N. GREGORY MANKIW

PRINCIPLES OF

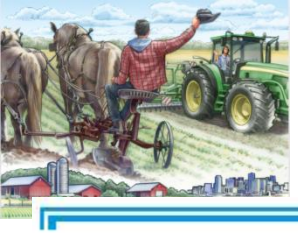
ECONOMICS

Eight Edition

CHAPTER 26

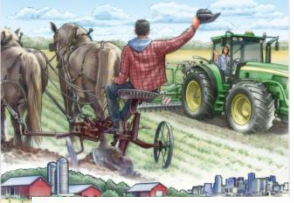
Saving, Investment, and the Financial System

PowerPoint Slides prepared by:
V. Andreea CHIRITESCU
Eastern Illinois University



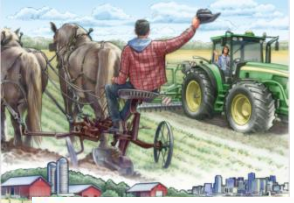
Financial Institutions

- Financial system
  - Group of institutions in the economy
    - That help match one person's saving with another person's investment
  - Moves the economy's scarce resources from savers to borrowers
- Financial institutions
  - Financial markets
  - Financial intermediaries



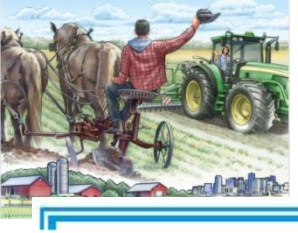
Financial Markets, Part 1

- Financial markets
  - Savers can directly provide funds to borrowers
  - The bond market
  - The stock market



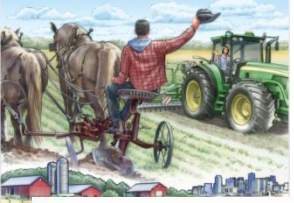
Financial Markets, Part 2

- The bond market
  - Bond: certificate of indebtedness
    - Date of maturity, when the loan will be repaid
    - Rate of interest, paid periodically until the date of maturity
    - Principal, amount borrowed
  - Borrowing from the public
    - Used by large corporations, the federal government, or state and local governments



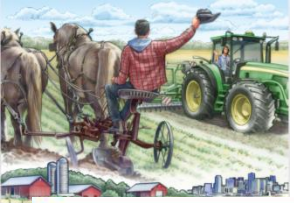
Financial Markets, Part 3

- Bonds differ according to characteristics:
  1. Term: length of time until maturity
     - A few months, 30 years, perpetuity
     - Long-term bonds are riskier than short-term bonds
     - Long-term bonds usually pay higher interest rates



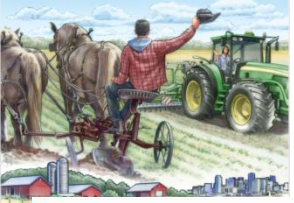
Financial Markets, Part 4

- Bonds differ according to characteristics
  2. Credit risk: probability of default
     - Probability that the borrower will fail to pay some of the interest or principal
     - Higher interest rates for higher probability of default
     - U.S. government bonds tend to pay low interest rates
     - Junk bonds, very high interest rates: issued by financially shaky corporations



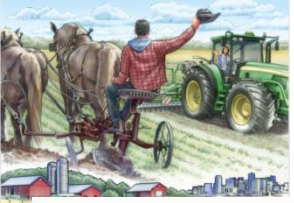
Financial Markets, Part 5

- Bonds differ according to characteristics
  3. Tax treatment: interest on most bonds is taxable income
- Municipal bonds
  - Issued by state and local governments
  - Owners are not required to pay federal income tax on the interest income
  - Lower interest rate



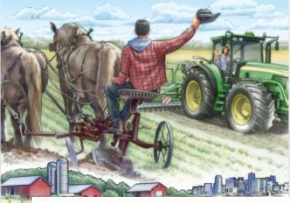
Financial Markets, Part 6

- The stock market
  - Stock: claim to partial ownership in a firm
    - A claim to the profits that a firm makes
  - Organized stock exchanges
    - Stock prices: demand and supply
  - Equity finance
    - Sale of stock to raise money
  - Stock index
    - Average of a group of stock prices



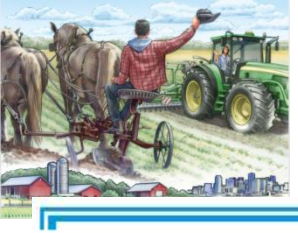
Financial Intermediaries, Part 1

- Financial intermediaries
  - Savers can indirectly provide funds to borrowers
  - Banks
  - Mutual funds



