **bank capital: the resources a bank’s owners have put into the institution.**
3. A more realistic balance sheet for a bank:

MORE REALISTIC NATIONAL BANK			
Assets		Liabilities	
Reserves	\$200.00	Deposits	\$800.00
Loans	\$700.00	Debt	\$150.00
Securities	\$100.00	Capital (owner’s equity)	\$50.00

4. Definition of **leverage: the use of borrowed money to supplement existing funds for purposes of investment.**
5. Definition of **leverage ratio: the ratio of assets to bank capital.**
 - a. The leverage ratio is $\$1,000/\$50 = 20$.
 - b. A leverage ratio of 20 means that, for every dollar of capital that has been contributed by the owners, the bank has \$20 of assets.
 - c. Because of leverage, a small change in assets can lead to a large change in owner’s equity.

6. Definition of **capital requirement: a government regulation specifying a minimum amount of bank capital.**
7. In 2008 and 2009, many banks found themselves with too little capital because the value of their assets had fallen dramatically.

IV. The Fed's Tools of Monetary Control

A. How the Fed Influences the Quantity of Reserves

1. Open Market Operations

- a. Definition of **open market operations: the purchase and sale of U.S. government bonds by the Fed.**
- b. If the Fed wants to increase the supply of money, it creates dollars and uses them to purchase government bonds from the public in the nation's bond markets.
- c. If the Fed wants to lower the supply of money, it sells government bonds from its portfolio to the public in the nation's bond markets. Money is then taken out of the hands of the public and the supply of money falls.
- d. If the sale or purchase of government bonds affects the amount of deposits in the banking system, the effect will be made larger by the money multiplier.
- d. Open market operations are easy for the Fed to conduct and are therefore the tool of monetary policy that the Fed uses most often.

2. Fed Lending to Banks

- a. The Fed can also lend reserves to banks.
- b. Definition of **discount rate: the interest rate on the loans that the Fed makes to banks.**
- c. A higher discount rate discourages banks from borrowing from the Fed and likely encourages banks to hold onto larger amounts of reserves. This in turn lowers the money supply.
- d. A lower discount rate encourages banks to lend their reserves (and borrow from the Fed). This will increase the money supply.

e. In recent years, the Fed has set up new mechanisms for banks to borrow from the Fed.

B. How the Fed Influences the Reserve Ratio

1. Reserve Requirements

a. Definition of **reserve requirements: regulations on the minimum amount of reserves that banks must hold against deposits.**

b. This can affect the size of the money supply through changes in the money multiplier.

c. The Fed rarely uses this tool because of the disruptions in the banking industry that would be caused by frequent alterations of reserve requirements. (It is also not effective when banks hold a lot of excess reserves.)

2. Paying Interest on Reserves

a. In October of 2008, the Fed began paying banks interest on reserves.

b. The higher the interest rate, the more reserves a bank will want to hold. This will reduce the money multiplier.

C. Problems in Controlling the Money Supply

1. The Fed does not control the amount of money that consumers choose to deposit in banks.

a. The more money that households deposit, the more reserves the banks have, and the more money the banking system can create.

b. The less money that households deposit, the smaller the amount of reserves banks have, and the less money the banking system can create.

2. The Fed does not control the amount that bankers choose to lend.

a. The amount of money created by the banking system depends on loans being made.

b. If banks choose to hold onto a greater level of reserves than required by the Fed (called excess reserves), the money supply will fall.

3. Therefore, in a system of fractional-reserve banking, the amount of money in the economy depends in part on the behavior of depositors and bankers.
4. Because the Fed cannot control or perfectly predict this behavior, it cannot perfectly control the money supply.

D. *Case Study: Bank Runs and the Money Supply*

1. Bank runs create a large problem under fractional-reserve banking.
2. Because the bank only holds a fraction of its deposits in reserve, it will not have the funds to satisfy all of the withdrawal requests from its depositors.
3. Today, deposits are guaranteed through the Federal Depository Insurance Corporation (FDIC).

F. The Federal Funds Rate

1. Definition of **federal funds rate: the short-term interest rate that banks charge one another for loans.**
2. When the federal funds rate rises or falls, other interest rates often move in the same direction.
3. In recent years, the Fed has set a target for the federal funds rate.

G. *In the News: Bernanke on the Fed's Toolbox*

1. During the financial crisis of 2008 and 2009, the Fed expanded reserves to help struggling banks.
2. This is an article written by Fed chairman Ben Bernanke discussing the Fed's options for reversing this policy once the economy recovers from this deep recession.

(三) 思政设计

通过案例分析,使得同学们了解中国的货币历史,了解银行的分类及其职能;银行的业务;中国人民银行的性质,对象,职能,地位。并在对我国宏观经济金融环境和银行体系进行深入剖析的基础上,理解我国货币政策银行体系传导机制。

(四) 课后练习

1. What distinguishes money from other assets in the economy?
2. What is commodity money? What is fiat money? Which kind do we use?
3. What are demand deposits and why should they be included in the stock of money?
4. Who is responsible for setting monetary policy in the United States? How is this group chosen?
5. If the Fed wants to increase the money supply with open-market operations, what does it do?
6. Why don't banks hold 100 percent reserves? How is the amount of reserves banks hold related to the amount of money the banking system creates?

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第三十章 Money Growth and Inflation

(一) 目的与要求

Chapter 30 is the second chapter in a two-chapter sequence dealing with money and prices in the long run. Chapter 29 explained what money is and how the Federal Reserve controls the quantity of money. Chapter 30 establishes the relationship between the rate of growth of money and the inflation rate.

The purpose of this chapter is to acquaint you with the causes and costs of inflation. You will find that, in the long run, there is a strong relationship between the growth rate of money and inflation. You will also find that there are numerous costs to the economy from high inflation but that there is not a consensus on the importance of these costs when inflation is moderate.

By the end of this chapter, students should understand:

1. why inflation results from rapid growth in the money supply.
2. the meaning of the classical dichotomy and monetary neutrality.
3. why some countries print so much money that they experience hyperinflation.
4. how the nominal interest rate responds to the inflation rate.
5. the various costs that inflation imposes on society.

(二) 教学内容

- I. The inflation rate is measured as the percentage change in the Consumer Price Index, the GDP deflator, or some other index of the overall price level.
 - A. Over the past 70 years, prices have risen an average of about 4% per year in the United States.
 1. There has been substantial variation in the rate of price changes over time.
 2. During the 1990s, prices rose at an average rate of 2% per year, while prices rose by 7% per year during the 1970s.
 - B. International data shows an even broader range of inflation experiences. In 2009, inflation was 9% in Russia and 25% in Venezuela.
- II. The Classical Theory of Inflation

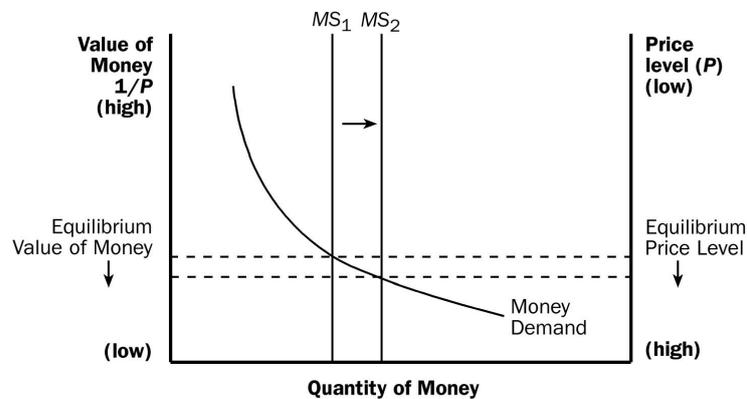
A. The Level of Prices and the Value of Money

1. When the price level rises, people have to pay more for the goods and services that they purchase.
2. A rise in the price level also means that the value of money is now lower because each dollar now buys a smaller quantity of goods and services.
3. If P is the price level, then the quantity of goods and services that can be purchased with \$1 is equal to $1/P$.
4. Suppose you live in a country with one good (ice cream cones).
 - a. When the price of an ice cream cone is \$2, the value of a dollar is $1/2$ cone.
 - b. When the price of an ice cream cone rises to \$3, the value of a dollar is $1/3$ cone.

B. Money Supply, Money Demand, and Monetary Equilibrium

1. The value of money is determined by the supply and demand for money.
2. For the most part, the supply of money is determined by the Fed.
 - a. This implies that the quantity of money supplied is fixed (until the Fed decides to change it).
 - b. Thus, the supply of money will be vertical (perfectly inelastic).
3. The demand for money reflects how much wealth people want to hold in liquid form.
 - a. One variable that is very important in determining the demand for money is the price level.
 - b. The higher prices are, the more money that is needed to perform transactions.
 - c. Thus, a higher price level (and a lower value of money) leads to a higher quantity of money demanded.

