

SLIDE 1—Chapter 9: **Savings, Interest Rates, and the Market for Loanable Funds**

9

Savings, Interest Rates, and the Market for Loanable Funds

Pre-class music: “Thrift Shop” by Macklemore ([See Tip #326](#))

In this song, Macklemore sings about spending ninety-nine cents at a thrift shop, instead of spending thousands of dollars on designer goods. This song is therefore a good introduction to the topics of savings and financial responsibility.

SLIDE 2—Previously

Previously

- CPI is the foundation of inflation calculation
 - Computation can be difficult because the typical “basket” of consumer goods changes over time
 - The BLS tries to adjust for this
- Inflation is often misunderstood by the general public
- There are several macroeconomic costs from inflation
- Inflation is caused and controlled by expansions of a nation’s money supply

SLIDE 3—Big Questions

Big Questions

1. What is the loanable funds market?
2. What factors shift the supply of loanable funds?
3. What factors shift the demand for loanable funds?
4. How do we apply the loanable funds market model?

SLIDE 4—The Loanable Funds Market—1

The Loanable Funds Market—1

- Loanable funds market
 - Includes such places as:
 - stock exchanges
 - investment banks
 - mutual fund firms
 - commercial banks
 - Borrowers use funds for businesses
 - Savers lend to businesses

Lecture notes:

The loanable funds market is not a single physical location. It includes places like:

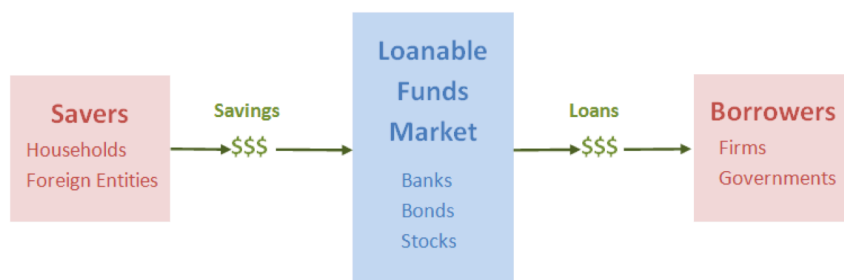
- Stock exchanges
- Investment banks
- Mutual fund firms
- Commercial banks

In this chapter, we will see that this market is extremely important.

- Most businesses cannot fund capital and other investment purchases with cash flow alone. Large purchases are particularly difficult to fund with cash.
- Without the loanable funds market, much investment would be impossible and production and GDP would falter.

SLIDE 5—The Loanable Funds Market—2

The Loanable Funds Market—2



Lecture notes:

Savings flows into the market for loanable funds and this is translated into loans for borrowers.

- We could call it the market for savings, or even the market for loans.
- The term **loanable funds** captures the implications for both: savings are funds available for loans to borrowers, or loanable funds.

On the left side:

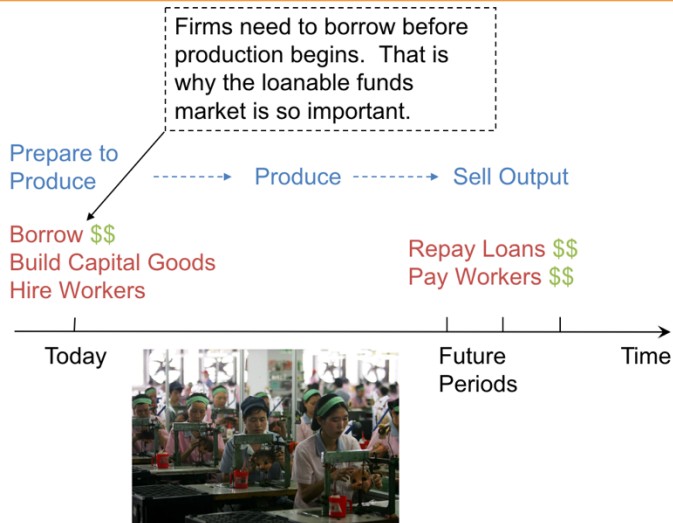
- The suppliers of funds (savers) include households and foreign entities.
- Foreign entities include both the private citizens and governments that decide to save in the United States.
- Household savings in retirement accounts, stocks, bonds, and mutual funds are other big sources of loanable funds.

On the right side:

- The demanders of loanable funds include business firms and governments.
- Firms demand borrowed funds to finance large expenses, such as capital purchases or business expansions.

