MACROECONOMICS I

Savings, Investment, and Financial System

Lecture 4

March 04, 2022

LOOK FOR THE ANSWERS TO THESE QUESTIONS:

- What are the main types of financial institutions in the U.S. economy, and what is their function?
- What are the three kinds of saving?
- What's the difference between saving and investment?
- How does the financial system coordinate saving and investment?
- How do government policies affect saving, investment, and the interest rate?

FINANCIAL INSTITUTIONS

Financial system

- Group of institutions in the economy that help match the saving of one person with the investment of another

Financial institutions

- Institutions through which savers can provide funds to borrowers
- Financial markets
- Financial intermediaries

FINANCIAL MARKETS

Savers can directly provide funds to borrowers

- The bond market:
  - A bond is a certificate of indebtedness
- The stock market:
  - A stock is a claim to partial ownership in a firm

FINANCIAL INTERMEDIARIES

Institutions through which savers can indirectly provide funds to borrowers

- Banks
- Mutual funds: institutions that sell shares to the public and use the proceeds to buy portfolios of stocks and bonds

ACCOUNTING IDENTITIES

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

Assume closed economy: NX = 0

$$Y = C + I + G, \text{ so } I = Y - C - G$$

National saving (saving), S

- Total income in the economy that remains after paying for consumption and government purchases
- By definition: $S = Y - C - G$

It follows: Saving (S) = Investment (I) for a closed economy

ACCOUNTING IDENTITIES

- For T = taxes minus transfer payments

S = Y – C – G can be rewritten as:

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

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

Budget surplus: $T - G > 0$

- Excess of tax revenue over government spending = public saving (T-G)

Budget deficit: $T - G < 0$

- Shortfall of tax revenue from government spending = – (public saving) = $G - T$

ACTIVE LEARNING 1 A. CALCULATIONS

Suppose GDP equals $10 trillion, consumption equals $6.5 trillion, the government spends $2 trillion and has a budget deficit of $300 billion.

Find:

- public saving,
- net taxes,
- private saving,
- national saving,
- investment.

ACTIVE LEARNING 1 A. ANSWERS

Given: $Y = 10.0$, $C = 6.5$, $G = 2.0$, $G - T = 0.3$ (all in trillions)

- Public saving = $T - G$ = -0.3
- Net taxes: $T = G - 0.3 = 1.7$
- Private saving = $Y–T–C = 10 - 1.7 - 6.5 = 1.8$
- National saving $S = Y–C–G = 10 - 6.5 - 2 = 1.5$
- Investment = national saving = 1.5

B. HOW A TAX CUT AFFECTS SAVING

Use the numbers from the preceding exercise, but suppose now that the government cuts taxes by $200 billion.

In each of the following two scenarios, determine what happens to public saving, private saving, national saving, and investment.

1. Consumers save the full proceeds of the tax cut.
2. Consumers save 1/4 of the tax cut and spend the other 3/4.

ACTIVE LEARNING 1 B. ANSWERS

In both scenarios, public saving falls by $200 billion, and the budget deficit rises from $300 billion to $500 billion.

1. If consumers save the full $200 billion, national saving is unchanged, so investment is unchanged.
2. If consumers save $50 billion and spend $150 billion, then national saving and investment each fall by $150 billion.

C. DISCUSSION QUESTIONS

The two scenarios from this exercise were:

1. Consumers save the full proceeds of the tax cut.
2. Consumers save 1/4 of the tax cut and spend the other 3/4.

Which of these two scenarios do you think is more realistic?

Why is this question important?

THE MEANING OF SAVING AND INVESTMENT

Private saving

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

THE MEANING OF SAVING AND INVESTMENT

Investment

- Is the purchase of new capital
- Examples of investment:
  - General Motors spends $250 million to build a new factory in Michigan.
  - You buy CZK 200000 worth of computer equipment for your business.
  - Your parents spend €300,000 to have a new house built.

Investment is NOT the purchase of stocks and bonds!

THE MARKET FOR LOANABLE FUNDS

Loanable funds market

- A supply–demand model of the financial system
- Helps us understand:
  - How the financial system coordinates saving & investment.
  - How government policies and other factors affect saving, investment, the interest rate.