4. In the long run, the overall price level adjusts to the level at which the demand for money equals the supply of money.
 - a. If the price level is above the equilibrium level, people will want to hold more money than is available and prices will have to decline.
 - b. If the price level is below equilibrium, people will want to hold less money than that available and the price level will rise.



5. We can show the supply and demand for money using a graph.
 - a. The left-hand vertical axis is the value of money, measured by $1/P$.
 - b. The right-hand vertical axis is the price level (P). Note that it is inverted—a high value of money means a low price level and vice versa.
 - c. At the equilibrium, the quantity of money demanded is equal to the quantity of money supplied.

C. The Effects of a Monetary Injection

1. Assume that the economy is currently in equilibrium and the Fed suddenly increases the supply of money.
2. The supply of money shifts to the right.

3. The equilibrium value of money falls and the price level rises.
4. When an increase in the money supply makes dollars more plentiful, the result is an increase in the price level that makes each dollar less valuable.
5. Definition of **quantity theory of money**: a theory asserting that the quantity of money available determines the price level and that the growth rate in the quantity of money available determines the inflation rate.

D. A Brief Look at the Adjustment Process

1. The immediate effect of an increase in the money supply is to create an excess supply of money.
2. People try to get rid of this excess supply in a variety of ways.
 - a. They may buy goods and services with the excess funds.
 - b. They may use these excess funds to make loans to others by buying bonds or depositing the money in a bank account. These loans will then be used to buy goods and services.
 - c. In either case, the increase in the money supply leads to an increase in the demand for goods and services.
 - d. Because the supply of goods and services has not changed, the result of an increase in the demand for goods and services will be higher prices.

E. The Classical Dichotomy and Monetary Neutrality

1. In the 18th century, David Hume and other economists wrote about the relationship between monetary changes and important macroeconomic variables such as production, employment, real wages, and real interest rates.
2. They suggested that economic variables should be divided into two groups: nominal variables and real variables.
 - a. Definition of **nominal variables**: variables measured in monetary units.

- b. Definition of **real variables**: variables measured in physical units.
3. Definition of **classical dichotomy**: the theoretical separation of nominal and real variables.
4. Prices in the economy are nominal (because they are quoted in units of money), but relative prices are real (because they are not measured in money terms).
5. Classical analysis suggested that different forces influence real and nominal variables.
 - a. Changes in the money supply affect nominal variables but not real variables.
 - b. Definition of **monetary neutrality**: the proposition that changes in the money supply do not affect real variables.

F. Velocity and the Quantity Equation

1. Definition of **velocity of money**: the rate at which money changes hands.
2. To calculate velocity, we divide nominal GDP by the quantity of money.
3. If P is the price level (the GDP deflator), Y is real GDP, and M is the quantity of money:
4. Rearranging, we get the quantity equation:
5. Definition of **quantity equation**: the equation $M \times V = P \times Y$, which relates the quantity of money, the velocity of money, and the dollar value of the economy's output of goods and services.
 - a. The quantity equation shows that an increase in the quantity of money must be reflected in one of the other three variables.
 - b. Specifically, the price level must rise, output must rise, or velocity must fall.

- c. Figure 3 shows nominal GDP, the quantity of money (as measured by M2) and the velocity of money for the United States since 1960. It appears that velocity is fairly stable, while GDP and the money supply have grown dramatically.
6. We can now explain how an increase in the quantity of money affects the price level using the quantity equation.
 - a. The velocity of money is relatively stable over time.
 - b. When the central bank changes the quantity of money (M), it will proportionately change the nominal value of output ($P \times Y$).
 - c. The economy's output of goods and services (Y) is determined primarily by available resources and technology. Because money is neutral, changes in the money supply do not affect output.
 - d. This must mean that P increases proportionately with the change in M .
 - e. Thus, when the central bank increases the money supply rapidly, the result is a high level of inflation.

G. Case Study: Money and Prices during Four Hyperinflations

1. Hyperinflation is generally defined as inflation that exceeds 50% per month.
2. Figure 4 shows data from four classic periods of hyperinflation during the 1920s in Austria, Hungary, Germany, and Poland.
3. We can see that, in each graph, the quantity of money and the price level are almost parallel.
4. These episodes illustrate Principle #9: Prices rise when the government prints too much money.

H. The Inflation Tax

1. Some countries use money creation to pay for spending instead of using tax revenue.
2. Definition of **inflation tax**: **the revenue the government raises by creating money**.
3. The inflation tax is like a tax on everyone who holds money.
4. Almost all hyperinflations follow the same pattern.
 - a. The government has a high level of spending and inadequate tax revenue to pay for its spending.
 - b. The government's ability to borrow funds is limited.
 - c. As a result, it turns to printing money to pay for its spending.
 - d. The large increases in the money supply lead to large amounts of inflation.
 - e. The hyperinflation ends when the government cuts its spending and eliminates the need to create new money.
5. *FYI: Hyperinflation in Zimbabwe*
 - a. In the 2000s, Zimbabwe faced one of history's most extreme examples of hyperinflation.
 - b. Before the period of hyperinflation, one Zimbabwe dollar was worth a bit more than one U.S. dollar.
 - c. By 2009, the Zimbabwe government was issuing notes with denominations as large as 10 trillion Zimbabwe dollars (which was worth less than three U.S. dollars).

I. The Fisher Effect

1. Recall that the real interest rate is equal to the nominal interest rate minus the inflation rate.
2. This, of course, means that:

- a. The supply and demand for loanable funds determines the real interest rate.
 - b. Growth in the money supply determines the inflation rate.
3. When the Fed increases the rate of growth of the money supply, the inflation rate increases. This in turn will lead to an increase in the nominal interest rate.
 4. Definition of **Fisher effect: the one-for-one adjustment of the nominal interest rate to the inflation rate.**
 - a. The Fisher effect does not hold in the short run to the extent that inflation is unanticipated.
 - b. If inflation catches borrowers and lenders by surprise, the nominal interest rate will fail to reflect the rise in prices.

Figure 5

5. Figure 5 shows the nominal interest rate and the inflation rate in the U.S. economy since 1960.

III. The Costs of Inflation

A. A Fall in Purchasing Power? The Inflation Fallacy

1. Most individuals believe that the major problem caused by inflation is that inflation lowers the purchasing power of a person's income.
2. However, as prices rise, so do incomes. Thus, inflation does not in itself reduce the purchasing power of incomes.

B. Shoeleather Costs

1. Because inflation erodes the value of money that you carry in your pocket, you can avoid this drop in value by holding less money.
2. However, holding less money generally means more trips to the bank.
3. Definition of **shoeleather costs: the resources wasted when inflation encourages people to reduce their money holdings.**

4. This cost can be considerable in countries experiencing hyperinflation.

C. Menu Costs

1. Definition of **menu costs: the costs of changing prices.**

2. During periods of inflation, firms must change their prices more often.

D. Relative-Price Variability and the Misallocation of Resources

1. Because prices of most goods change only once in a while (instead of constantly), inflation causes relative prices to vary more than they would otherwise.

2. When inflation distorts relative prices, consumer decisions are distorted and markets are less able to allocate resources to their best use.

E. Inflation-Induced Tax Distortions

1. Lawmakers fail to take inflation into account when they write tax laws.

2. The nominal values of interest income and capital gains are taxed (not the real values).

a. Table 1 shows a hypothetical example of two individuals, living in two countries earning the same real interest rate, and paying the same tax rate, but one individual lives in a country without inflation and the other lives in a country with 8% inflation.

b. The person living in the country with inflation ends up with a smaller after-tax real interest rate.

3. This implies that higher inflation will tend to discourage saving.

4. A possible solution to this problem would be to index the tax system.

F. Confusion and Inconvenience

1. Money is the yardstick that we use to measure economic transactions.

2. When inflation occurs, the value of money falls. This alters the yardstick that we use to measure important variables like incomes and profit.

G. A Special Cost of Unexpected Inflation: Arbitrary Redistributions of Wealth

1. Example: Sam Student takes out a \$20,000 loan at 7% interest (nominal). In 10 years, the loan will come due. After his debt has compounded for 10 years at 7%, Sam will owe the bank \$40,000.

2. The real value of this debt will depend on inflation.

a. If the economy has a hyperinflation, wages and prices will rise so much that Sam may be able to pay the \$40,000 out of pocket change.

b. If the economy has deflation, Sam will find the \$40,000 a greater burden than he imagined.

3. Because inflation is often hard to predict, it imposes risk on both Sam and the bank that the real value of the debt will differ from that expected when the loan is made.

4. Inflation is especially volatile and uncertain when the average rate of inflation is high.

H. Inflation Is Bad, but Deflation May Be Worse

1. Although inflation has been the norm in recent U.S. history, Japan has been experiencing deflation in recent years.

2. Deflation leads to lower shoeleather costs, but still creates menu costs and relative-price variability.

3. Deflation also results in the redistribution of wealth toward creditors and away from debtors.

I. Case Study: The Wizard of Oz and the Free Silver Debate

1. Most people do not know that the book *The Wizard of Oz* was written about U.S. monetary policy in the late 19th century.