SLIDE 6—Production Timeline: Firms Need to Borrow

Production Timeline: Firms Need to Borrow



Lecture notes:

To reinforce the importance of this market, consider why borrowing takes place.

- Firms borrow to invest.
- In other words, firms, looking to produce output in the future, must borrow to pay expenses today.
- Without borrowing, production may not take place; and this, of course, would greatly hurt the macroeconomy.

Lecture tip:

The chart on this slide was seen in the previous chapter. However, a different part of the figure is emphasized here.

Regarding the image on the slide: Before anything is produced in the factory, the firm must invest.

- The firm will borrow to build factories and warehouses, buy equipment, and hire workers.

SLIDE 7—Notes about Borrowing

Notes about Borrowing

- Every dollar borrowed requires a dollar saved
 - Lenders can't lend money they don't have
 - Savings provides funds for lenders to lend
- Chain of borrowing:
 - Savings → Borrowing → Investment → GDP**
 - The loanable funds market makes this process efficient

Lecture notes:

In order for GDP (output/production) to grow, there must be investment.

- Investment usually requires borrowing, as firms do not always have cash flow available.
- In order for firms to borrow, others must save.
- Without savings, future production is not sustainable—the ability to tap into savings is that important.
- If firms want to borrow to buy resources to produce goods, somebody has to save.

SLIDE 8—Interest Rates

Interest Rates

- Interest rate
 - The price of loanable funds
 - Savers: the reward for saving
 - Borrowers: the cost of borrowing
 - Like other prices, it rises and falls
 - Affected by supply and demand
 - We can examine this market like any other market



Good: Loanable Funds

Price: Interest Rate

Sellers (Suppliers): Savers

Buyers (Demanders): Borrowers

Lecture notes:

- Many people, thinking about retirement, buying a house or car, or some other big purchase, worry about interest rate fluctuations and have no clear understanding as to why interest rates rise and fall.
- The interest rate is just the price of loanable funds, and if you know how to use supply and demand, you can determine what makes interest rates rise and fall.

SLIDE 9—The Loanable Funds Market—3

The Loanable Funds Market—3



Image: Animated Figure 9.3

- First, enter X axis (loanable funds)
- Next, Y axis (interest rate)
- Then, enter savings
- Then, investment

Lecture Tip: Click through the slide to reveal each part of the graph.

Walk through each part of the graph individually with your students:

- First, explain the horizontal axis: savings and investment (or loanable funds). This is the good in the market.
- Next, identify the vertical axis: the interest rate. This is the price of loanable funds.
- It is worth noting that this is the *long-term real interest rate*. The distinction between this and other types of interest rates will be made later in the course.

First click:

- The savings curve represents the supply of loanable funds.
- This curve has a positive slope indicating that the quantity of loanable funds supplied increases as the interest rate increases (and people earn a higher rate of return on savings)

Second click:

- The investment curve represents the demand of loanable funds by borrowers (firms and the government).

- This curve has a negative slope indicating that the quantity of loanable funds demanded increases as the interest rate decreases (and the cost of borrowing falls).

Lecture notes:

Savings is channeled into investment in the loanable funds market.

- In this market, loanable funds are the goods that are bought and sold.
- The price is an interest rate.
- This price, like any other market-determined price, is determined by the interaction of supply and demand.

SLIDE 10—Economics in *The Office*, “Dream Team”

Economics in *The Office*, “Dream Team”

- What is the loanable funds market?
- The Michael Scott Paper Company tries to convince “Nana” and her investment club to finance them.



“Economics in the Media” Slide

Lecture tip:

The clip mentioned on the slide can be found in the Interactive Instructor’s Guide. Access the direct link by clicking the icon in the PowerPoint slide, or by clicking [here](#).

The key concepts covered in this clip are:

- Investor confidence (of which “Nana” and her club have none!)
- Loanable funds
- Economic crisis

SLIDE 11—Interest Rates and the Supply of Loanable Funds

Interest Rates and the Supply of Loanable Funds

- When you save money, you are supplying funds.
 - The price you receive in return is the interest
 - Percentage (rather than dollars)
 - Example:
 - Interest rate = 3% per year
 - $\$500 \times 0.03 = \15
 - Saving \$500 will pay \$15 for the year
- Loanable funds “law of supply”
 - The quantity of savings rises when the interest rate increases

Lecture Notes:

- If you have a positive balance in either a savings or checking account, you are a supplier in the loanable funds market.
- For savers, the interest rate is a reward.
- Every dollar saved today returns more in the future when the interest rate is positive.
- The higher the interest rate, the greater the returns in the future, and the more people want to save (increasing the quantity of loanable funds supplied).