THE MARKET FOR LOANABLE FUNDS

Assume: only one financial market

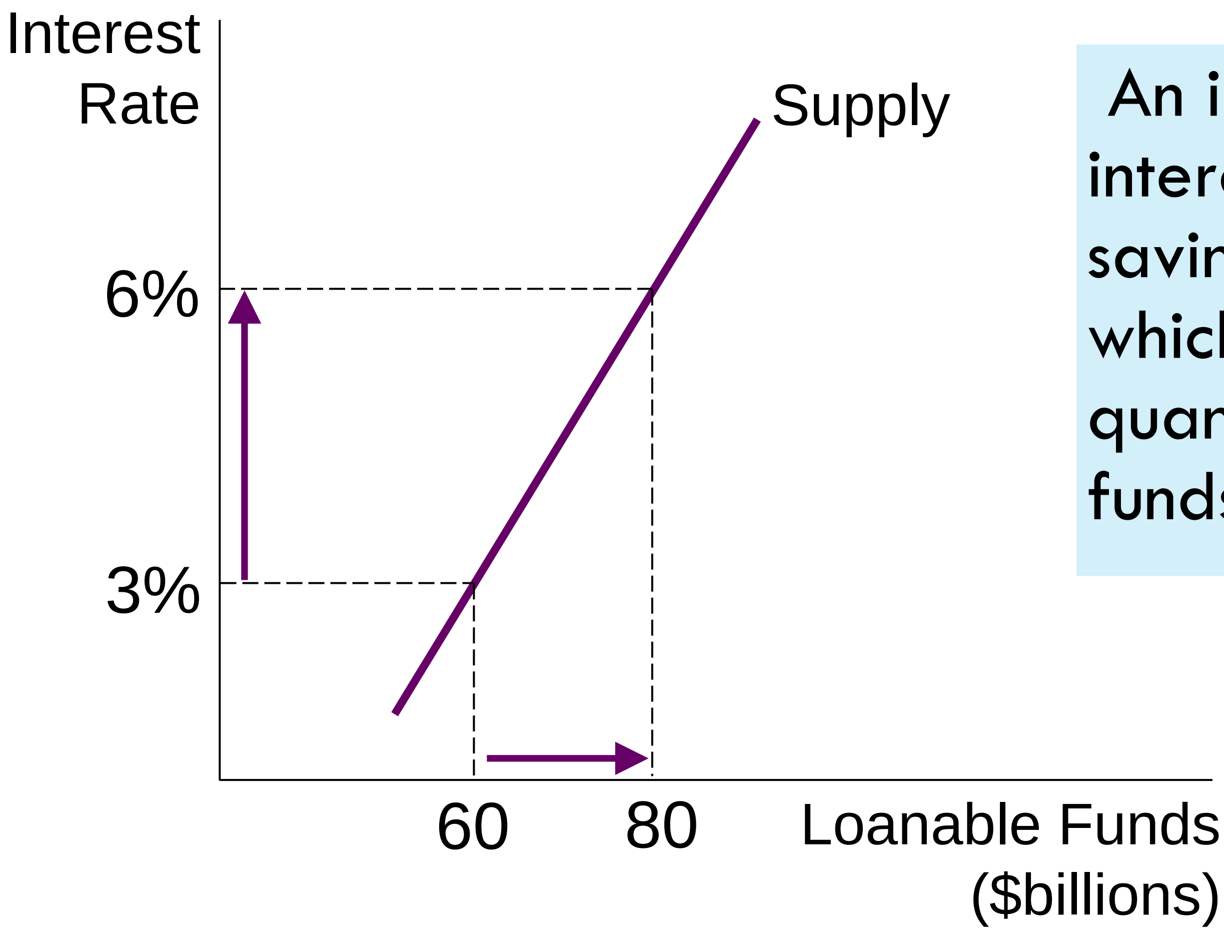
- All savers deposit their saving in this market.
- All borrowers take out loans from this market.
- There is one interest rate, which is both the return to saving and the cost of borrowing.