2. From 1880 to 1896, the United States experienced deflation, redistributing wealth

from farmers (with outstanding loans) to banks.

3. Because the United States followed the gold standard at this time, one possible solution to the problem was to start to use silver as well. This would increase the supply of money, raising the price level, and reduce the real value of the farmers' debts.

4. There has been some debate over the interpretation assigned to each character, but it is clear that the story revolves around the monetary policy debate at that time in history.

5. Even though those who wanted to use silver were defeated, the money supply in the United States increased in 1898 when gold was discovered in Alaska and supplies of gold were shipped in from Canada and South Africa.

6. Within 15 years, prices were back up and the farmers were better able to handle their debts.

J. *In the News: Inflationary Threats*

1. During the recession of 2008 and 2009, some individuals began worrying about the possibility of inflation in the U.S.

2. This is an article written by Professor Mankiw in The New York Times detailing these concerns.

(三) 思政设计

借助国家统计局的官网数据，分析我国 CPI 数据的发展趋势和特征，分析我国通货膨胀的历史状况。在综合分析通货膨胀的成因上，重点分析我国的货币政策对物价水平的影响，从而使得学生进一步了解在长期经济发展中，货币供给增长率与通货膨胀率之间的关联性。

(四) 课后练习

1. Explain how an increase in the price level affects the real value of money.
2. According to the quantity theory of money, what is the effect of an increase in the quantity of money?

3. Explain the difference between nominal and real variables and give two examples of each. According to the principle of monetary neutrality, which variables are affected by changes in the quantity of money?

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第三十三章 Aggregate Demand and Aggregate

(一) 目的与要求

The purpose of Chapter 33 is to develop the model economists use to analyze the economy's short-run fluctuations—the model of aggregate demand and aggregate supply. We will learn about some of the sources for shifts in the aggregate-demand curve and the aggregate-supply curve and how these shifts can cause recessions. We will also introduce actions policymakers might undertake to offset recessions. In this chapter, students should understand:

1. three key facts about short-run economic fluctuations.
2. how the economy in the short run differs from the economy in the long run.
3. how to use the model of aggregate demand and aggregate supply to explain economic fluctuations.
4. how shifts in either aggregate demand or aggregate supply can cause booms and recessions.

(二) 教学内容

I. Economic activity fluctuates from year to year.

A. Definition of **recession**: a period of declining real incomes and rising unemployment.

B. Definition of **depression**: a severe recession.

II. Three Key Facts about Economic Fluctuations

A. Fact 1: Economic Fluctuations Are Irregular and Unpredictable

1. Fluctuations in the economy are often called the business cycle.
2. Economic fluctuations correspond to changes in business conditions.
3. These fluctuations are not at all regular and are almost impossible to predict.

4. Panel (a) of Figure 1 shows real GDP since 1965. The shaded areas represent recessions.

B. Fact 2: Most Macroeconomic Quantities Fluctuate Together

1. Real GDP is the variable that is most often used to examine short-run changes in the economy.
2. However, most macroeconomic variables that measure some type of income, spending, or production fluctuate closely together.
3. Panel (b) of Figure 1 shows how investment spending changes over the business cycle. Note that investment spending falls during recessions just as real GDP does.

C. Fact 3: As Output Falls, Unemployment Rises

1. Changes in the economy's output level will have an effect on the economy's utilization of its labor force.
2. When firms choose to produce a smaller amount of goods and services, they lay off workers, which increases the unemployment rate.
3. Panel (c) of Figure 1 shows how the unemployment rate changes over the business cycle. Note that during recessions, unemployment generally rises. Note also that the unemployment rate never approaches zero but instead fluctuates around its natural rate of about 5% or 6%.

D. *In The News: The Social Influences of Economic Downturns*

1. The U.S. economy suffered a severe economic downturn in 2008 and 2009.
2. This is an article from *The New York Times* examining how an event like this affects society as a whole.

III. Explaining Short-Run Economic Fluctuations

A. The Assumptions of Classical Economics

1. The classical dichotomy is the separation of variables into real variables and nominal variables.
2. According to classical theory, changes in the money supply only affect nominal variables.

B. The Reality of Short-Run Fluctuations

1. Most economists believe that the classical theory describes the world in the long run but not in the short run.
2. Beyond a period of several years, changes in the money supply affect prices and other nominal variables, but do not affect real GDP, unemployment, or other real variables.
3. However, when studying year-to-year fluctuations in the economy, the assumption of monetary neutrality is not appropriate. In the short run, most real and nominal variables are intertwined.

C. The Model of Aggregate Demand and Aggregate Supply

1. Definition of **model of aggregate demand and aggregate supply**: the model that most economists use to explain short-run fluctuations in economic activity around its long-run trend.
2. We can show this model using a graph.
 - a. The variable on the vertical axis is the average level of prices in the economy, as measured by the CPI or the GDP deflator.
 - b. The variable on the horizontal axis is the economy's output of goods and services, as measured by real GDP.
 - c. Definition of **aggregate-demand curve**: a curve that shows the quantity of goods and services that households, firms, and the government want to buy at each price level.

- d. Definition of **aggregate-supply curve**: a curve that shows the quantity of goods and services that firms choose to produce and sell at each price level.
3. In this model, the price level and the quantity of output adjust to bring aggregate demand and aggregate supply into balance.

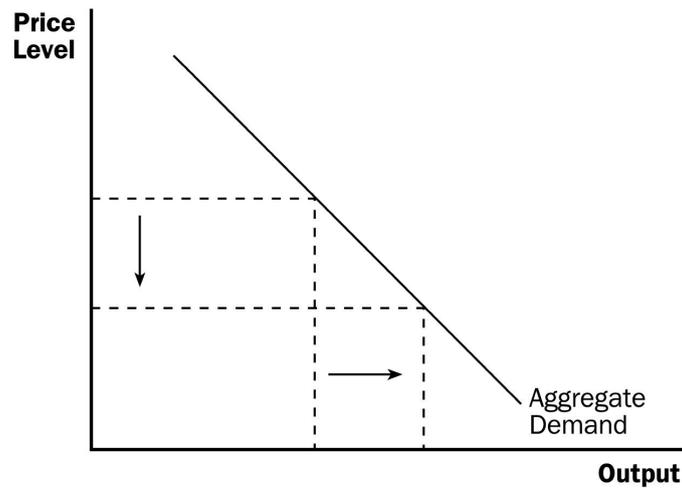
IV. The Aggregate-Demand Curve

A. Why the Aggregate-Demand Curve Slopes Downward

1. Recall that GDP (Y) is made up of four components: consumption (C), investment (I), government purchases (G), and net exports (NX).

$$Y = C + I + G + NX$$

2. Each of the four components is a part of aggregate demand.
 - a. Government purchases are assumed to be fixed by policy.
 - b. This means that to understand why the aggregate-demand curve slopes downward, we must understand how changes in the price level affect consumption, investment, and net exports.
3. The Price Level and Consumption: The Wealth Effect
 - a. A decrease in the price level raises the real value of money and makes consumers feel wealthier, which in turn encourages them to spend more.
 - b. The increase in consumer spending means a larger quantity of goods and services demanded.



4. The Price Level and Investment: The Interest-Rate Effect
 - a. The lower the price level, the less money households need to buy goods and services.
 - b. When the price level falls, households try to reduce their holdings of money by lending some out (either in financial markets or through financial intermediaries).
 - c. As households try to convert some of their money into interest-bearing assets, the interest rate will drop.
 - d. Lower interest rates encourage borrowing firms to borrow more to invest in new plants and equipment and it encourages households to borrow more to invest in new housing.
 - e. Thus, a lower price level reduces the interest rate, encourages greater spending on investment goods, and therefore increases the quantity of goods and services demanded.

5. The Price Level and Net Exports: The Exchange-Rate Effect
 - a. A lower price level in the United States lowers the U.S. interest rate.
 - b. American investors will seek higher returns by investing abroad, increasing U.S. net capital outflow.

- c. The increase in net capital outflow raises the supply of dollars, lowering the real exchange rate.
 - d. U.S. goods become relatively cheaper to foreign goods. Exports rise, imports fall, and net exports increase.
 - e. Therefore, when a fall in the U.S. price level causes U.S. interest rates to fall, the real exchange rate depreciates, and U.S. net exports rise, thereby increasing the quantity of goods and services demanded.
6. All three of these effects imply that, all else being equal, there is an inverse relationship between the price level and the quantity of goods and services demanded.

