Lecture 4
10.3.2015

Saving, Investment, and the Financial System

Outline

- How does the economy coordinates saving and investment?
  - The Financial System – financial markets and financial intermediaries
- What ensures that *the supply of funds* from those who want to save *balances the demand* for funds from those who want to invest?
  - A model of the supply and demand for funds & government policies (through interest rate)

Copyright © 2004 South-Western

The Financial System

- The financial system consists of the group of institutions in the economy that help to match one person’s saving with another person’s investment.
- It moves the economy’s scarce resources from savers to borrowers.

Copyright © 2004 South-Western

FINANCIAL INSTITUTIONS IN THE U.S. ECONOMY

- The *financial system* is made up of financial institutions that coordinate the actions of savers and borrowers.
- Financial institutions can be grouped into two different categories: financial markets and financial intermediaries.

Copyright © 2004 South-Western

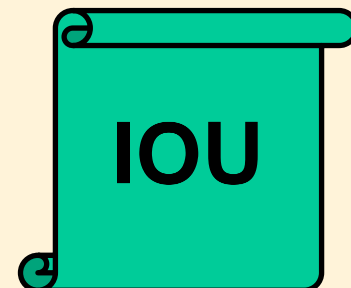
FINANCIAL INSTITUTIONS IN THE U.S. ECONOMY

- Financial Markets
  - Institutions through which savers can directly provide funds to borrowers.
  - Stock Market
  - Bond Market
- Financial Intermediaries
  - Financial institutions through which savers can indirectly provide funds to borrowers.
  - Banks
  - Mutual Funds

Copyright © 2004 South-Western

Financial Markets

- The Bond Market
  - A *bond* is a certificate of indebtedness that specifies obligations of the borrower to the holder of the bond.



  - Characteristics of a Bond
    - *Term*: The length of time until the bond matures.
    - *Credit Risk*: The probability that the borrower will fail to pay some of the interest or principal.
    - *Tax Treatment*: The way in which the tax laws treat the interest on the bond.
      - Municipal bonds are federal tax exempt.

Copyright © 2004 South-Western

Financial Markets

- The Stock Market
  - *Stock* represents a claim to partial ownership in a firm and is therefore, a claim to the profits that the firm makes.
  - The sale of stock to raise money is called *equity financing*.
    - Compared to bonds, stocks offer both higher risk and potentially higher returns.
  - The most important stock exchanges
    - US - the New York SE, the American SE, and NASDAQ
    - London SE, Tokyo SE

Copyright © 2004 South-Western

Financial Markets

- The Stock Market
  - Most newspaper stock tables provide the following information:
    - Price (of a share)
    - Volume (number of shares sold)
    - Dividend (profits paid to stockholders)
    - Price-earnings ratio

Copyright © 2004 South-Western

Financial Intermediaries

- *Financial intermediaries* are financial institutions through which savers can indirectly provide funds to borrowers.

Copyright © 2004 South-Western

Financial Intermediaries

- Banks
  - take deposits from people who want to save and use the deposits to make loans to people who want to borrow.
  - pay depositors interest on their deposits and charge borrowers slightly higher interest on their loans.

Copyright © 2004 South-Western

Financial Intermediaries

- Banks
  - Banks help create a *medium of exchange* by allowing people to write checks against their deposits.
    - A medium of exchanges is an item that people can easily use to engage in transactions.
  - This facilitates the purchases of goods and services.

Copyright © 2004 South-Western

Financial Intermediaries

- Mutual Funds
  - A *mutual fund* is an institution that sells shares to the public and uses the proceeds to buy a portfolio, of various types of stocks, bonds, or both.
    - They allow people with small amounts of money to easily diversify.