THE MARKET FOR LOANABLE FUNDS

The supply of loanable funds comes from saving:

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

THE SLOPE OF THE SUPPLY CURVE



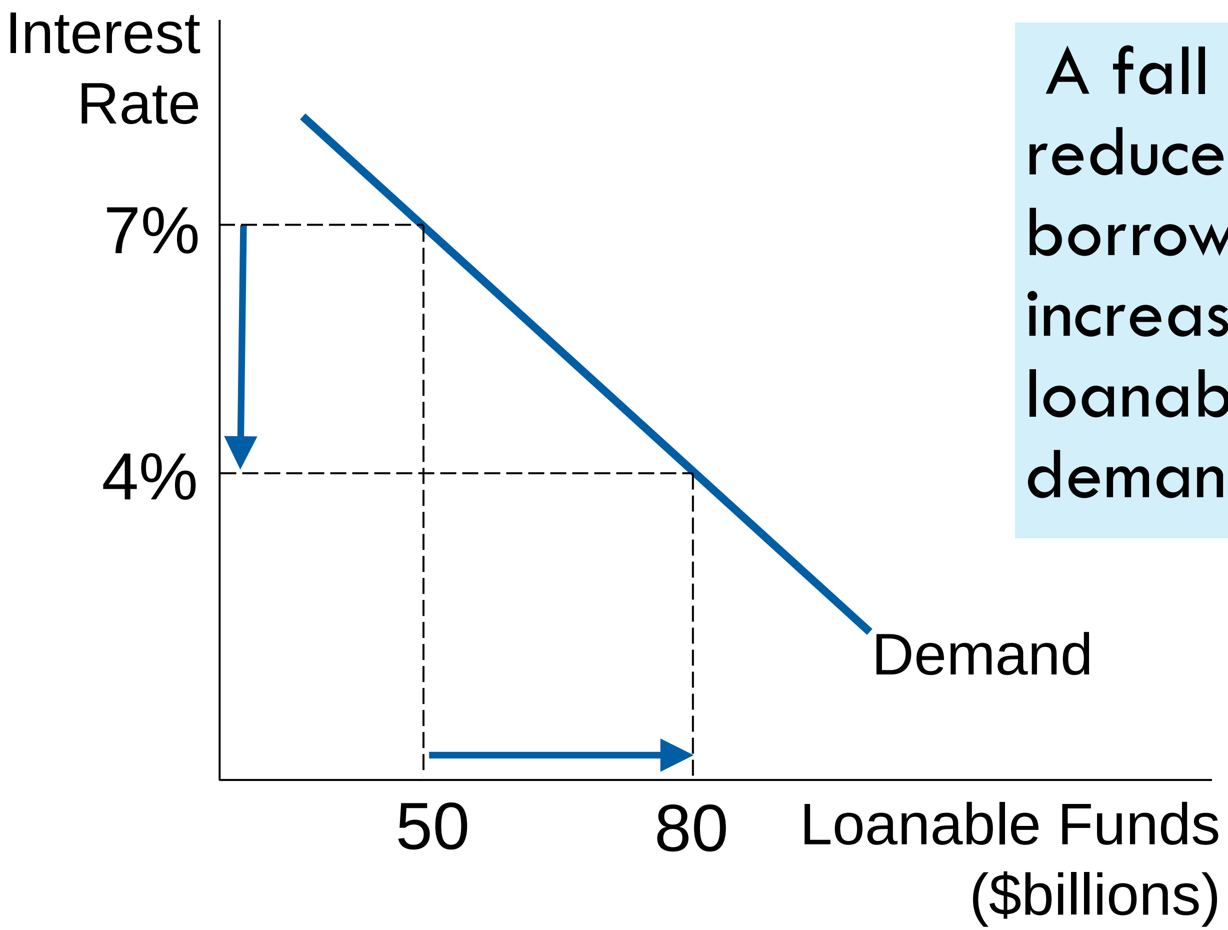
An increase in the interest rate makes saving more attractive, which increases the quantity of loanable funds supplied.