B. Why the Aggregate-Demand Curve Might Shift

1. Shifts Arising from Changes in Consumption

- a. If Americans become more concerned with saving for retirement and reduce current consumption, aggregate demand will decline.
- b. If the government cuts taxes, it encourages people to spend more, resulting in an increase in aggregate demand.

2. Shifts Arising from Changes in Investment

- a. Suppose that the computer industry introduces a faster line of computers and many firms decide to invest in new computer systems. This will lead to an increase in aggregate demand.
- b. If firms become pessimistic about future business conditions, they may cut back on investment spending, shifting aggregate demand to the left.
- c. An investment tax credit increases the quantity of investment goods that firms demand, which results in an increase in aggregate demand.
- d. An increase in the supply of money lowers the interest rate in the short run. This leads to more investment spending, which causes an increase in aggregate demand.

3. Shifts Arising from Changes in Government Purchases

- a. If Congress decides to reduce purchases of new weapon systems, aggregate demand will fall.
- b. If state governments decide to build more highways, aggregate demand will shift to the right.

4. Shifts Arising from Changes in Net Exports

- a. When Europe experiences a recession, it buys fewer American goods, which lowers net exports at every price level. Aggregate demand will shift to the left.
- b. If the exchange rate of the U.S. dollar increases, U.S. goods become more expensive to foreigners. Net exports fall and aggregate demand shifts to the left.

V. The Aggregate-Supply Curve

A. The relationship between the price level and the quantity of goods and services supplied depends on the time horizon being examined.

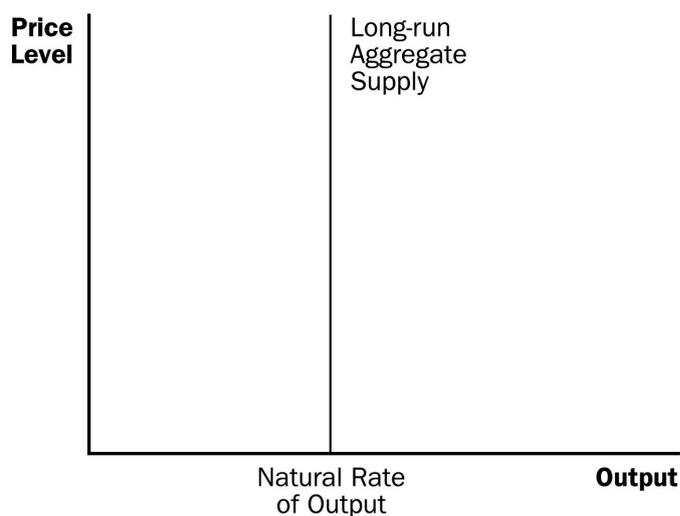
B. Why the Aggregate-Supply Curve Is Vertical in the Long Run

1. In the long run, an economy's production of goods and services depends on its supplies of resources along with the available production technology.
2. Because the price level does not affect these determinants of output in the long run, the long-run aggregate-supply curve is vertical.
3. The vertical long-run aggregate-supply curve is a graphical representation of the classical theory.

C. Why the Long-Run Aggregate-Supply Curve Might Shift

1. The position of the aggregate-supply curve occurs at an output level sometimes referred to as *potential output* or *full-employment output*.

2. Definition of **natural rate of output: the production of goods and services that an economy achieves in the long run when employment is at its natural level.**
3. This is the level of output that the economy produces when unemployment is at its natural rate.
4. Any change in the economy that alters the natural rate of output shifts the long-run aggregate-supply curve.



5. Shifts Arising from Changes in Labor
 - a. Increases in immigration increase the number of workers available. The long-run aggregate-supply curve would shift to the right.
 - b. Any change in the natural rate of unemployment will alter long-run aggregate supply as well.
5. Shifts Arising from Changes in Capital
 - a. An increase in the economy's capital stock raises productivity and thus shifts long-run aggregate supply to the right.
 - b. This would also be true if the increase occurred in human capital rather than physical capital.

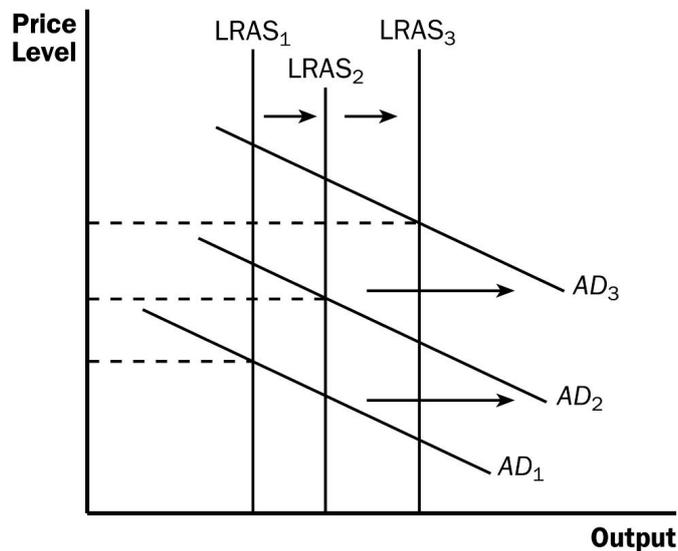
6. Shifts Arising from Changes in Natural Resources

- a. A discovery of a new mineral deposit increases long-run aggregate supply.
- b. A change in weather patterns that makes farming more difficult shifts long-run aggregate supply to the left.
- c. A change in the availability of imported resources (such as oil) can also affect long-run aggregate supply.

7. Shifts Arising from Changes in Technological Knowledge

- a. The invention of the computer has allowed us to produce more goods and services from any given level of resources. As a result, it has shifted the long-run aggregate-supply curve to the right.
- b. Opening up international trade has similar effects to inventing new production processes. Therefore, it also shifts the long-run aggregate-supply curve to the right.

D. Using Aggregate Demand and Aggregate Supply to Depict Long-Run Growth and Inflation

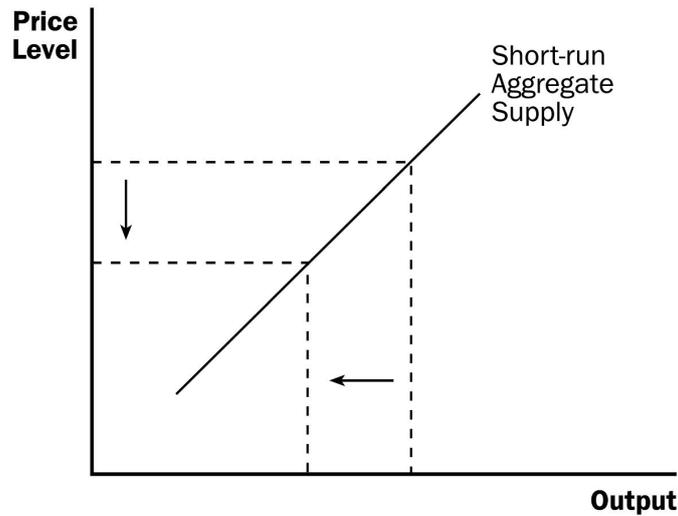


- 1. Two important forces that govern the economy in the long run are technological progress and monetary policy.

- a. Technological progress shifts long-run aggregate supply to the right.
 - b. The Fed increases the money supply over time, which raises aggregate demand.
2. The result is growth in output and continuing inflation (increases in the price level).
 3. Although the purpose of developing the model of aggregate demand and aggregate supply is to describe short-run fluctuations, these short-run fluctuations should be considered deviations from the continuing long-run trends developed here.

E. Why the Aggregate-Supply Curve Slopes Upward in the Short Run

1. The Sticky-Wage Theory
 - a. Nominal wages are often slow to adjust to changing economic conditions due to long-term contracts between workers and firms along with social norms and notions of fairness that influence wage setting and are slow to change over time.
 - b. Example: Suppose a firm has agreed in advance to pay workers an hourly wage of \$20 based on the expectation that the price level will be 100. If the price level is actually 95, the firm receives 5% less for its output than it expected and its labor costs are fixed at \$20 per hour.
 - c. Production is now less profitable, so the firm hires fewer workers and reduces the quantity of output supplied.
 - d. Nominal wages are based on expected prices and do not adjust immediately when the actual price level differs from what is expected. This makes the short-run aggregate-supply curve upward sloping.



e. This is the theory of short-run aggregate supply that is emphasized in the text.

2. The Sticky-Price Theory

- a. The prices of some goods and services are also sometimes slow to respond to changing economic conditions. This is often blamed on menu costs.
- b. If the price level falls unexpectedly, and a firm does not change the price of its product quickly, its relative price will rise and this will lead to a loss in sales.
- c. Thus, when sales decline, firms will produce a lower quantity of goods and services.
- d. Because not all prices adjust instantly to changing conditions, an unexpected fall in the price level leaves some firms with higher-than-desired prices, which depress sales and cause firms to lower the quantity of goods and services supplied.