Copyright © 2004 South-Western

Financial Intermediaries

- Other Financial Institutions
  - Credit unions
  - Pension funds
  - Insurance companies
  - Loan sharks

Copyright © 2004 South-Western

SAVING AND INVESTMENT IN THE NATIONAL INCOME ACCOUNTS

- Recall that GDP is both total income in an economy and total expenditure on the economy's output of goods and services:

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

Copyright © 2004 South-Western

Some Important Identities

- Assume a closed economy – one that does not engage in international trade:

$$Y = C + I + G$$

Copyright © 2004 South-Western

Some Important Identities

- Now, subtract C and G from both sides of the equation:

$$Y - C - G = I$$

- The left side of the equation is the total income in the economy after paying for consumption and government purchases and is called *national saving,* or just *saving (S).*
- Substituting *S* for *Y - C - G*, the equation can be written as:

$$S = I$$

Copyright © 2004 South-Western

Some Important Identities

- National saving, or saving, is equal to:

$$S = I$$

$$S = Y - C - G$$

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

Copyright © 2004 South-Western

The Meaning of Saving and Investment

- National Saving
  - *National saving* is the total income in the economy that remains after paying for consumption and government purchases.
- Private Saving
  - *Private saving* is the amount of income that households have left after paying their taxes and paying for their consumption.

$$\text{Private saving} = (Y - T - C)$$

Copyright © 2004 South-Western

The Meaning of Saving and Investment

- Public Saving
  - *Public saving* is the amount of tax revenue that the government has left after paying for its spending.

$$Public\ saving = (T - G)$$

Copyright © 2004 South-Western

The Meaning of Saving and Investment

- Surplus and Deficit
  - If $T > G$, the government runs a *budget surplus* because it receives more money than it spends.
  - The surplus of $T - G$ represents public saving.
  - If $G > T$, the government runs a *budget deficit* because it spends more money than it receives in tax revenue.
- For the economy as a whole, saving must be equal to investment.

$$S = I$$

Copyright © 2004 South-Western

THE MARKET FOR LOANABLE FUNDS

- Financial markets coordinate the economy's saving and investment in the market for loanable funds.

Copyright © 2004 South-Western

THE MARKET FOR LOANABLE FUNDS

- The *market for loanable funds* is the market in which those who want to save supply funds and those who want to borrow to invest demand funds.

- Loanable funds refers to all income that people have chosen to save and lend out, rather than use for their own consumption.