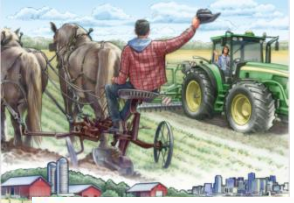
Financial Intermediaries, Part 2

- Banks
  - Take in deposits from savers
    - Banks pay interest
  - Make loans to borrowers
    - Banks charge interest
  - Facilitate purchasing of goods and services
    - Checks: medium of exchange



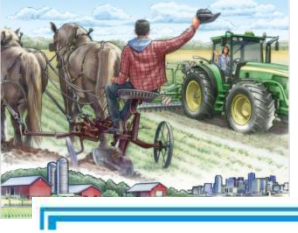
Financial Intermediaries, Part 3

- Mutual funds
  - Institution that sells shares to the public
  - Uses the proceeds to buy a portfolio of stocks and bonds
  - Advantages: diversification; professional money managers



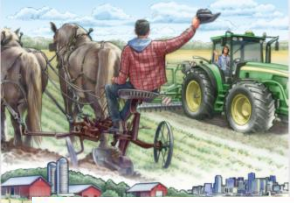
National Income Accounts

- Rules of national income accounting
  - Important identities
- Identity
  - An equation that must be true because of the way the variables in the equation are defined
  - Clarify how different variables are related to one another



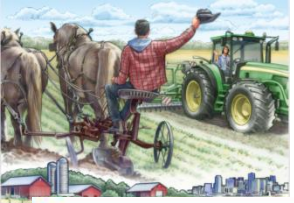
Accounting Identities, Part 1

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



Accounting Identities, Part 2

- Closed economy
  - Doesn't interact with other economies
  - NX = 0
- Open economy
  - Interacts with other economies
  - NX ≠ 0



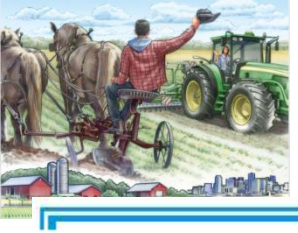
Accounting Identities, Part 3

- Assume closed economy: NX = 0
  - $Y = C + I + G$
- National saving (saving), S
  - Total income in the economy that remains after paying for consumption and government purchases

$$Y - C - G = I$$

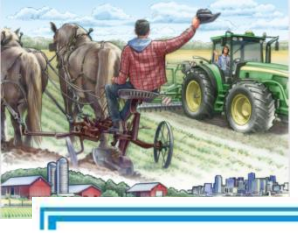
$$S = Y - C - G$$

$$S = I$$



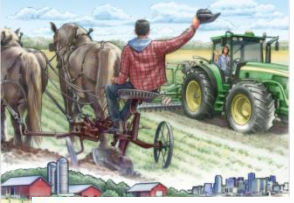
Accounting Identities, Part 4

- T = taxes minus transfer payments
  - S = Y – C – G
  - S = (Y – T – C) + (T – G)
- Private saving, Y – T – C
  - Income that households have left after paying for taxes and consumption
- Public saving, T – G
  - Tax revenue that the government has left after paying for its spending



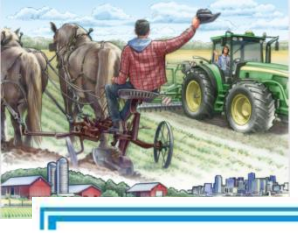
Accounting Identities, Part 5

- Budget surplus: $T - G > 0$
  - Excess of tax revenue over government spending
- Budget deficit: $T - G < 0$
  - Shortfall of tax revenue from government spending



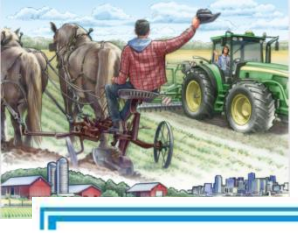
Saving and Investing

- Accounting identity: S = I
- Saving = Investment
  - For the economy as a whole
  - One person's savings can finance another person's investment



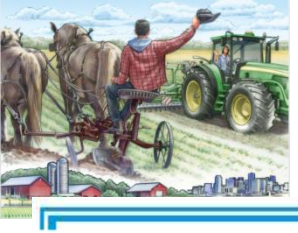
The Market for Loanable Funds, Part 1

- Market for loanable funds
  - Market
    - Those who want to save supply funds
    - Those who want to borrow to invest demand funds
  - One interest rate
    - Return to saving
    - Cost of borrowing
  - Assumption: single financial market