THE MARKET FOR LOANABLE FUNDS

The demand for loanable funds comes from investment:

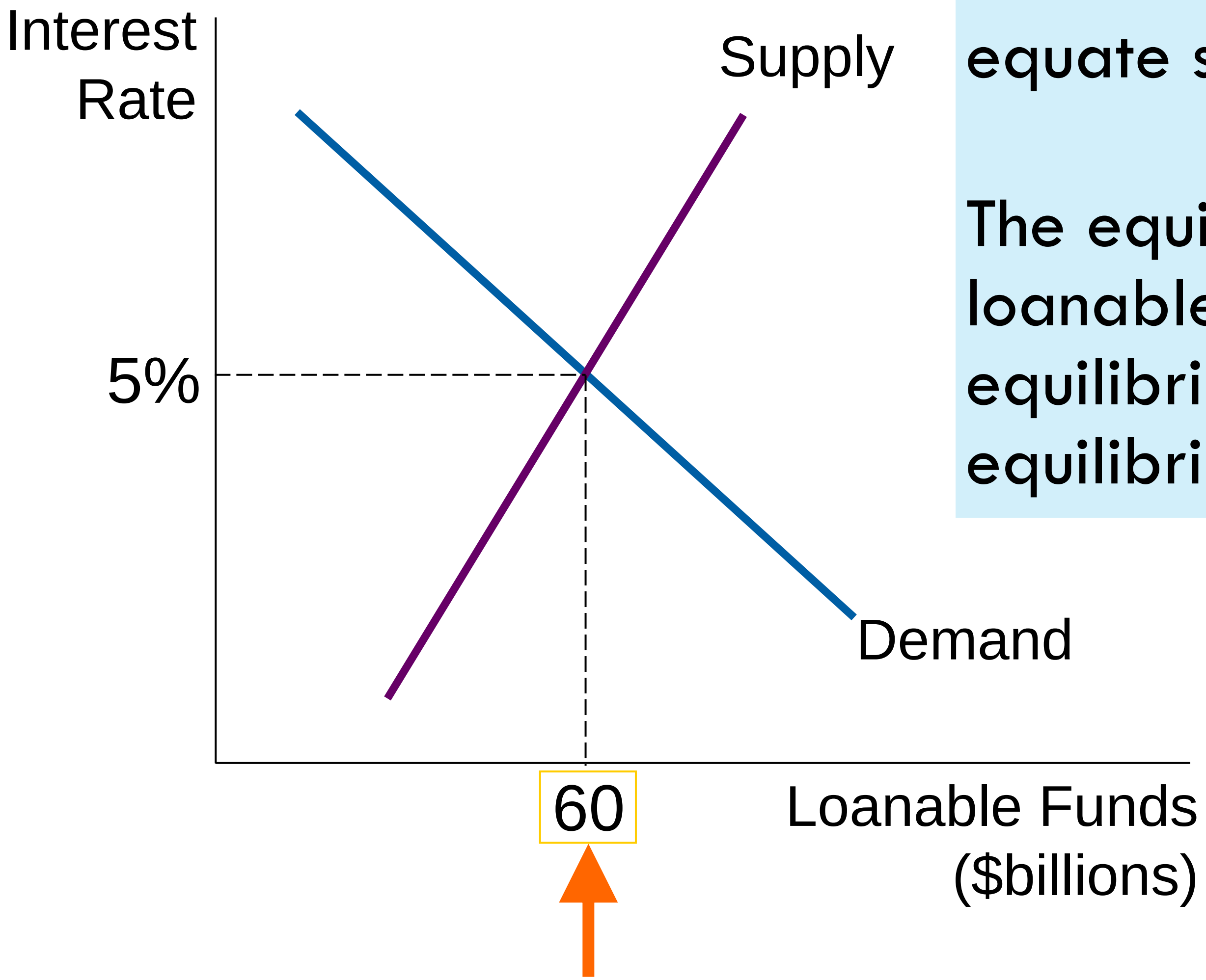
- Firms borrow the funds they need to pay for new equipment, factories, etc.
- Households borrow the funds they need to purchase new houses.

THE SLOPE OF THE DEMAND CURVE



A fall in the interest rate reduces the cost of borrowing, which increases the quantity of loanable funds demanded.