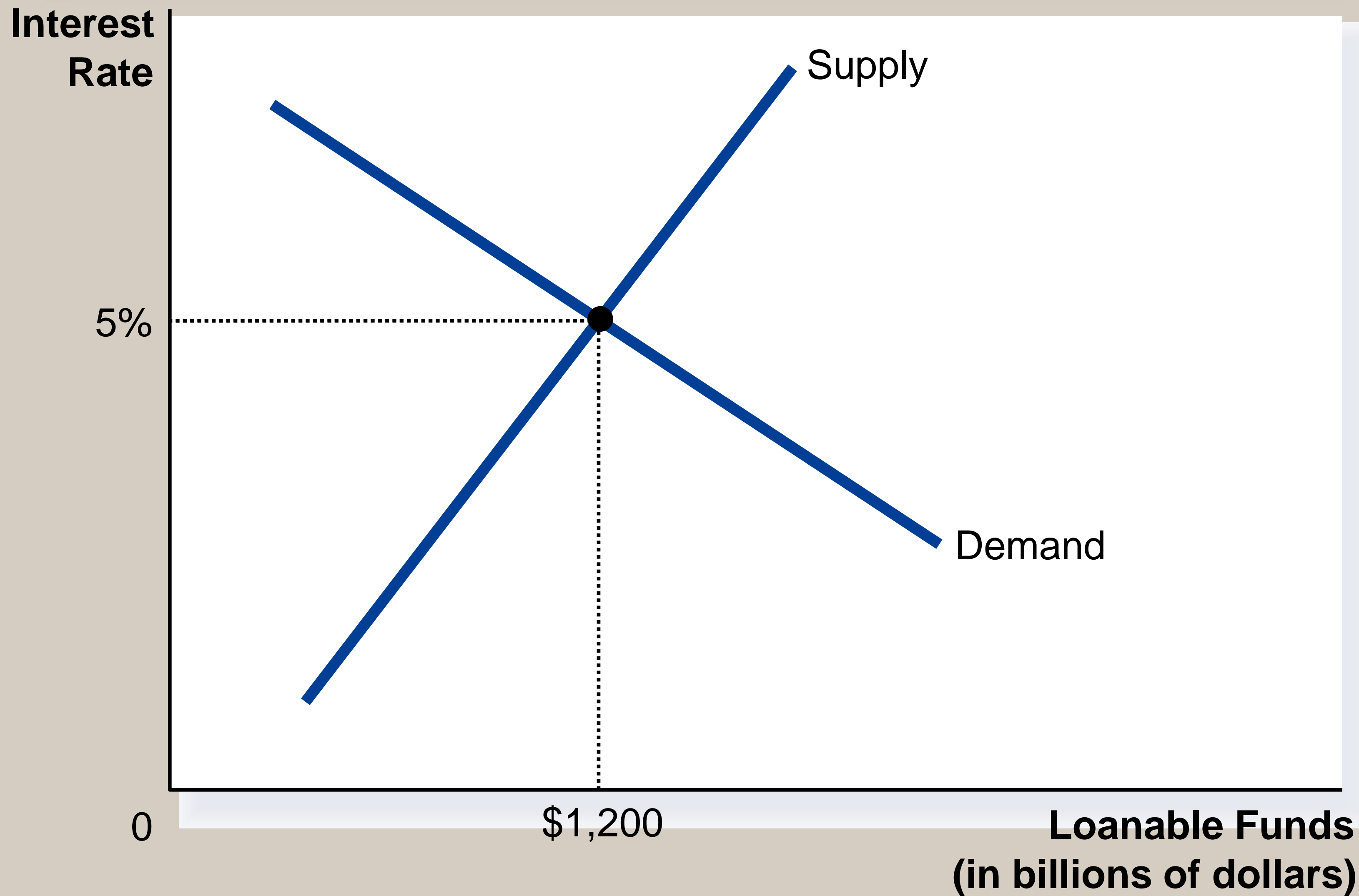
Copyright © 2004 South-Western

Supply and Demand for Loanable Funds

- Financial markets work much like other markets in the economy.
  - The equilibrium of the supply and demand for loanable funds determines the *real interest rate*.
  - The interest rate represents the amount that borrowers pay for loans and the amount that lenders receive on their saving.

Copyright © 2004 South-Western

Figure 1 The Market for Loanable Funds



Copyright©2004 South-Western

Supply and Demand for Loanable Funds

- Government Policies That Affect Saving and Investment
  - Taxes and saving
  - Taxes and investment
  - Government budget deficits