The Market for Loanable Funds, Part 2

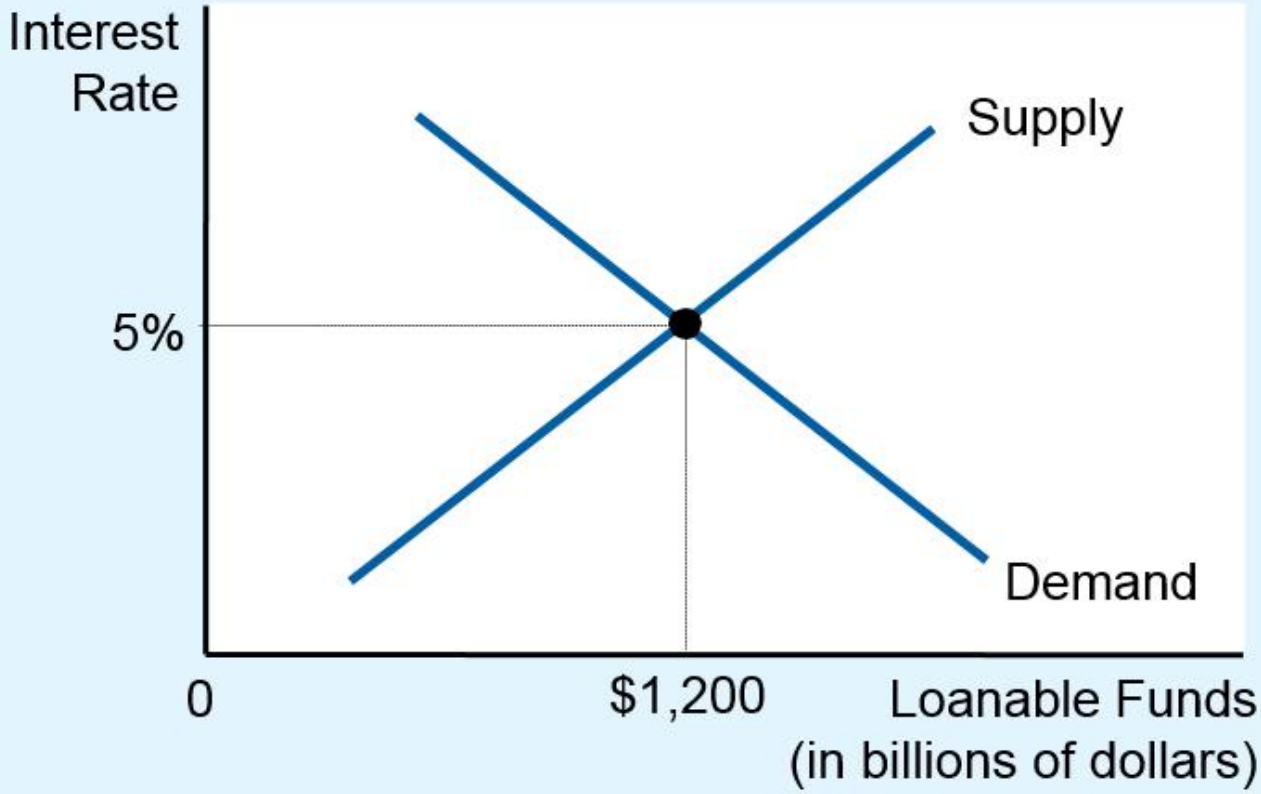
- Supply and demand of loanable funds
  - Source of the supply of loanable funds
    - Saving
  - Source of the demand for loanable funds
    - Investment
  - Price of a loan = real interest rate
    - Borrowers pay for a loan
    - Lenders receive on their saving



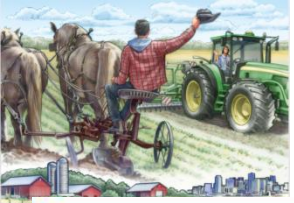
The Market for Loanable Funds, Part 3

- Supply and demand of loanable funds
  - As interest rate rises
    - Quantity demanded declines
    - Quantity supplied increases
  - Demand curve
    - Slopes downward
  - Supply curve
    - Slopes upward

Figure 1 The Market for Loanable Funds

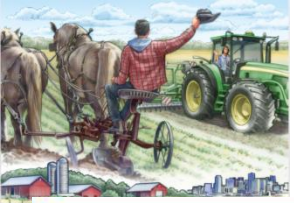


The interest rate in the economy adjusts to balance the supply and demand for loanable funds. The supply of loanable funds comes from national saving, including both private saving and public saving. The demand for loanable funds comes from firms and households that want to borrow for purposes of investment.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