3. The Misperceptions Theory

- a. Changes in the overall price level can temporarily mislead suppliers about what is happening in the markets in which they sell their output.
- b. As a result of these misperceptions, suppliers respond to changes in the level of prices and thus, the short-run aggregate-supply curve is upward sloping.

- c. Example: The price level falls unexpectedly. Suppliers mistakenly believe that as the price of their product falls, it is a drop in the relative price of their product. Suppliers may then believe that the reward of supplying their product has fallen, and thus they decrease the quantity that they supply. The same misperception may happen if workers see a decline in their nominal wage (caused by a fall in the price level).
 - d. Thus, a lower price level causes misperceptions about relative prices, and these misperceptions lead suppliers to respond to the lower price level by decreasing the quantity of goods and services supplied.
4. Note that each of these theories suggest that output deviates from its natural rate when the price level deviates from the price level that people expected.
 5. Note also that the effects of the change in the price level will be temporary. Eventually people will adjust their price level expectations and output will return to its natural level; thus, the aggregate-supply curve will be vertical in the long run.
 6. Because the sticky-wage theory is the simplest of the three theories, it is the one that is emphasized in the text.

F. Summing Up

1. Economists debate which of these theories is correct and it is possible that each contains an element of truth.
2. All three theories suggest that output deviates in the short run from its long-run level when the actual price level deviates from the expected price level.

$$\text{Quantity of output} = \text{Natural rate of output} + a(\text{Actual price level} - \text{Expected price level})$$

3. Each of the three theories emphasizes a problem that is likely to be temporary.
 - a. Over time, nominal wages will become unstuck, prices will become unstuck, and misperceptions about relative prices will be corrected.

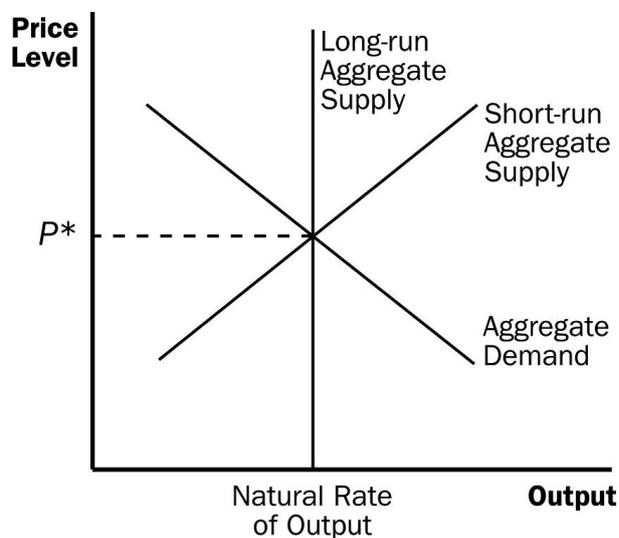
- b. In the long run, it is reasonable to assume that wages and prices are flexible and that people are not confused about relative prices.

G. Why the Short-Run Aggregate-Supply Curve Might Shift

1. Events that shift the long-run aggregate-supply curve will shift the short-run aggregate-supply curve as well.
2. However, expectations of the price level will affect the position of the short-run aggregate-supply curve even though it has no effect on the long-run aggregate-supply curve.
3. A higher expected price level decreases the quantity of goods and services supplied and shifts the short-run aggregate-supply curve to the left. A lower expected price level increases the quantity of goods and services supplied and shifts the short-run aggregate-supply curve to the right.

VI. Two Causes of Economic Fluctuations

A. Long-Run Equilibrium

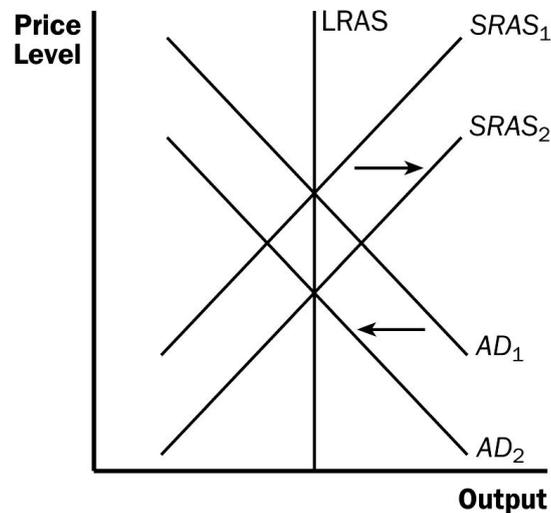


1. Long-run equilibrium is found where the aggregate-demand curve intersects with the long-run aggregate-supply curve.
2. Output is at its natural rate.

3. Also at this point, perceptions, wages, and prices have all adjusted so that the short-run aggregate-supply curve intersects at this point as well.

B. The Effects of a Shift in Aggregate Demand

1. Example: Pessimism causes household spending and investment to decline.
2. This will cause the aggregate-demand curve to shift to the left.
3. In the short run, both output and the price level fall. This drop in output means that the economy is in a recession.
4. In the long run, the economy will move back to the natural rate of output.
 - a. People will correct the misperceptions, sticky wages, and sticky prices that cause the aggregate-supply curve to be upward sloping in the short run.
 - b. The expected price level will fall, shifting the short-run aggregate-supply curve to the right.



5. In the long run, the decrease in aggregate demand can be seen solely by the drop in the equilibrium price level. Thus, the long-run effect of a change in aggregate demand is a nominal change (in the price level) but not a real change (output is the same).

6. Instead of waiting for the economy to adjust on its own, policymakers may want to eliminate the recession by boosting government spending or increasing the money supply. Either way, these policies could shift the aggregate demand curve back to the right.

7. *FYI: Monetary Neutrality Revisited*

- a. According to classical theory, changes in the quantity of money affect nominal variables such as the price level, but not real variables such as output.
- b. If the Fed decreases the money supply, aggregate demand shifts to the left. In the short run, output and the price level decline. After expectations, prices, and wages have adjusted, the economy finds itself back on the long-run aggregate-supply curve at the natural rate of output.
- c. Thus, changes in the money supply have effects on real output in the short run only.

8. *Case Study: Two Big Shifts in Aggregate Demand: The Great Depression and World War II*

- a. Figure 9 shows real GDP for the United States since 1900.
- b. Two time periods of economic fluctuations can be seen dramatically in the picture. These are the early 1930s (the Great Depression) and the early 1940s (World War II).
- c. From 1929 to 1933, GDP fell by 27%. From 1939 to 1944, the economy's production of goods and services almost doubled.

9. *Case Study: The Recession of 2008–2009*

- a. The United States experienced a financial crisis and severe economic downturn in 2008 and 2009.
- b. The recession was preceded by a housing boom fueled by low interest rates and various developments in the mortgage market.

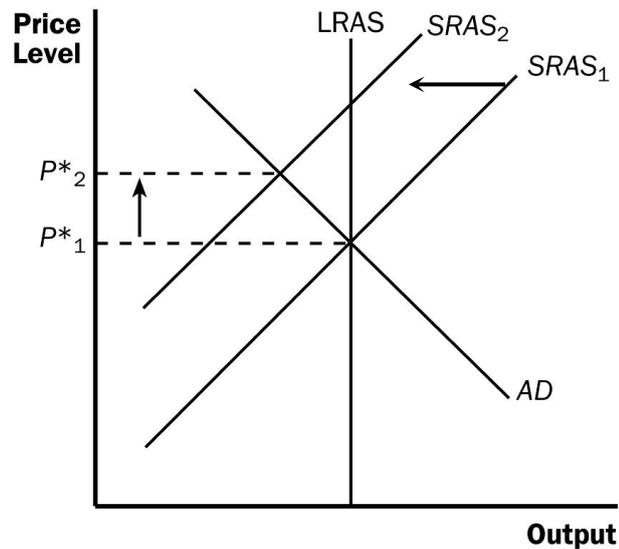
- c. From 2006 to 2009, housing values in the U.S. fell by 30%. This led to substantial defaults, causing additional large losses in the values of mortgage-backed securities.
- d. The economy experienced a large drop in aggregate demand causing real GDP to fall and unemployment to rise.

10. *In the News: Modern Parallels to the Great Depression*

- a. As the U.S. economy tanked during 2008 and 2009, many wondered if we were on the brink of another Great Depression.
- b. This is a *New York Times* article by Professor Mankiw describing how the economy looked midway through 2008.

C. The Effects of a Shift in Aggregate Supply

- 1. Example: Firms experience a sudden increase in their costs of production.
- 2. This will cause the short-run aggregate-supply curve to shift to the left. (Depending on the event, long-run aggregate supply may also shift. We will assume that it does not.)
- 3. In the short run, output will fall and the price level will rise. The economy is experiencing stagflation.
- 4. Definition of **stagflation**: a period of falling output and rising prices.