Class activity: Writing to Learn: Linking Concepts ([See Tip #336](#))

You can ask students to answer the following questions by using what they already know about the role of incentives in economics:

- Describe the relationship between interest rates and savings rates.
- Do you have a savings account? What incentivizes you to save versus spend?

SLIDE 12—Higher Interest Rates Yield Greater Future Returns

Higher Interest Rates Yield Greater Future Returns

This table represents the future value of \$500 in savings at different interest rates.

The interest rate is a reward for saving money.

Interest Rate	Value After 1 Year
4%	\$520
5%	\$525
6%	\$530
10%	\$550

Lecture notes:

The table on this slide represents the future value of \$500 in savings at different interest rates.

- For example, if you save \$500 for one year at an interest rate of 6percent, this yields \$530 next year, computed as:
= \$500 + 6% of \$500
= \$500 + 0.06*\$500
= \$500 + \$30
= \$530
- The higher the interest rate, the greater the incentive to save.
- If you can find a bank that pays you 10 percent interest, you could have \$550 after just one year of saving.
- Higher interest rates induce more savings as people respond to these incentives.
- This is the loanable funds version of the law of supply: the quantity of savings rises when the interest rate rises.

SLIDE 13—Class Activity: Think-Pair-Share: Rate of Return

Class Activity: Think-Pair-Share: Rate of Return

- Justin is considering buying a new golf cart with a purchase price of \$4,000.
- He is expecting to earn \$1,600 per year for the next 4 years by shuttling students to and from the TLC and Z-6 parking lots to class, particularly during stormy weather.

Answer the following:

- 1) What is the expected rate of return on this investment for Justin?
- 2) If Justin can get a \$4,000 loan from his bank at 10% interest, should he purchase the cart?

Class activity: Think–Pair–Share: Rate of Return ([See Tip #350](#))

- Have students pair together to compare their answers to the questions on the slide.
- Once all the pairs have come up with their answer, have a select few share their responses.
- Answer:
 - The formula to calculate the expected rate of return is: *expected annual earnings divided by purchase price*. Tell your students that a good rule of thumb is “profit-maximizing firms borrow to fund an investment if and only if the expected return on the investment is greater than the interest rate on the loan.”
 1. Expected rate of return for the golf cart = $\$1,600/\$4,000 = 16/40 = 4/10 = 2/5 = .40$ or 40% per year.
 2. Because the expected return on investment is greater than the interest rate at the bank, Justin should purchase the cart.

SLIDE 14—Practice What You Know—1

Practice What You Know—1

- Where does the supply of funds in the loanable funds market come from?
 - A. Banks printing money
 - B. Firms borrowing money for investment
 - C. Government tax revenues from citizens
 - D. Consumers saving their money at banks

Clicker question:

Correct answer: D, Consumers saving their money at banks

In this market, consumers supply funds by saving, and firms (and other borrowers) demand funds to borrow.

SLIDE 15—Interest Rates as a Cost of Borrowing

Interest Rates as a Cost of Borrowing

- Interest rate on the demand side
 - Interest rate is the cost of borrowing
- When should a firm borrow?
 - Do a cost-benefit analysis
 - Borrow funds if:

Expected return on investment > Interest rate on loan

Lecture notes:

- On the other hand, higher interest rates mean a firm pays more to borrow.
- Firms should only borrow if they expect a greater return on their investment than the loan costs.
 - For example, at an interest rate of 6 percent, a firm would borrow only if they expect to make more than 6 percent return with their use of the funds.
 - Applying the rule above, as the interest rate falls, the quantity of loans demanded rises.
 - This yields the inverse relationship between the interest rate and quantity demanded of loans that is embedded in the slope of the demand curve for loanable funds.

SLIDE 16—Practice What You Know—2

Practice What You Know—2

- The interest rate can be thought of as:
 - A. the rate at which banks loan funds.
 - B. the return on a capital investment.
 - C. the real rate of inflation.
 - D. the price of money.

Clicker question:

Correct answer: D, the price of money.

- Savers receive an interest rate as payment for lending their funds to borrowers.
- Borrowers pay an interest rate when they take out a loan.