The Market for Loanable Funds, Part 4

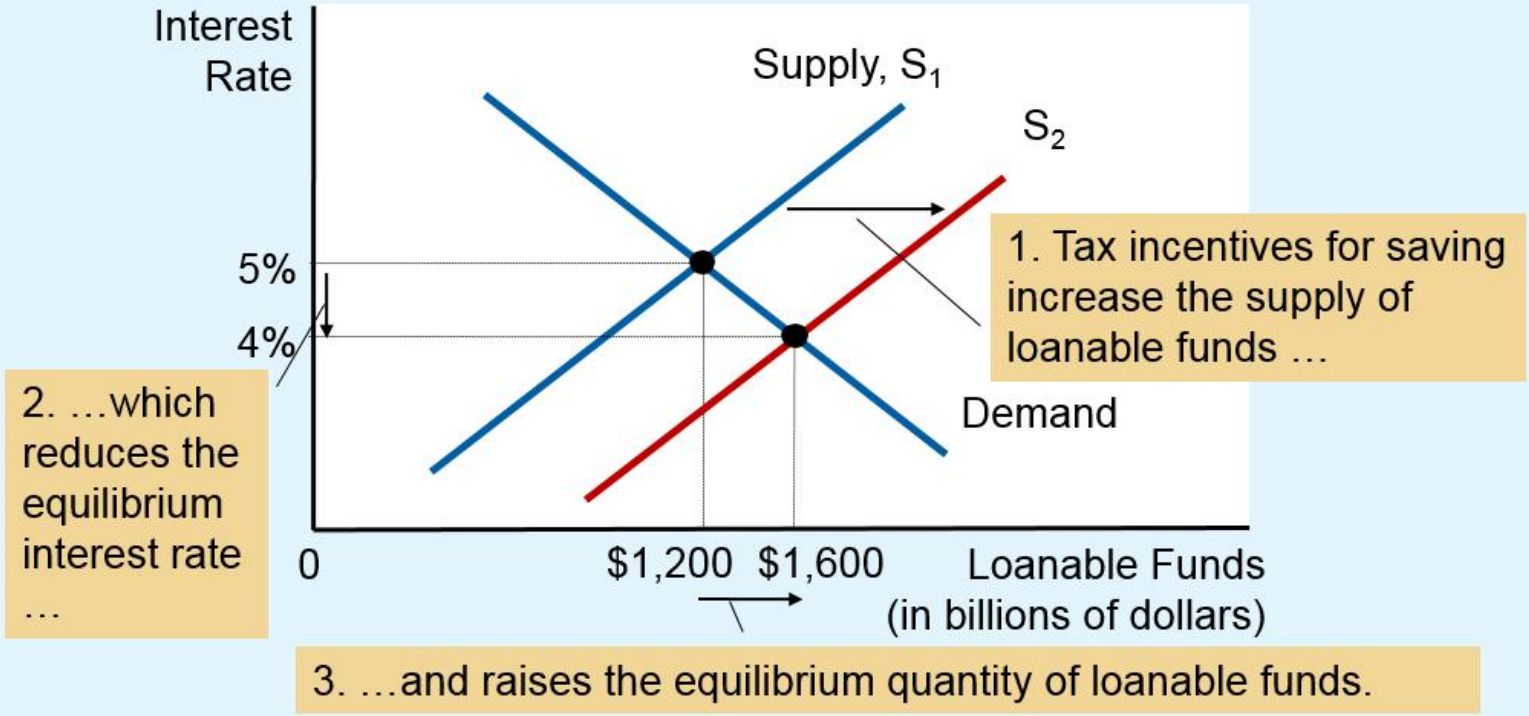
- Government policies
  - Can affect the economy's saving and investment
    - Saving incentives
    - Investment incentives
    - Government budget deficits and surpluses



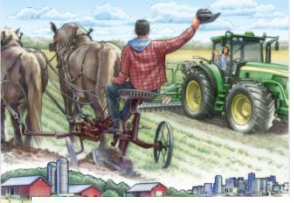
Policy 1: Saving Incentives

- Shelter some saving from taxation
  - Affect supply of loanable funds
  - Increase in supply
    - Supply curve shifts right
  - New equilibrium
    - Lower interest rate
    - Higher quantity of loanable funds
  - Greater investment