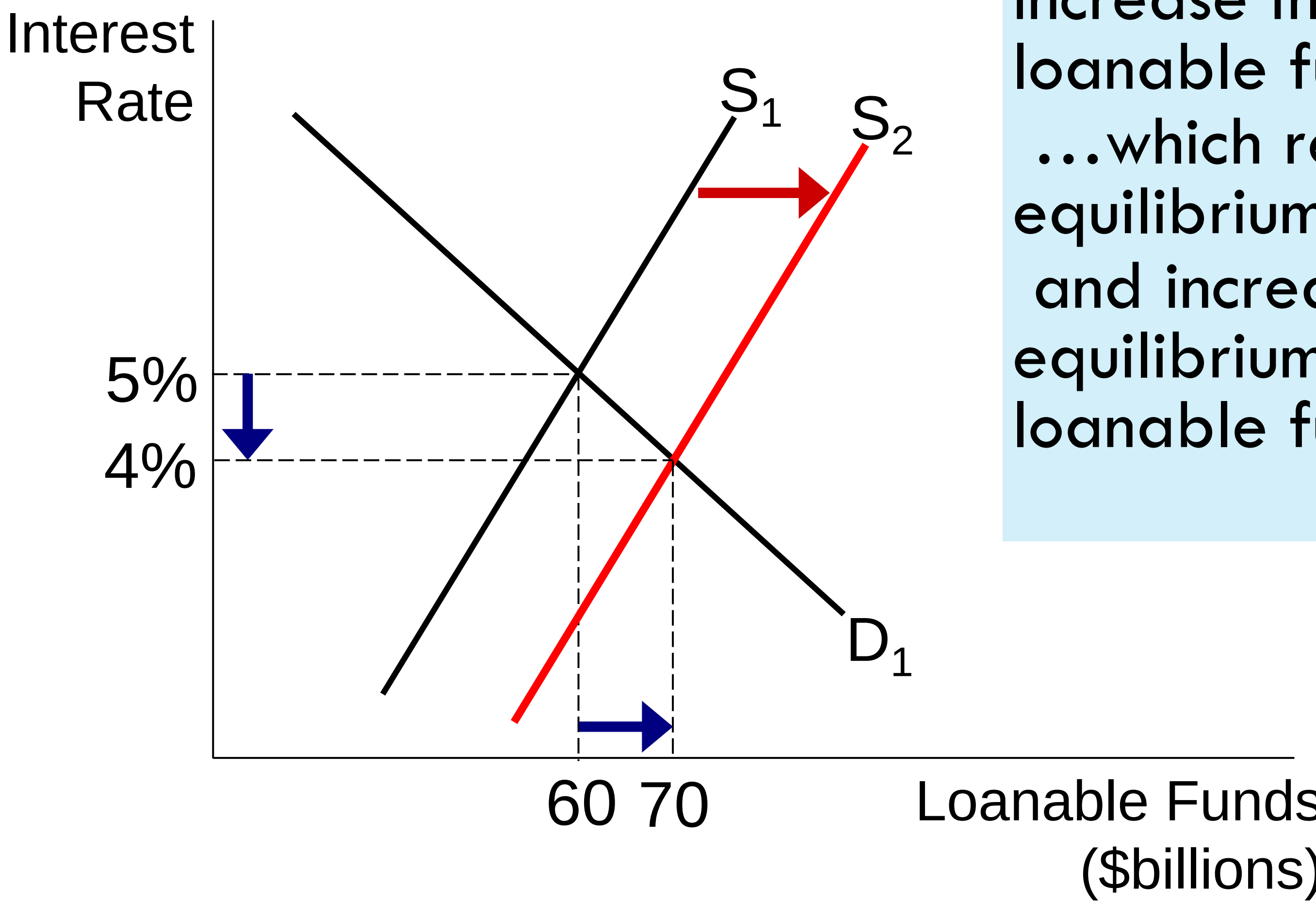
EQUILIBRIUM



The interest rate adjusts to equate supply and demand.

The equilibrium quantity of loanable funds equals equilibrium investment and equilibrium saving.