5. The result over time may be a wage-price spiral.
6. Eventually, the low level of output will put downward pressure on wages.
 - a. Producing goods and services becomes more profitable.
 - b. Short-run aggregate supply shifts to the right until the economy is again producing at the natural rate of output.
7. If policymakers want to end the stagflation, they can shift the aggregate-demand curve. Note that they cannot simultaneously offset the drop in output and the rise in the price level. If they increase aggregate demand, the recession will end, but the price level will be permanently higher.
8. *Case Study: Oil and the Economy*
 - a. Crude oil is a key input in the production of many goods and services.
 - b. When some event (often political) leads to a rise in the price of crude oil, firms must endure higher costs of production and the short-run aggregate-supply curve shifts to the left.
 - c. In the mid-1970s, OPEC lowered production of oil and the price of crude oil rose substantially. The inflation rate in the United States was pushed to over 10%. Unemployment also grew from 4.9% in 1973 to 8.5% in 1975.

- d. This occurred again in the late 1970s. Oil prices rose, output fell, and the rate of inflation increased.
 - e. In the late 1980s, OPEC began to lose control over the oil market as members began cheating on the agreement. Oil prices fell, which led to a rightward shift of the short-run aggregate-supply curve. This caused both unemployment and inflation to decline.
9. *FYI: The Origins of the Model of Aggregate Demand and Aggregate Supply*
- a. The AD/AS model is a by-product of the Great Depression.
 - b. In 1936, economist John Maynard Keynes published a book that attempted to explain short-run fluctuations.
 - c. Keynes believed that recessions occur because of inadequate demand for goods and services.
 - d. Therefore, Keynes advocated policies to increase aggregate demand.

(三) 思政设计

结合案例以及模型分析,提高学生正确认识和分析我国宏观经济现象的能力,通过紧密联系我国宏观经济生活实际,加深对党的经济方针政策正确性的认识。让学生学会利用总需求与总供给模型来解释经济波动。一方面,在长期经济分析中,其经济增长来源于生产要素的数量以及生产技术的进步;另一方面,在短期经济分析中,产出水平的波动来自于短期总供给曲线与总需求曲线的短期均衡位置的变动。

实现社会总供给与总需求的平衡,可以从调节总供给与总需求两个方面着手。由于调节总供给一般不能短期见效,这是因为:若总供给大于总需求,要强制抑制已有供给能力,势必造成生产破坏;若总供给小于总需求,增加生产能力,则需要一定的生产周期。这样短期宏观调控要取得成效,就需要调节总需求。

(四) 课后练习

1. Name two macroeconomic variables that during a recession. Name one macroeconomic variable that rises during a recession.

2. Draw a diagram with aggregate demand, short-run aggregate supply, and long-run aggregate supply. Be careful to label the axes correctly.
3. List and explain the three reasons the aggregate demand to the left? Use the model of aggregate demand output and the price level to the left?
4. Explain why the long-run aggregate-supply curve is vertical.
5. List and explain the three theories for why the short-run aggregate-supply curve is upward sloping.
6. What might shift the aggregate-demand curve to the left? Use the model of aggregate demand and aggregate supply to trace through the short-run and long-run effects of such a shift on output and the price level.

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

第三十四章 The Influence of Monetary and Fiscal Policy on Aggregate Demand

(一) 目的与要求

Chapter 34 is the second chapter in a three-chapter sequence that concentrates on short-run fluctuations in the economy around its long-term trend. In Chapter 33, we introduced the model of aggregate supply and aggregate demand. In Chapter 34, we see how the government's monetary and fiscal policies affect aggregate demand. In Chapter 35, we will see some of the trade-offs between short-run and long-run objectives when we address the relationship between inflation and unemployment.

The purpose of Chapter 34 is to address the short-run effects of monetary and fiscal policies. In Chapter 33, we found that when aggregate demand or short-run aggregate supply shifts, it causes fluctuations in output. As a result, policymakers sometimes try to offset these shifts by shifting aggregate demand with monetary and fiscal policy. Chapter 34 addresses the theory behind these policies and some of the shortcomings of stabilization policy.

In this chapter, students should be able to:

1. Learn the theory of liquidity preference as a short-run theory of the interest rate
2. analyze how monetary policy affects interest rates and aggregate demand
3. analyze how fiscal policy affects interest rates and aggregate demand
4. Discuss the debate over whether policymakers should try to stabilize the economy

(二) 教学内容

I. How Monetary Policy Influences Aggregate Demand

A. The aggregate-demand curve is downward sloping for three reasons.

1. The wealth effect.
2. The interest-rate effect.
3. The exchange-rate effect.

B. All three effects occur simultaneously, but are not of equal importance.

1. Because a household's money holdings are a small part of total wealth, the wealth effect is relatively small.
2. Because imports and exports are a small fraction of U.S. GDP, the exchange-rate effect is also fairly small for the U.S. economy.
3. Thus, the most important reason for the downward-sloping aggregate-demand curve is the interest-rate effect.

C. Definition of **theory of liquidity preference**: **Keynes's theory that the interest rate adjusts to bring money supply and money demand into balance.**

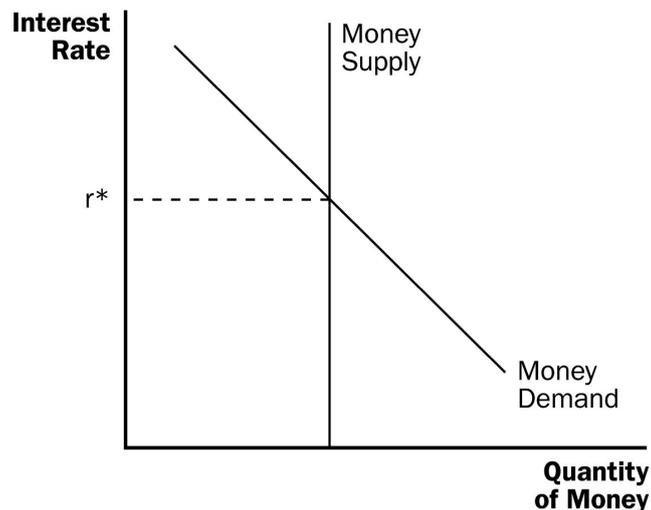
D. The Theory of Liquidity Preference

1. This theory is an explanation of the supply and demand for money and how they relate to the interest rate.
2. Money Supply
 - a. The money supply in the economy is controlled by the Federal Reserve.
 - b. The Fed can alter the supply of money using open market operations, changes in the discount rate, and changes in reserve requirements.
 - c. Because the Fed can control the size of the money supply directly, the quantity of money supplied does not depend on any other economic variables, including the interest rate. Thus, the supply of money is represented by a vertical supply curve.
3. Money Demand
 - a. Any asset's liquidity refers to the ease with which that asset can be converted into a medium of exchange. Thus, money is the most liquid asset in the economy.
 - b. The liquidity of money explains why people choose to hold it instead of other assets that could earn them a higher return.
 - c. However, the return on other assets (the interest rate) is the opportunity cost of holding money. All else being equal, as the interest rate rises, the quantity

of money demanded will fall. Therefore, the demand for money will be downward sloping.

4. Equilibrium in the Money Market

- a. The interest rate adjusts to bring money demand and money supply into balance.
- b. If the interest rate is higher than the equilibrium interest rate, the quantity of money that people want to hold is less than the quantity that the Fed has supplied. Thus, people will try to buy bonds or deposit funds in an interest-bearing account. This increases the funds available for lending, pushing interest rates down.



- c. If the interest rate is lower than the equilibrium interest rate, the quantity of money that people want to hold is greater than the quantity that the Fed has supplied. Thus, people will try to sell bonds or withdraw funds from an interest-bearing account. This decreases the funds available for lending, pulling interest rates up.