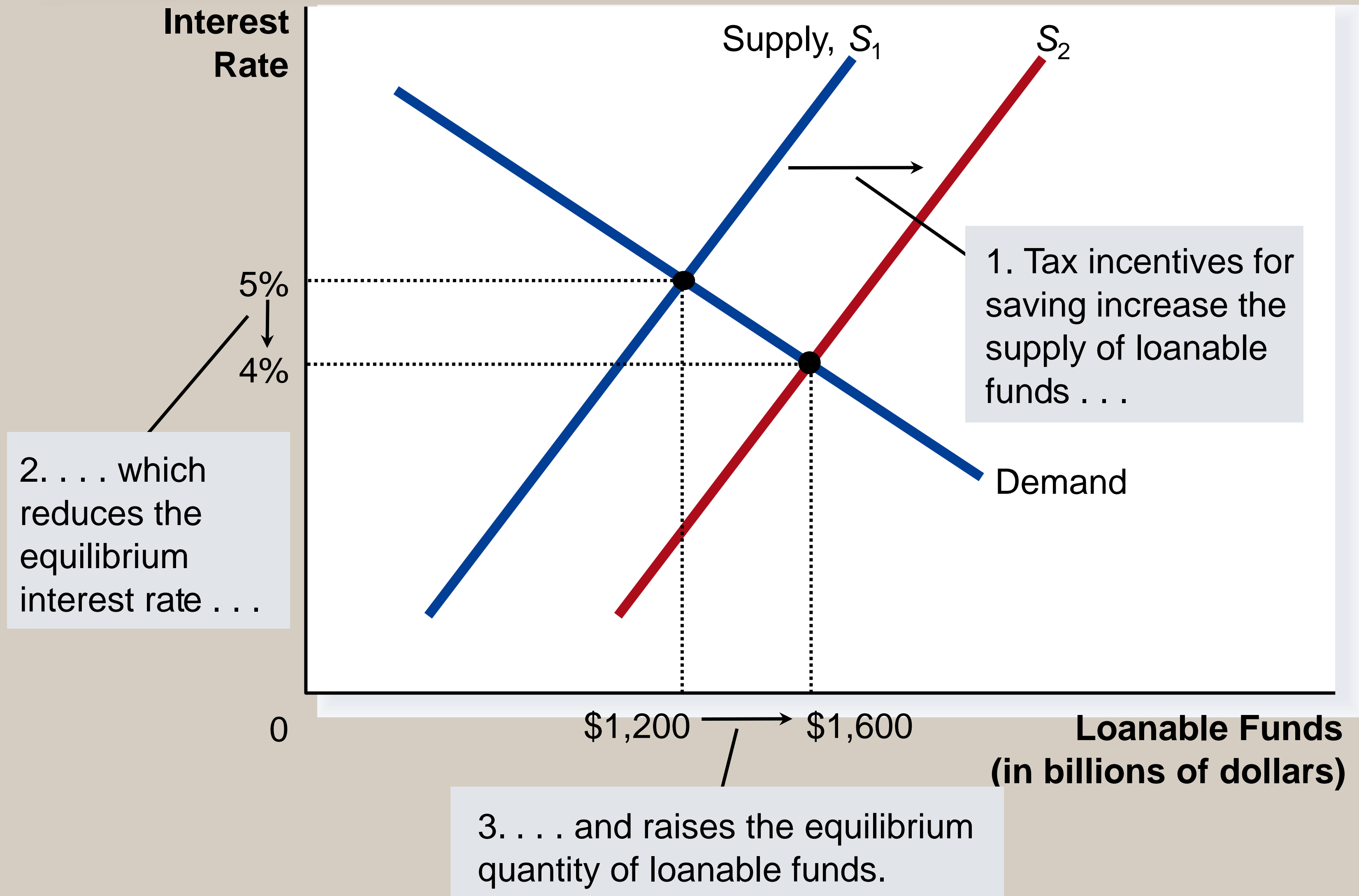
Copyright © 2004 South-Western

Policy 1: Saving Incentives

- Taxes on interest income substantially reduce the future payoff from current saving and, as a result, reduce the incentive to save.

Copyright © 2004 South-Western

Figure 2 An Increase in the Supply of Loanable Funds



Copyright©2004 South-Western

Policy 1: Saving Incentives

- If a change in tax law encourages greater saving, the result will be *lower* interest rates and *greater* investment.