Figure 2 Saving Incentives Increase the Supply of Loanable Funds



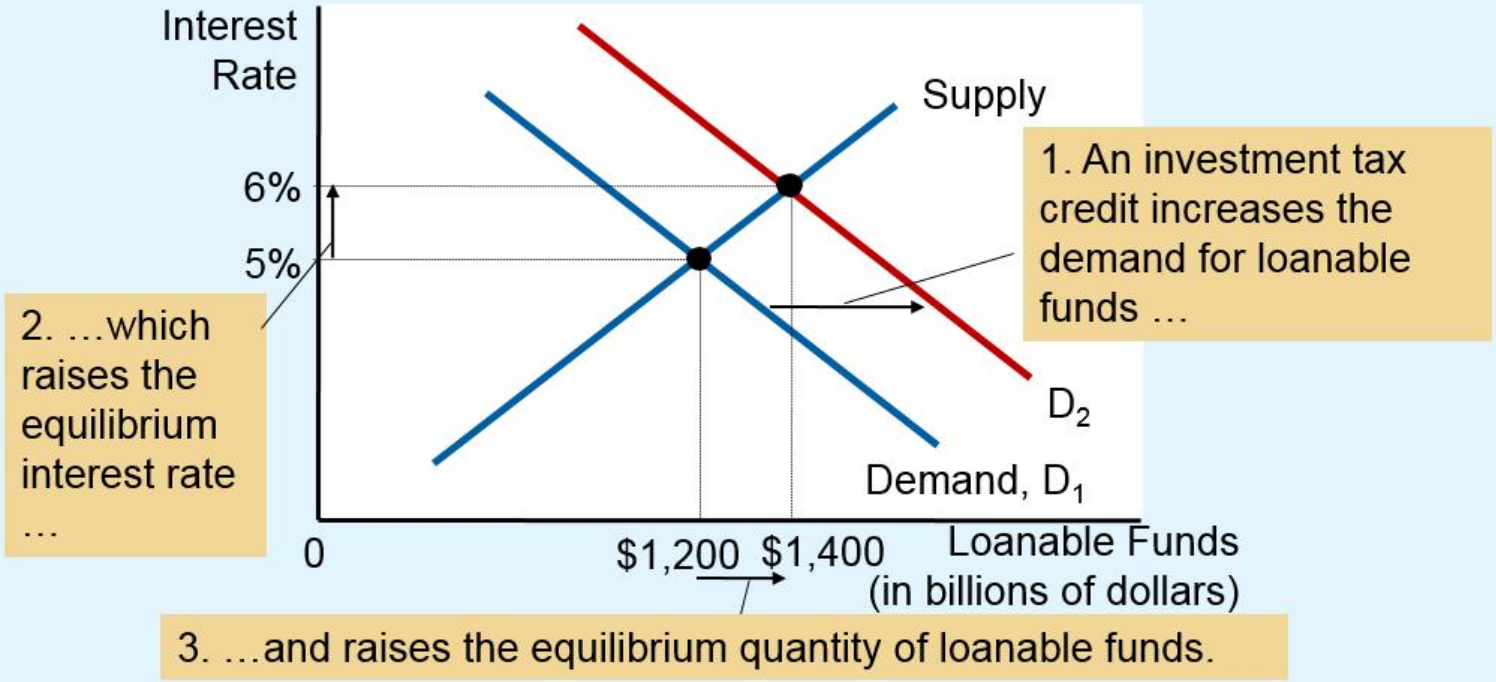
A change in the tax laws to encourage Americans to save more would shift the supply of loanable funds to the right from S_1 to S_2. As a result, the equilibrium interest rate would fall, and the lower interest rate would stimulate investment. Here the equilibrium interest rate falls from 5 percent to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



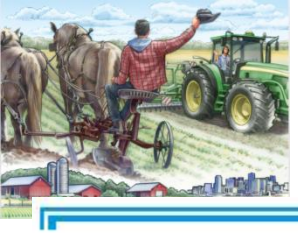
Policy 2: Investment Incentives

- Investment tax credit
  - Affect demand for loanable funds
  - Increase in demand
    - Demand curve shifts right
  - New equilibrium
    - Higher interest rate
    - Higher quantity of loanable funds
    - Greater saving