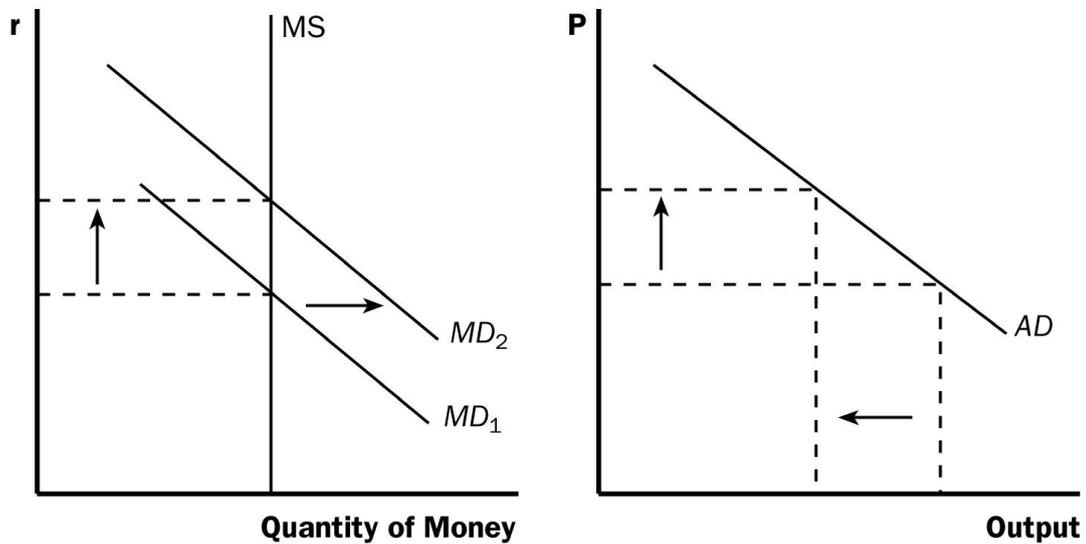
E. *FYI: Interest Rates in the Long Run and the Short Run*

1. In an earlier chapter, we said that the interest rate adjusts to balance the supply and demand for loanable funds.

2. In this chapter, we proposed that the interest rate adjusts to balance the supply and demand for money.
3. To understand how these two statements can both be true, we must discuss the difference between the short run and the long run.
4. In the long run, the economy's level of output, the interest rate, and the price level are determined by the following manner:
 - a. *Output* is determined by the levels of resources and technology available.
 - b. For any given level of output, the *interest rate* adjusts to balance the supply and demand for loanable funds.
 - c. Given output and the interest rate, the *price level* adjusts to balance the supply and demand for money. Changes in the supply of money lead to proportionate changes in the price level.
5. In the short run, the economy's level of output, the interest rate, and the price level are determined by the following manner:
 - a. The *price level* is stuck at some level (based on previously formed expectations) and is unresponsive to changes in economic conditions.
 - b. For any given price level, the *interest rate* adjusts to balance the supply and demand for money.
 - c. The interest rate that balances the money market influences the quantity of goods and services demanded and thus the level of *output*.

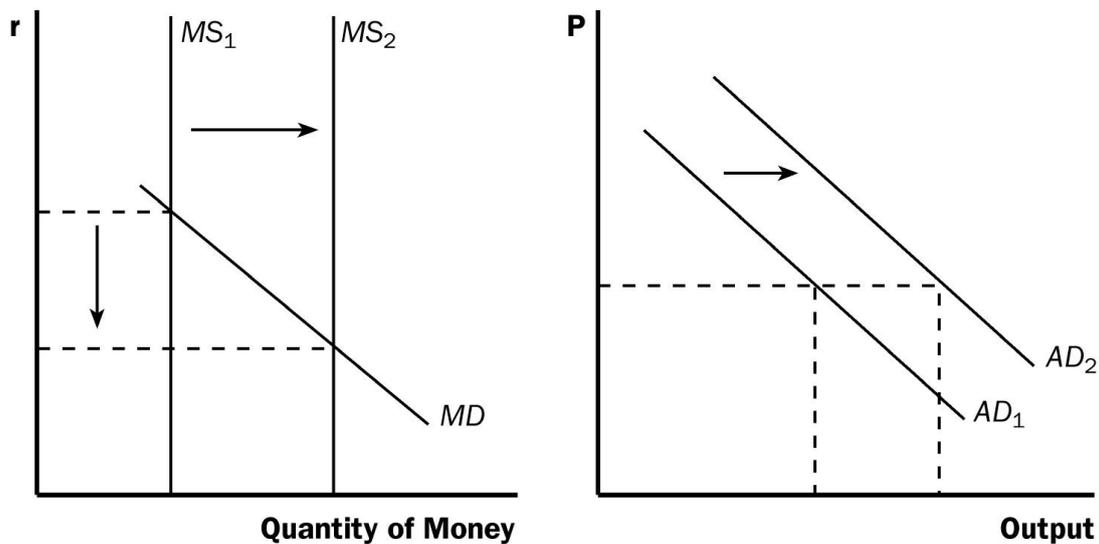
F. The Downward Slope of the Aggregate-Demand Curve

1. When the price level increases, the quantity of money that people need to hold becomes larger. Thus, an increase in the price level leads to an increase in the demand for money, shifting the money demand curve to the right.
2. For a fixed money supply, the interest rate must rise to balance the supply and demand for money.



3. At a higher interest rate, the cost of borrowing and the return on saving both increase. Thus, consumers will choose to spend less and will be less likely to invest in new housing. Firms will be less likely to borrow funds for new equipment or structures. In short, the quantity of goods and services purchased in the economy will fall.
4. This implies that as the price level increases, the quantity of goods and services demanded falls. This is Keynes's interest-rate effect.

G. Changes in the Money Supply



1. Example: The Fed buys government bonds in open-market operations.
2. This will increase the supply of money, shifting the money supply curve to the right. The equilibrium interest rate will fall.
3. The lower interest rate reduces the cost of borrowing and the return to saving. This encourages households to increase their consumption and desire to invest in new housing. Firms will also increase investment, building new factories and purchasing new equipment.
4. The quantity of goods and services demanded will rise at every price level, shifting the aggregate-demand curve to the right.
5. Thus, a monetary injection by the Fed increases the money supply, leading to a lower interest rate, and a larger quantity of goods and services demanded.

H. The Role of Interest-Rate Targets in Fed Policy

1. In recent years, the Fed has conducted policy by setting a target for the federal funds rate (the interest rate that banks charge one another for short-term loans).

- a. The target is reevaluated every six weeks when the Federal Open Market Committee meets.
 - b. The Fed has chosen to use this interest rate as a target in part because the money supply is difficult to measure with sufficient precision.
2. Because changes in the money supply lead to changes in interest rates, monetary policy can be described either in terms of the money supply or in terms of the interest rate.

I. *FYI: The Zero Lower Bound*

1. What if the Fed's target interest rate is already close to zero?
2. Some economists describe this situation as a liquidity trap.
 - a. Nominal interest rates cannot fall below zero.
 - b. Expansionary monetary policy cannot work.
3. Other economists are less concerned with this situation.
 - a. The central bank could alter inflationary expectations.
 - b. The Fed could also use other financial instruments in open market operations.

J. *Case Study: Why the Fed Watches the Stock Market (and Vice Versa)*

1. A booming stock market expands the aggregate demand for goods and services.
 - a. When the stock market booms, households become wealthier, and this increased wealth stimulates consumer spending.
 - b. Increases in stock prices make it attractive for firms to issue new shares of stock and this increases investment spending.
2. Because one of the Fed's goals is to stabilize aggregate demand, the Fed may respond to a booming stock market by keeping the supply of money lower and

raising interest rates. The opposite would hold true if the stock market would fall.

3. Stock market participants also keep an eye on the Fed's policy plans. When the Fed lowers the money supply, it makes stocks less attractive because alternative assets (such as bonds) pay higher interest rates. Also, higher interest rates may lower the expected profitability of firms.

II. How Fiscal Policy Influences Aggregate Demand

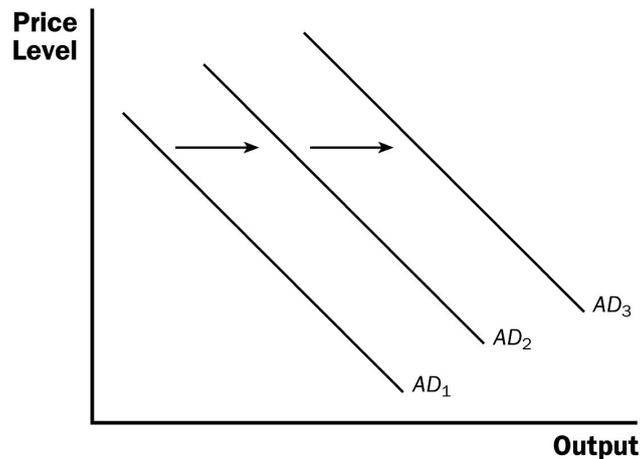
A. Definition of **fiscal policy**: the setting of the level of government spending and taxation by government policymakers.

B. Changes in Government Purchases

1. When the government changes the level of its purchases, it influences aggregate demand directly. An increase in government purchases shifts the aggregate-demand curve to the right, while a decrease in government purchases shifts the aggregate-demand curve to the left.
2. There are two macroeconomic effects that cause the size of the shift in the aggregate-demand curve to be different from the change in the level of government purchases. They are called the multiplier effect and the crowding-out effect.

C. The Multiplier Effect

1. Suppose that the government buys a product from a company.
 - a. The immediate impact of the purchase is to raise profits and employment at that firm.
 - b. As a result, owners and workers at this firm will see an increase in income, and will therefore likely increase their own consumption.
 - c. Thus, total spending rises by more than the increase in government purchases.