POLICY 1: SAVING INCENTIVES

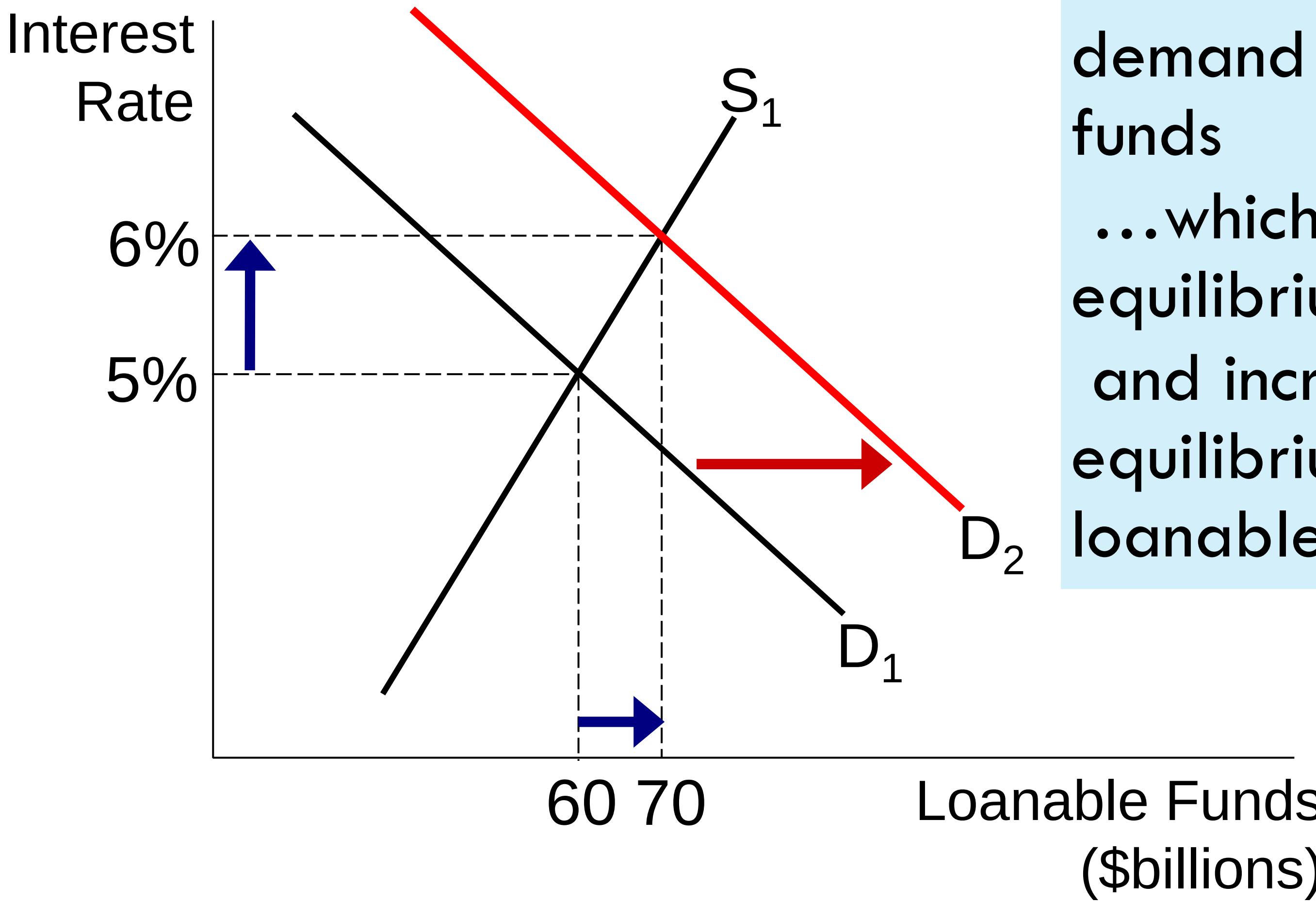


Tax incentives for saving increase the supply of loanable funds

...which reduces the equilibrium interest rate

and increases the equilibrium quantity of loanable funds

POLICY 2: INVESTMENT INCENTIVES



An investment tax credit increases the demand for loanable funds

…which raises the equilibrium interest rate

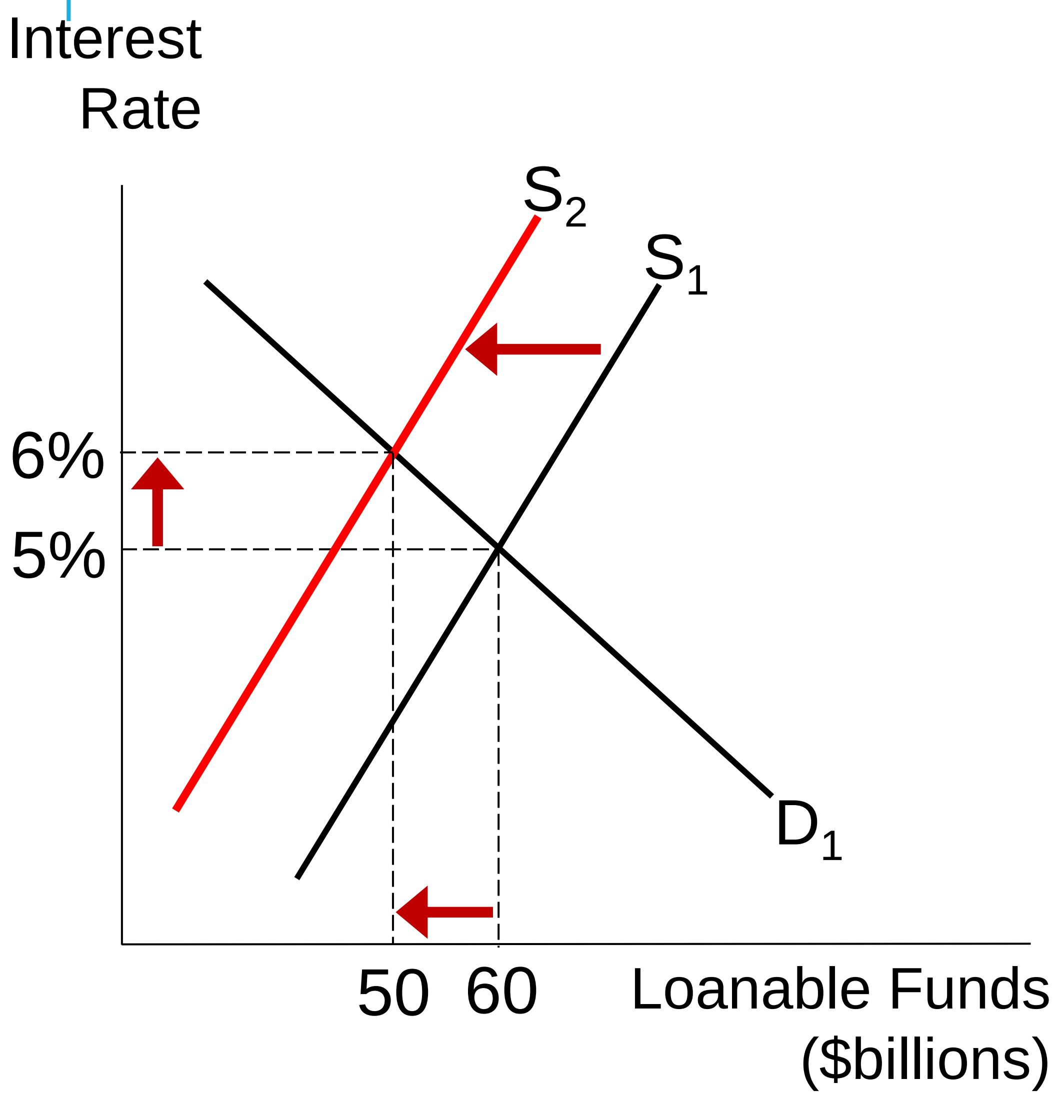
and increases the equilibrium quantity of loanable funds

ACTIVE LEARNING 2 BUDGET DEFICITS

Use the loanable funds model to analyze the effects of a government budget deficit:

- Draw the diagram showing the initial equilibrium.
- Determine which curve shifts when the government runs a budget deficit.
- Draw the new curve on your diagram.
- What happens to the equilibrium values of the interest rate and investment?