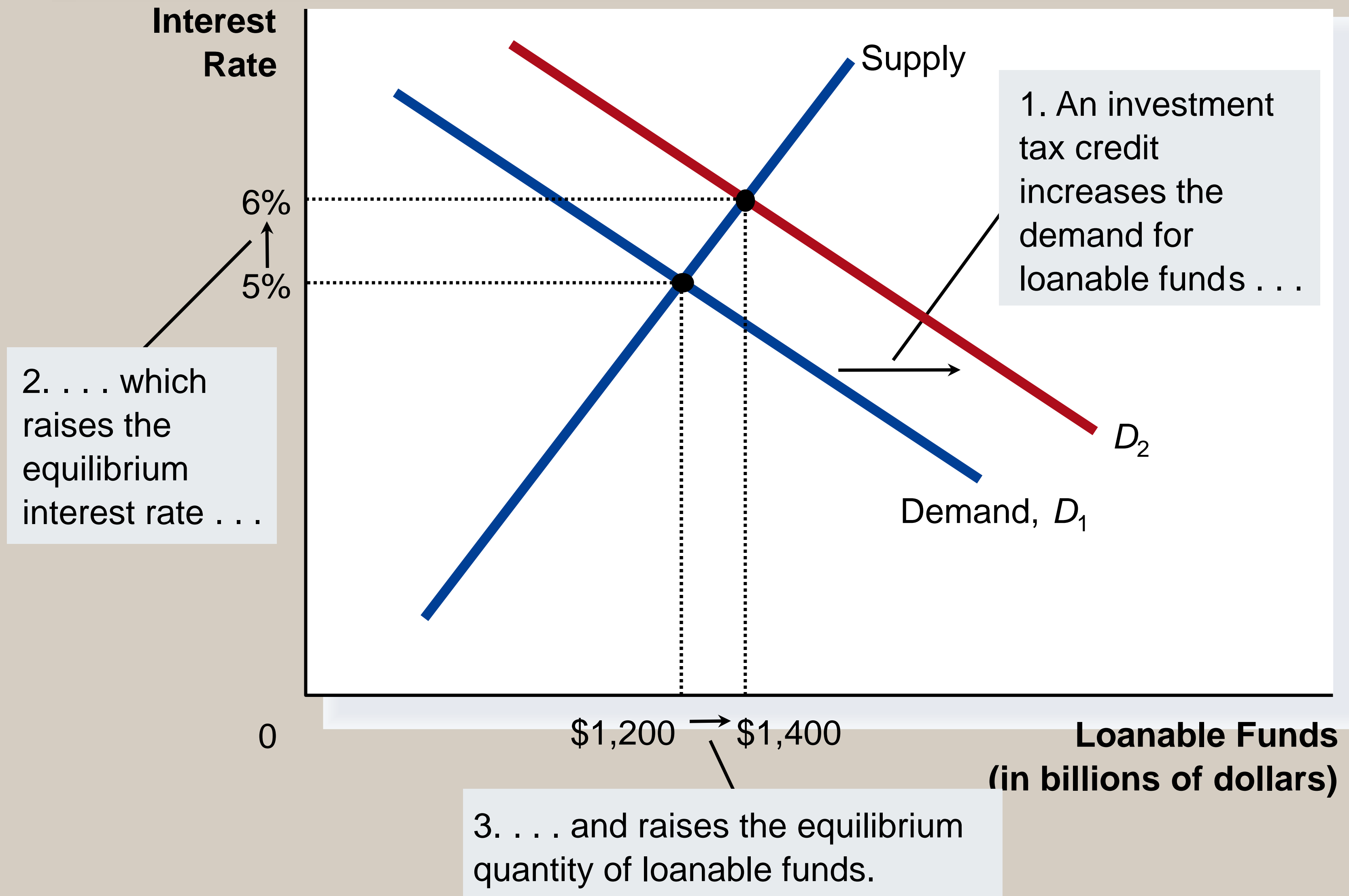
Copyright © 2004 South-Western

Policy 2: Investment Incentives

- Suppose a tax reform aimed at making investment more attractive
- E.g. *investment tax credit* – gives a tax advantage to any firm building a new factory or buying a new piece of equipment

Copyright © 2004 South-Western

Figure 3 An Increase in the Demand for Loanable Funds



Copyright©2004 South-Western

Policy 2: Investment Incentives

- If a change in tax laws encourages greater investment, the result will be *higher* interest rates and *greater* saving.