Figure 3 Investment Incentives Increase the Demand for Loanable Funds



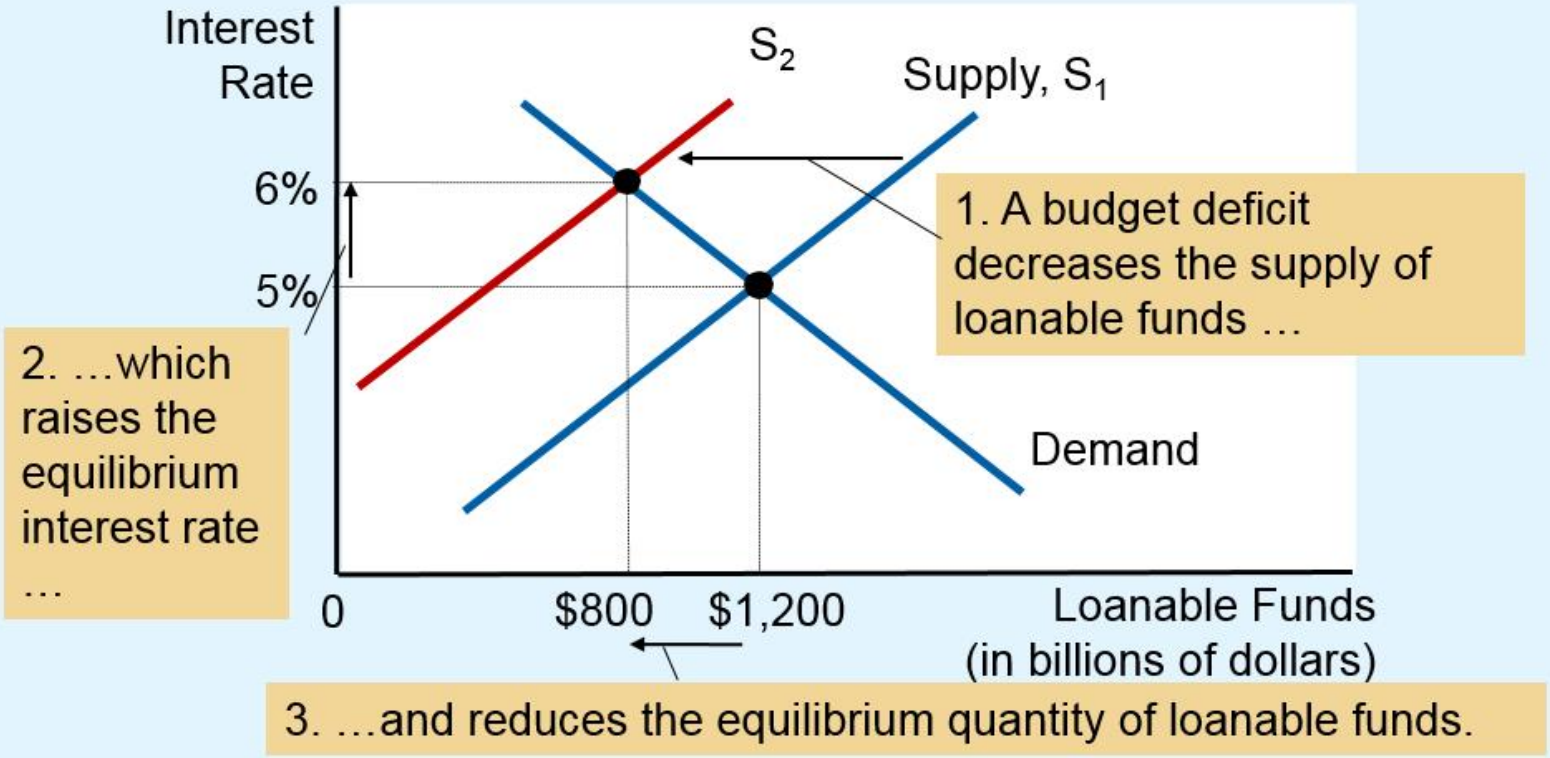
If the passage of an investment tax credit encouraged firms to invest more, the demand for loanable funds would increase. As a result, the equilibrium interest rate would rise, and the higher interest rate would stimulate saving. Here, when the demand curve shifts from D_1 to D_2, the equilibrium interest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



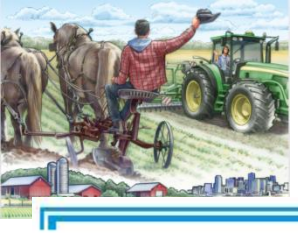
Policy 3: Budget Deficit/Surplus, Part 1

- Government – starts with balanced budget
  - Then starts running a budget deficit
    - Change in supply of loanable funds
    - Decrease in supply
      - Supply curve shifts left
    - New equilibrium
      - Higher interest rate
      - Smaller quantity of loanable funds