ACTIVE LEARNING 2 ANSWERS



A budget deficit reduces national saving and the supply of loanable funds

...which increases the equilibrium interest rate and decreases the equilibrium quantity of loanable funds and investment.

BUDGET DEFICITS, CROWDING OUT, AND LONG-RUN GROWTH

Our analysis:

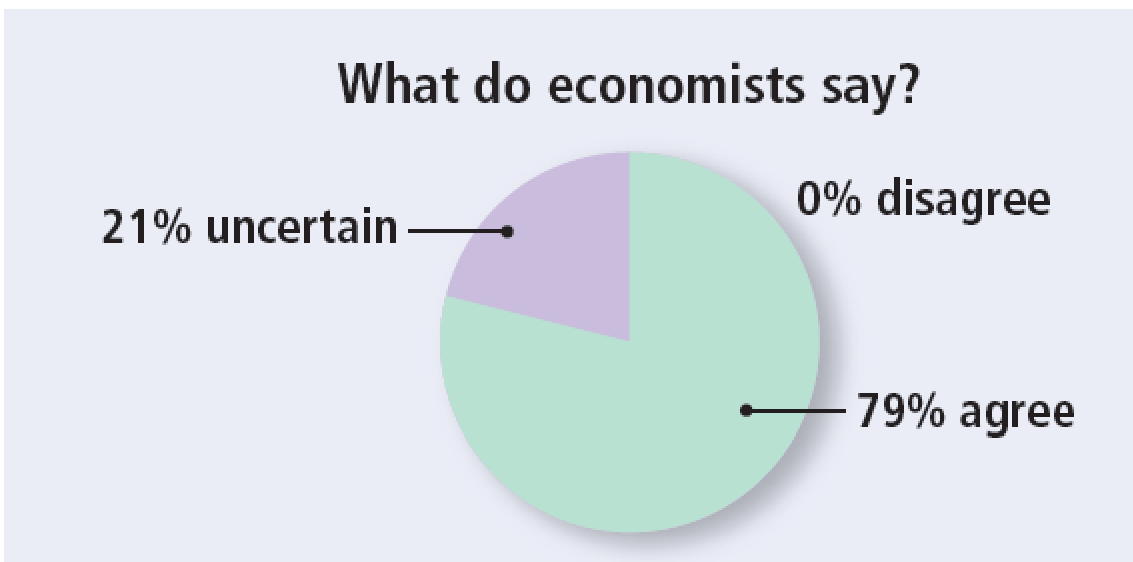
- Increase in budget deficit causes fall in investment
- The government borrows to finance its deficit, leaving less funds available for investment: crowding out

Investment is important for long-run economic growth

ASK THE EXPERTS

Fiscal Policy and Saving

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



THE U.S. GOVERNMENT DEBT

The government finances deficits by borrowing (selling government bonds).

- Persistent deficits lead to a rising government debt.

The ratio of government debt to GDP

- Useful measure of the government's indebtedness relative to its ability to raise tax revenue.
- Historically, the debt-GDP ratio usually rises during wartime and falls during peacetime—until the early 1980s.

U.S. GOVERNMENT DEBT AS A PERCENTAGE OF GDP 1790–2012

CONCLUSION

Financial markets: governed by the forces of supply and demand

- Help allocate the economy's scarce resources to their most efficient uses.
- Link the present to the future
  - Savers: convert current income into future purchasing power
  - Borrowers: acquire capital to produce goods and services in the future

SUMMARY

- The financial system is made up of many types of financial institutions, like the stock and bond markets, banks, and mutual funds.
- National saving equals private saving plus public saving.
- In a closed economy, national saving equals investment. The financial system makes this happen.

SUMMARY

- The supply of loanable funds comes from saving. The demand for funds comes from investment. The interest rate adjusts to balance supply and demand in the loanable funds market.
- A government budget deficit is negative public saving, so it reduces national saving, the supply of funds available to finance investment.
- When a budget deficit crowds out investment, it reduces the growth of productivity and GDP.