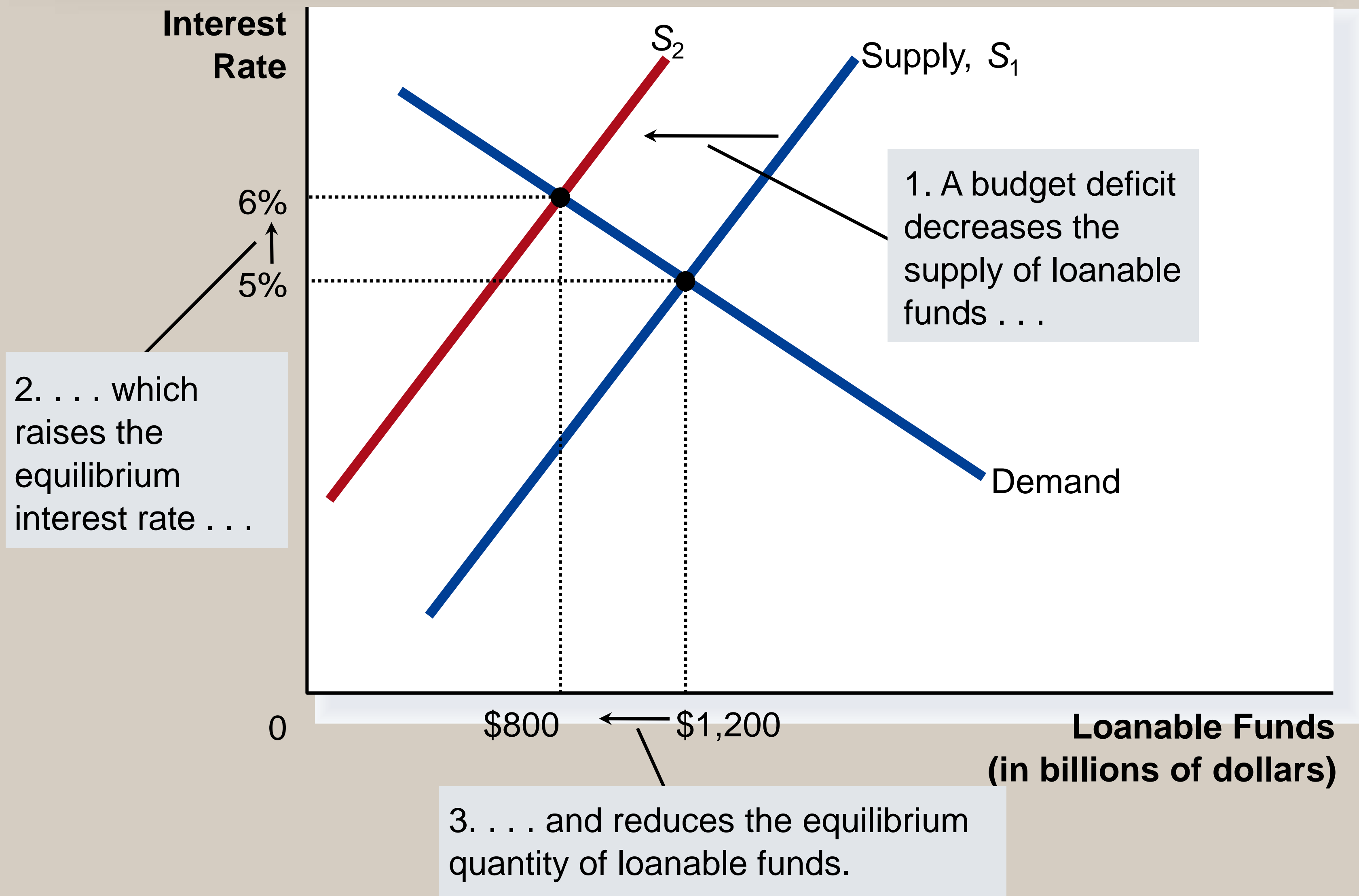
Copyright © 2004 South-Western

Policy 3: Government Budget Deficits and Surpluses

- When the government spends more than it receives in tax revenues, the short fall is called the *budget deficit*.
- The accumulation of past budget deficits is called the government *debt*.

Copyright © 2004 South-Western

Figure 4: The Effect of a Government Budget Deficit



Copyright©2004 South-Western

Policy 3: Government Budget Deficits and Surpluses

- When government reduces national saving by running a deficit, the interest rate *rises* and investment *falls*.
- This fall in investment is referred to as *crowding out*.
  - The deficit borrowing crowds out private borrowers who are trying to finance investments.
- A budget surplus *increases* the supply of loanable funds, *reduces* the interest rate, and *stimulates* investment.

Copyright © 2004 South-Western

Figure 5 The U.S. Government Debt

Copyright©2004 South-Western

Summary

- The financial system is made up of many types of financial institutions – 2 categories
  - Financial markets – the stock, bond market
  - Financial intermediaries – banks, 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.

Copyright © 2004 South-Western

Summary

- National income accounting identities reveal some important relationships among macroeconomic variables.
- In particular, in a closed economy, national saving must equal investment.
- National saving equals private saving plus public saving.

Copyright © 2004 South-Western

Summary

- 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.
- The demand for loanable funds comes from households and firms who want to borrow for investment.

Copyright © 2004 South-Western

Summary

- A government budget deficit represents negative public saving and, therefore, reduces national saving and the supply of loanable funds.
- When a government budget deficit crowds out investment, it reduces the growth of productivity and GDP.

Copyright © 2004 South-Western