Figure 4 The Effect of a Government Budget Deficit

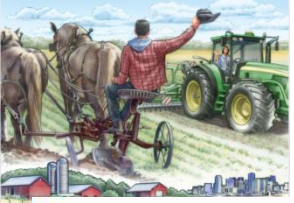


When the government spends more than it receives in tax revenue, the resulting budget deficit lowers national saving. The supply of loanable funds decreases, and the equilibrium interest rate rises. Thus, when the government borrows to finance its budget deficit, it crowds out households and firms that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



Policy 3: Budget Deficit/Surplus, Part 2

- Crowding out
  - Decrease in investment
  - Results from government borrowing
- Government – budget deficit
  - Interest rate rises
  - Investment falls

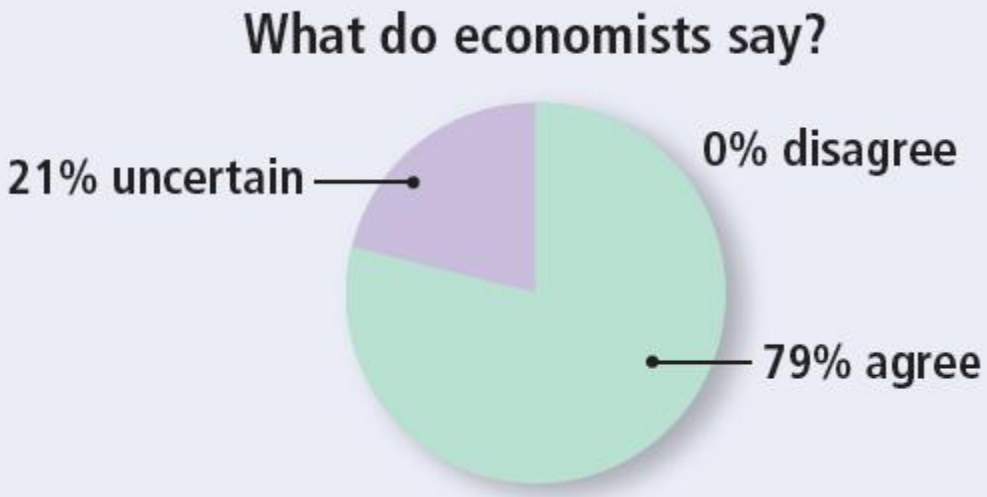


Policy 3: Budget Deficit/Surplus, Part 3

- Government – budget surplus
  - Increase supply of loanable funds
  - Reduce interest rate
  - Stimulates investment

Fiscal Policy and Saving

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



CASE STUDY

The history of U.S. government debt, Part 1

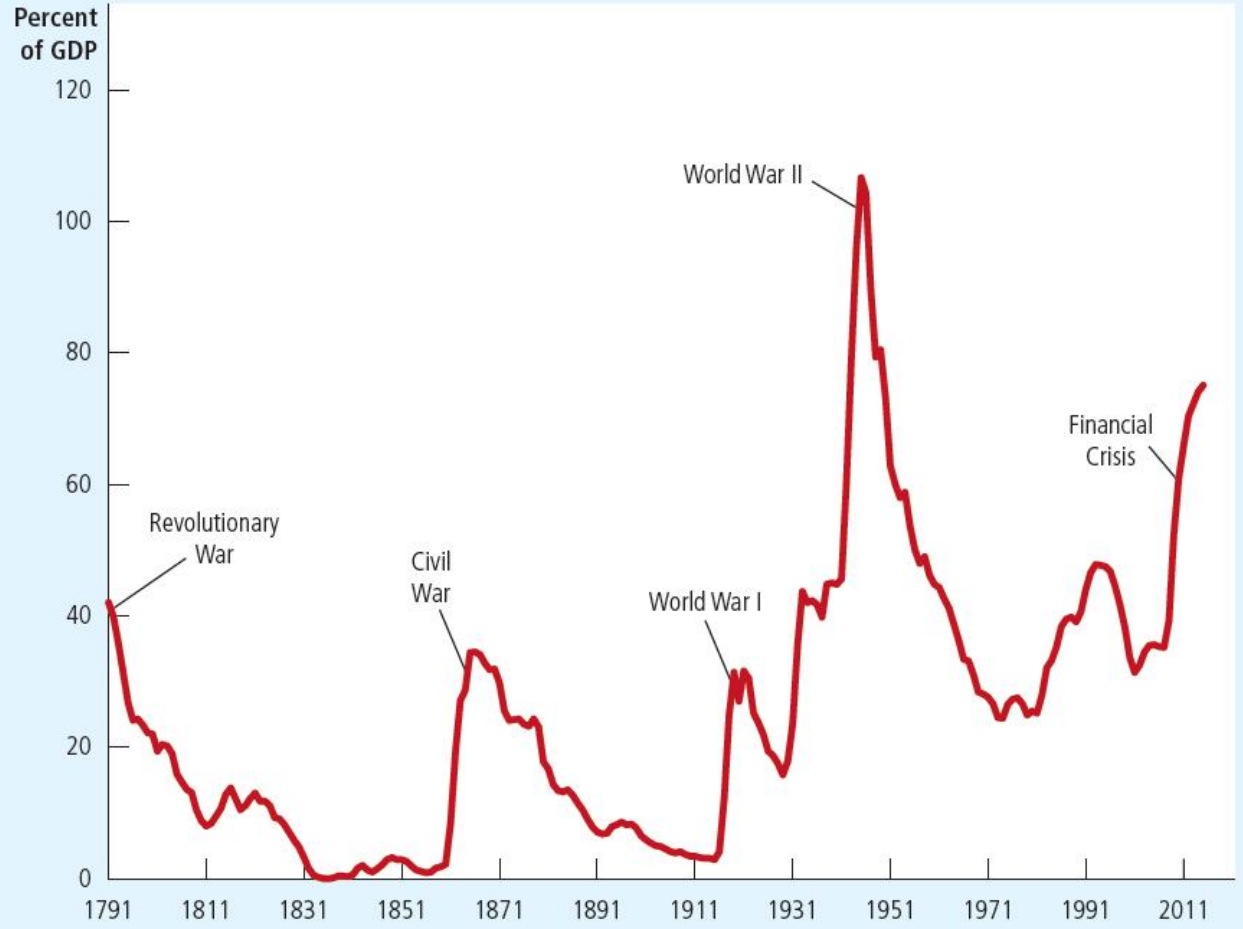
- Debt of U.S. federal government
  - As a percentage of U.S. GDP
  - Fluctuated
    - 0% of GDP in 1836
    - 107% of GDP in 1945
- Declining debt-to-GDP ratio
  - Government indebtedness is shrinking relative to its ability to raise tax revenue
  - Government – living within its means