2. Definition of **multiplier effect**: the additional shifts in aggregate demand that result when expansionary fiscal policy increases income and thereby increases consumer spending.
3. The multiplier effect continues even after the first round.
 - a. When consumers spend part of their additional income, it provides additional income for other consumers.
 - b. These consumers then spend some of this additional income, raising the incomes of yet another group of consumers.
4. A Formula for the Spending Multiplier
 - a. The *marginal propensity to consume* (MPC) is the fraction of extra income that a household consumes rather than saves.
 - b. Example: The government spends \$20 billion on new planes. Assume that $MPC = 3/4$.
 - c. Incomes will increase by \$20 billion, so consumption will rise by $MPC \times \$20$ billion. The second increase in consumption will be equal to $MPC \times (MPC \times \$20 \text{ billion})$ or $MPC^2 \times \$20$ billion.
 - d. To find the total impact on the demand for goods and services, we add up all of these effects:

$$\begin{aligned} \text{Change in government purchases} &= \$20 \text{ billion} \\ \text{First change in consumption} &= MPC \times \$20 \text{ billion} \end{aligned}$$

$\text{multiplier} = 1/(1 - MPC)$

Second change in consumption	$= MPC^2 \times \$20$ billion
Third change in consumption	$= MPC^3 \times \$20$ billion
·	·
·	·
·	·

Total Change = $(1 + MPC + MPC^2 + MPC^3 + \dots) \times \20
billion

e. This means that the multiplier can be written as:

$$\text{Multiplier} = (1 + MPC + MPC^2 + MPC^3 + \dots).$$

- f. Because this expression is an infinite geometric series, it also can be written as:
- g. Note that the size of the multiplier depends on the size of the marginal propensity to consume.

5. Other Applications of the Multiplier Effect

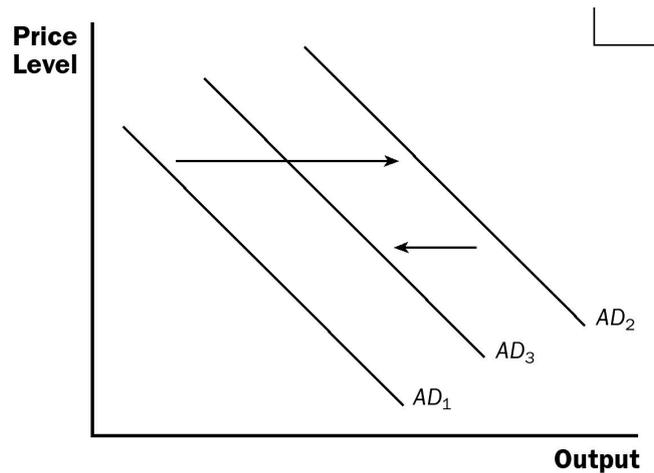
- a. The multiplier effect applies to any event that alters spending on any component of GDP (consumption, investment, government purchases, or net exports).
- b. Examples include a reduction in net exports due to a recession in another country or a stock market boom that raises consumption.

D. The Crowding-Out Effect

1. The crowding-out effect works in the opposite direction.
2. Definition of **crowding-out effect**: the offset in aggregate demand that results when expansionary fiscal policy raises the interest rate and thereby reduces investment spending.
3. As we discussed earlier, when the government buys a product from a company, the immediate impact of the purchase is to raise profits and employment at that

firm. As a result, owners and workers at this firm will see an increase in income, and will therefore likely increase their own consumption.

4. If consumers want to purchase more goods and services, they will need to increase their holdings of money. This shifts the demand for money to the right, pushing up the interest rate.



5. The higher interest rate raises the cost of borrowing and the return to saving. This discourages households from spending their incomes for new consumption or investing in new housing. Firms will also decrease investment, choosing not to build new factories or purchase new equipment.
6. Thus, even though the increase in government purchases shifts the aggregate-demand curve to the right, this fall in consumption and investment will pull aggregate demand back toward the left. Thus, aggregate demand increases by less than the increase in government purchases.
7. Therefore, when the government increases its purchases by $\$X$, the aggregate demand for goods and services could rise by more or less than $\$X$, depending on whether the multiplier effect or the crowding-out effect is larger.
 - a. If the multiplier effect is greater than the crowding-out effect, aggregate demand will rise by more than $\$X$.
 - b. If the multiplier effect is less than the crowding-out effect, aggregate demand will rise by less than $\$X$.

E. Changes in Taxes

1. Changes in taxes affect a household's take-home pay.
 - a. If the government reduces taxes, households will likely spend some of this extra income, shifting the aggregate-demand curve to the right.
 - b. If the government raises taxes, household spending will fall, shifting the aggregate-demand curve to the left.
2. The size of the shift in the aggregate-demand curve will also depend on the sizes of the multiplier and crowding-out effects.
 - a. When the government lowers taxes and consumption increases, earnings and profits rise, which further stimulate consumer spending. This is the multiplier effect.
 - b. Higher incomes lead to greater spending, which means a higher demand for money. Interest rates rise and investment spending falls. This is the crowding-out effect.
3. Another important determinant of the size of the shift in aggregate demand due to a change in taxes is whether people believe that the tax change is permanent or temporary. A permanent tax change will have a larger effect on aggregate demand than a temporary one.

F. *FYI: How Fiscal Policy Might Affect Aggregate Supply*

1. Because people respond to incentives, a decrease in tax rates may cause individuals to work more, because they get to keep more of what they earn. If this occurs, the aggregate-supply curve would increase (shift to the right).
2. Changes in government purchases may also affect supply. If the government increases spending on capital projects or education, the productive ability of the economy is enhanced, shifting aggregate supply to the right.

(三) 思政设计

结合案例以及模型分析，使学生了解财政政策和货币政策工具，使学生识记财政政策和货币政策的含义，理解财政政策和货币政策类型及运用；使学生

会分析说明财政政策和货币政策在我国的成功运用。

在短期宏观调控中,通过实施财政政策或货币政策来调节总需求,从而调节经济。在宏观经济政策体系中,财政政策和货币政策调节总需求的作用明显。我国从 20 世纪 90 年代以来,我国在宏观调控中,主要使用了财政政策和货币政策,收到了成效。因而在教学中要对财政、货币政策给以充分的重视。宏观调控政策是国家为了实现一定时期的目标,依据客观经济规律和我国的具体情况,制定并实施的规范和指导社会经济运行的准则。经济政策在制定上要反映国家经济计划的要求,具有计划手段宏观性、战略性、政策性的长处;在实施上要运用各种经济杠杆,具有经济手段反应灵敏、运用灵活、作用普遍的优势,同时还需有法律手段、行政手段的配合。

(四) 课后练习

1. What is the theory of liquidity preference? How does it help explain the downward slope of the aggregate-demand curve?
2. Use the theory of liquidity preference to explain how a decrease in the money supply affects the aggregate-demand curve.
3. The government spends \$3 billion to buy police cars. Explain why aggregate demand might increase by more than \$3 billion. Explain why aggregate demand might increase by less than \$3 billion.
4. Suppose that survey measures of consumer confidence indicate a wave of pessimism is sweeping the country. If policymakers do nothing, what will happen to aggregate demand? What should the Fed do if it wants to stabilize aggregate demand? If the Fed does nothing, what might Congress do to stabilize aggregate demand?

(五) 教学方法与手段

本章教学主要采用课堂讲授、多媒体教学、分组讨论、课堂讨论等。

五、各教学环节学时分配

《宏观经济学》各教学环节学时分配

教学时数 课程内容	教学环节					小计
	讲课	习题课	讨论课	实验	其他教学环节	
第二十三章	4	1	1			6
第二十四章	3					3
第二十五章	4	1	1			6
第二十六章	4	1	1			6
第二十九章	4	1	1			6
第三十章	4	1	1			6
第三十三章	4	1	1			6
第三十四章	4	1	1			6
合计	31	7	7			45

六、推荐教材和教学参考资源

(一) 推荐教材

1. N. 格雷戈里. 曼昆. 经济学原理(第 6 版)宏观部分. 北京: 清华大学出版社, 2017

(二) 参考书

1. 保罗. A. 萨缪尔逊, 威廉. D. 诺德豪斯. 经济学. 北京: 中国发展出版社, 1992 年
2. 多恩布什、费希尔. 宏观经济学 (第6版), 1998年
3. 克鲁格曼: 《宏观经济学 (第二版)》, 中国人民大学出版社, 2012年。
4. 高鸿业. 西方经济学 (宏观部分 第六版). 人民大学出版社, 2014年
5. 斯蒂格利茨. 《经济学》(第四版). 中国人民大学出版社, 2013年。
6. 哈伯德. 《经济学 (宏观)》. 机械工业出版社, 2011年。

七、其他说明

1. 清华大学出版社 2017 年出版的《经济学原理(第 6 版)宏观部分》英文教材中, 删去了第 27、28、31、32 章, 故教学中省去相应章课程内容。
2. 本课程为全英教学课程。

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