SLIDE 17—Inflation and Interest Rates

Inflation and Interest Rates

- Real interest rate
 - The interest rate corrected for inflation
- Nominal interest rate
 - The interest rate *before* it is corrected for inflation
- Fisher equation
 - Relates inflation to the real and nominal interest rate

real interest rate = nominal interest rate – inflation rate

or

nominal interest rate = real interest rate + inflation rate

Lecture notes:

Savers and borrowers care about the real rate of interest on a loan.

- This is the rate that describes how the real purchasing power of their funds changes over the course of the loan.
- Since interest rates are a result of supply and demand in the market for loanable funds, higher inflation rates lead to higher nominal interest rates in order to compensate lenders for the loss of purchasing power.

The difference between real and nominal interest rates is the rate of inflation.

- The real interest rate is related to real purchasing power.
- The nominal rate of interest is the “stated” interest rate on a loan.

Higher levels of inflation will lead to higher nominal interest rates, even when real interest rates are constant.

Lecture tip: Table 9.2 in the text shows a few simple examples of these relationships. For example:

- If the real interest rate is 4 percent and there is no inflation, then the nominal interest rate is also 4 percent.
- If inflation rises to 2 percent, the nominal interest rate increases to 6 percent.
- If the inflation rate rises further to 4 percent, then the nominal interest rate rises to 8 percent.

SLIDE 18—Real and Nominal Interest Rates, 1965–2015

Real and Nominal Interest Rates, 1965–2015

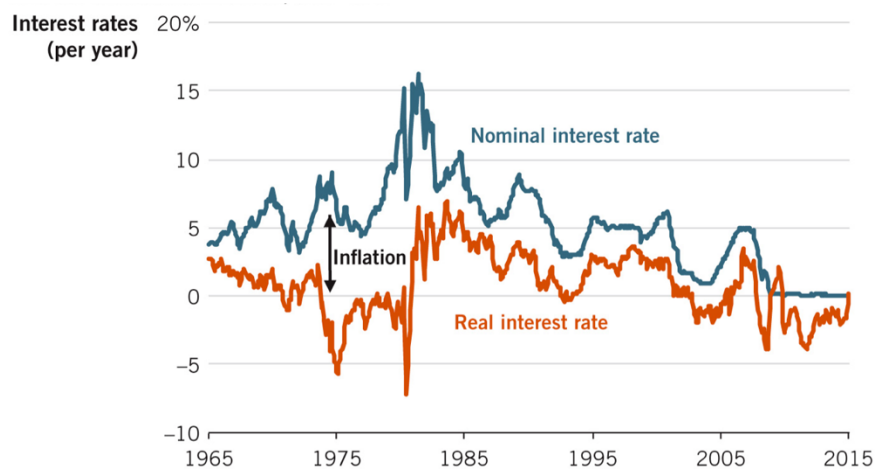


Image: Figure 9.4

Lecture notes:

- If inflation is positive, the nominal interest rate will be greater than the real interest rate.
- If inflation is negative (deflation), the real interest rate will be greater than the nominal interest rate.
- If inflation is positive but falling (disinflation), the nominal interest rate will be greater than the real interest rate, but the gap between the two will close.
- The difference between the real and nominal interest rates is the rate of inflation.
- The experience of the 1970s illustrates that nominal interest rates are historically high when inflation is also high.

SLIDE 19—Quick Summary

Quick Summary

- Supply of loanable funds
 - Comes from people saving money
 - Interest rate is a reward for saving
- Demand of loanable funds
 - Comes from people wanting to borrow money
 - Interest rate is the cost of borrowing



SLIDE 20—What Factors Shift the Supply of Loanable Funds?

What Factors Shift the Supply of Loanable Funds?

- **Movement along** the supply curve for loanable funds
 - Caused by a **change in the interest rate**
- **Shift** in the **supply** of loanable funds is caused by
 - Changes in income and wealth
 - Changes in time preferences
 - Consumption smoothing

Lecture notes:

- The interest rate is the cost (*price*) of borrowing.
- Movements along the curve occur when there is a change in the price (*interest rate*).
- Shifts in the curve occur with a change in a variable (other than the interest rate) that affects supply.
- This is comparable to the one goods market supply/demand.

SLIDE 21—Shifts in the Supply of Loanable Funds—1

Shifts in the Supply of Loanable Funds—1

- Changes in income and wealth
 - Increases in income generally increase savings
- Time preferences
 - People generally prefer goods sooner rather than later, and funds are no different

Lecture notes:

Changes in income and wealth are graphed as a shift in the supply of loanable funds.