CASE STUDY

The history of U.S. government debt, Part 2

- Rising debt-to-GDP
  - Government indebtedness is increasing relative to its ability to raise tax revenue
    - Fiscal policy cannot be sustained forever at current levels
- War – primary cause of fluctuations in government debt:
  - Debt financing of war – appropriate policy
    - Tax rates – smooth over time
    - Shifts part of the cost to future generations

Figure 5 The U.S. Government Debt



The debt of the U.S. federal government, expressed here as a percentage of GDP, has varied throughout history. Wartime spending is typically associated with substantial increases in government debt.

CASE STUDY

The history of U.S. government debt, Part 3

- President Ronald Reagan, 1981
  - Large increase in government debt – not explained by war
  - Committed to smaller government and lower taxes
  - Cutting government spending – more difficult politically than cutting taxes
  - Period of large budget deficits
  - Government debt: 26% of GDP in 1980 to 50% of GDP in 1993

CASE STUDY

The history of U.S. government debt, Part 4

- President Bill Clinton, 1993
  - Major goal – deficit reduction
  - And Republicans took control of Congress in 1995: deficit reduction
  - Substantially reduced the size of the government budget deficit
  - Booming economy in the late 1990s brought in even more tax revenue
  - Eventually: surplus (federal budget)
  - By the late 1990s: debt-to-GDP ratio – declining for several years

CASE STUDY

The history of U.S. government debt, Part 5

- President George W. Bush
  - Debt-to-GDP ratio started rising again
  - Budget deficit
    - Several major tax cuts
    - 2001 recession – decreased tax revenue and increased government spending
    - Increased government spending on homeland security
      - Following the September 11, 2001 attacks
      - Subsequent wars in Iraq and Afghanistan

CASE STUDY

The history of U.S. government debt, Part 6

- 2008, financial crisis and deep recession
  - Dramatic increase in the debt-to-GDP ratio
  - Increased budget deficit
  - Several policy measures passed by the Bush and Obama administrations
    - Aimed at combating the recession
    - Reduced tax revenue
    - Increased government spending

CASE STUDY

The history of U.S. government debt, Part 7

- From 2009 to 2012
  - The federal government's budget deficit averaged about 9% of GDP
    - Levels not seen since World War II
  - The borrowing to finance these deficits
    - Led to the substantial increase in the debt-to-GDP ratio (from 39% in 2008 to 70% in 2012)
- After 2012, as the economy recovered
  - Budget deficits shrank, and the increases in the debt-to-GDP ratio became smaller