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SAVING, INVESTMENT, AND THE FINANCIAL SYSTEM

LEARNING OBJECTIVES:

By the end of this chapter, students should understand:

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

KEY POINTS:

1. The U.S. financial system is made up of many types of financial institutions, such as the bond market, the stock market, banks, and mutual funds. All these institutions act to direct the resources of households who want to save some of their income into the hands of households and firms who want to borrow.
2. National income accounting identities reveal some important relationships among macroeconomic variables. In particular, for a closed economy, national saving must equal investment. Financial institutions are the mechanism through which the economy matches one person's saving with another person's investment.
3. The interest rate is determined by the supply and demand for loanable funds. The supply of loanable funds comes from households who want to save some of their income and lend it out. The demand for loanable funds comes from households and firms who want to borrow for investment. To analyze how any policy or event affects the interest rate, one must consider how it affects the supply and demand for loanable funds.
4. National saving equals private saving plus public saving. A government budget deficit represents negative public saving and, therefore, reduces national saving and the supply of loanable funds available to finance investment. When a government budget deficit crowds out investment, it reduces the growth of productivity and GDP.

CHAPTER OUTLINE:

- 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.
 - 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 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 reveals the probability that the borrower will fail to pay some of the interest or principal. All else 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 these bonds more attractive, thus 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 stock exchanges (like 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. *FYI: How to Read the Newspaper's Stock Tables?* shows an example of a stock table from the newspaper and then explains what each of the columns means.

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 savers interest on their deposits and charge borrowers a 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 and 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 salary of a fund manager.

C. *In the News: The Stock Market Boom of the 1990s*

1. The U.S. stock market experienced a quadrupling of stock prices during the 1990s.
2. This is an article from *The Wall Street Journal* suggesting that this rise in prices occurred because investors began viewing stocks as less risky than the previously thought.

D. 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.

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). 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):

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

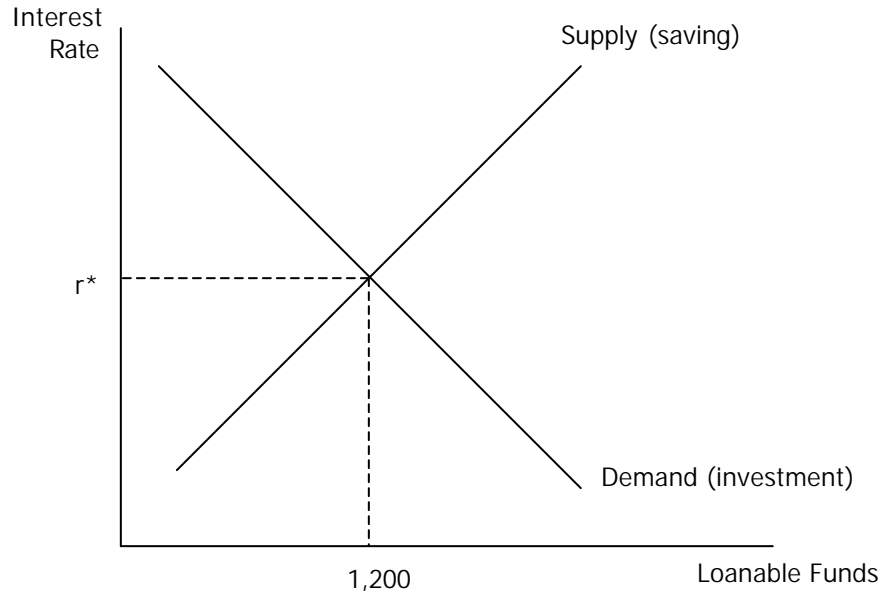
10. The first part of this equation ($Y - T - C$) is called private saving; the second part ($T - G$) is called public saving.

- a. Definition of **Private Saving**: the income that households have left after paying for taxes and consumption.
- b. Definition of **Public Saving**: the tax revenue that the government has left after paying for its spending.

- c. Definition of **Budget Surplus**: an excess of tax revenue over government spending.
 - d. 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.
- B. The Meaning of Saving and Investment
 - 1. In macroeconomics, investment refers to the purchase of new capital, such as equipment or buildings.
 - 2. 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

Figure 25-1

- 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 loans 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 loanable funds 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 result in upward pressure on the interest rate.
5. The supply and demand for loanable funds depends on the real interest rate because the real rate reflects the true return to saving and the true cost of borrowing.

C. *FYI: Present Value*

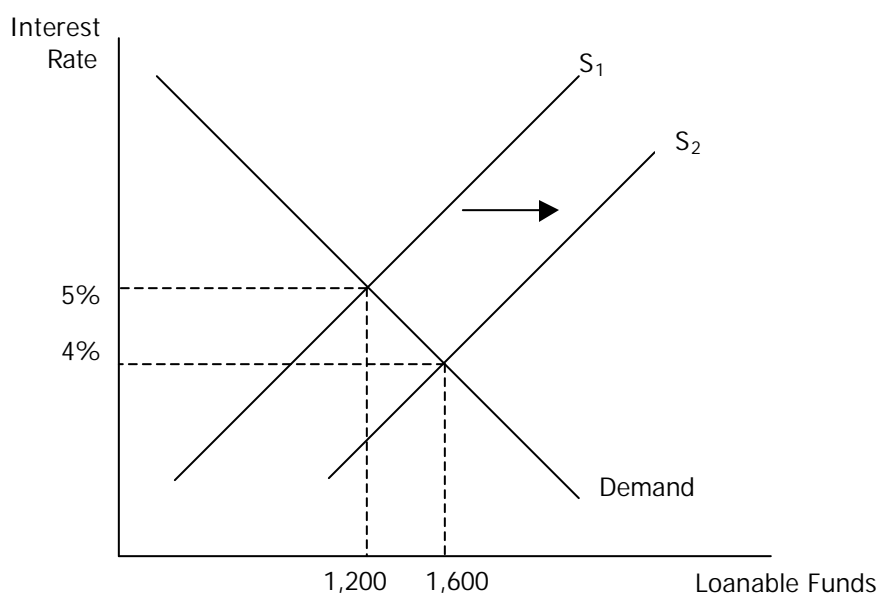
1. Money today is more valuable than the same amount of money in the future.
2. When comparing dollar amounts received today versus dollar amounts to be received in the future, we use the method of present value.
3. The general formula if present value is that, if r is the interest rate, then an amount ($\$X$) to be received in N years has a present value of:

$$\text{present value} = \frac{\$X}{(1 + r)^N}$$

D. Policy 1: Taxes and Saving

Figure 25-2

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.

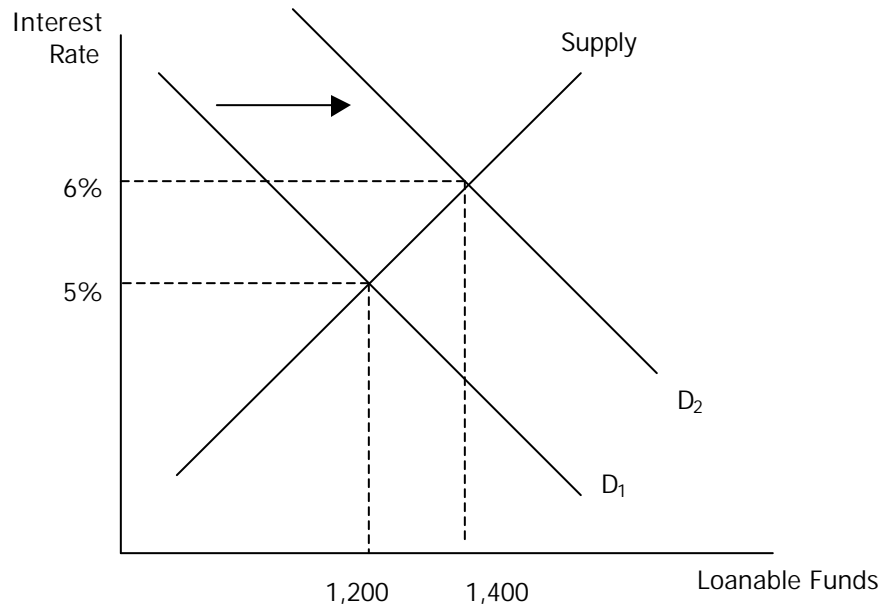


E. Policy 2: Taxes and Investment

Figure 25-3

1. Suppose instead that the government passed a new law lowering taxes for any firm building a new factory (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.

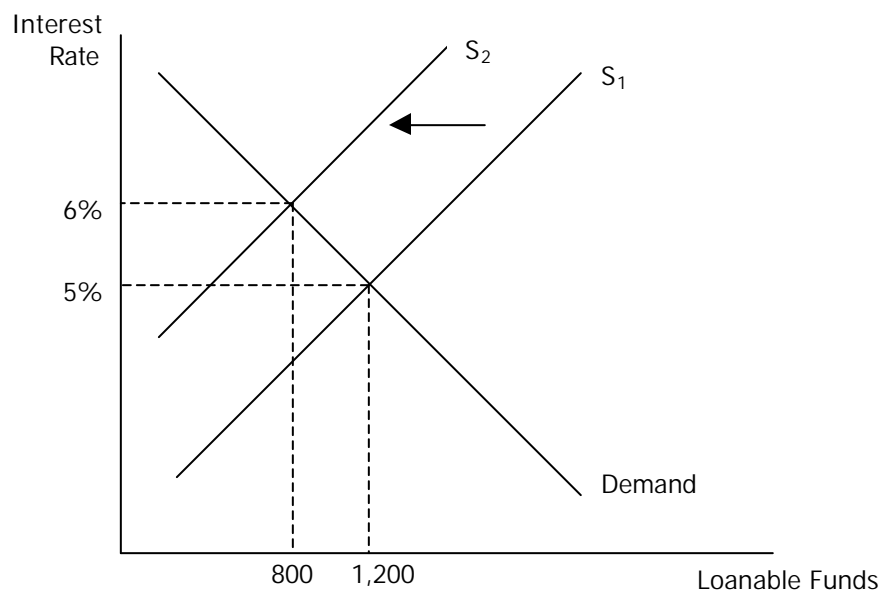
- b. The equilibrium interest rate will rise, and the equilibrium quantity of funds will increase as well.
2. Thus, the result of the new tax laws would be an increase in the equilibrium interest rate and greater saving and investment.



F. Policy 3: Government Budget Deficits

Figure 25-4

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 Debate Over the Budget Surplus*
 - a. In the late 1990s, the U.S. government found itself with a budget surplus.
 - b. This created a debate on what to do with this surplus.
 - c. Some policymakers wanted to leave the surplus alone, while others felt that the surplus should be used to finance additional government spending or tax cuts.
8. *Case Study: The History of U.S. Government Debt*

Figure 25-5

- a. Figure 25-5 shows the debt of the U.S. government expressed as a percentage of GDP. In recent years, government debt has been about 50 percent of GDP.

Table 25-1

- 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.