- There is a positive relationship between changes in income and wealth and savings.
- High-income people (and countries) save more than low-income people (and countries) at the same interest rate.

When people save, they also want to save where the interest rate is highest.

- This is why many foreign entities invest savings in the United States.
- As nations around the globe gain wealth, they save more too.
- Over the past couple of decades, the increase in foreign savings has often made its way into the U.S. loanable funds market.

All else being equal, increases in income generally increase savings.

- If income declines, people generally save less.
- We recognize this propensity in both domestic and foreign savers.
- In other words, people save more dollars as dollar income rises.

Time preferences

- Would you rather have \$50 now or \$50 later?
- Loans are paid back at a later date.
- As compensation for using their funds today, borrowers must pay lenders.
- The longer the loan period, the higher the payment

Two general rules of preferences:

1. People prefer more to less

2. People prefer now to later

- If you make someone wait later, you must compensate by giving them more!

SLIDE 22—Time Preferences—1

Time Preferences—1

- Time preferences are not uniform across individuals and societies
 - Less patient people prefer now to later and will save less
 - Time preferences help determine the savings rate

Lecture notes:

Time preferences help determine the savings rate in a society.

- The savings rate is calculated as personal saving as a portion of disposable (after tax) personal income.
- Abrupt changes in the overall savings rate are rare but not unprecedented

SLIDE 23—Time Preferences—2

Time Preferences—2

- Application: Decision to attend college
 - Option 1: Get a job
 - Earn income immediately
 - Consume now
 - Option 2: Go to college
 - Forego current income and consumption
 - Higher future income and consumption

Lecture notes:

Application: College

- Every year you are in college is a year you could have earned income.
- The fact that you are a college student demonstrates you are more patient than some others who enter the workforce and earn income directly out of high school.
- The truly impatient enter the workforce immediately so they can earn income (and spend on consumption) immediately.
- But college students also earn more than high school graduates when they do enter the workforce.
- In fact, in the United States more schooling typically leads to more income.
- So, there is a tradeoff between earning income and consuming today and delaying workforce entry, earning more income later, and consuming more later.

Lecture tip: You can refer students to Figure 9.5 for evidence of median salary by education level.

- The figure shows median annual salary in the United States by educational attainment.
- There are some college dropouts who earn millions of dollars a year (like Bill Gates), but this data shows that the middle (median) worker with a basic college degree earns about \$15,000 more than those who don't graduate from college.

Practice What You Know—3

- How will an increase in time preferences affect the loanable funds market? There will be a(n):
 - A. increase in the supply of loanable funds.
 - B. decrease in the supply of loanable funds.
 - C. increase in the demand of loanable funds.
 - D. decrease in the demand of loanable funds.

Clicker question:

Correct answer: B, decrease in the supply of loanable funds.

- An increase in time preferences means that people are less patient (they are more impatient).
- This means that consumption *now* is much more important and *later* is not considered.
- Thus, today's spending will increase, and today's savings will decrease.
- The decrease in savings causes the decrease in supply of loanable funds.

SLIDE 25—Historical U.S. Unemployment Rates—2

Shifts in the Supply of Loanable Funds—2

- Consumption Smoothing:
 - No large changes in consumption with changes in income
 - Income changes over the course of the typical lifetime

Lecture notes:

Young students and elderly retirees don't work, but most people do earn income in between those years.

- However, young people and retirees still consume goods and services.
- Individuals pay to consume goods and services during this time by borrowing or using savings.

People generally like to smooth consumption over the lifecycle.

- Explain this to students by asking them to consider their current situation:
 - College students typically spend more (tuition, room and board, food, beer, etc.) than they earn in income.
 - While some of this deficit is funded by help from parents, much of the difference is often financed by borrowing.
 - Sometime after graduation and getting a job, many people buy a home.
 - For this purchase, people usually borrow again.
 - So, early in a typical life, consumption is less than income.
 - The difference is made up through borrowing.

In terms of the market for loanable funds, savings is highest when people are in midlife.

- Now, if there is a generally stable flow of people moving in and out of the labor force, there is very little or no effect on savings in the market for loanable funds.
- But, if a significant portion of the population leaves their prime earning years at the same time, savings falls.

Lecture tip: The figure on the next slide (Animated Figure 9.6) will help illustrate this for students.

SLIDE 26—Shifts in the Supply of Loanable Funds—3

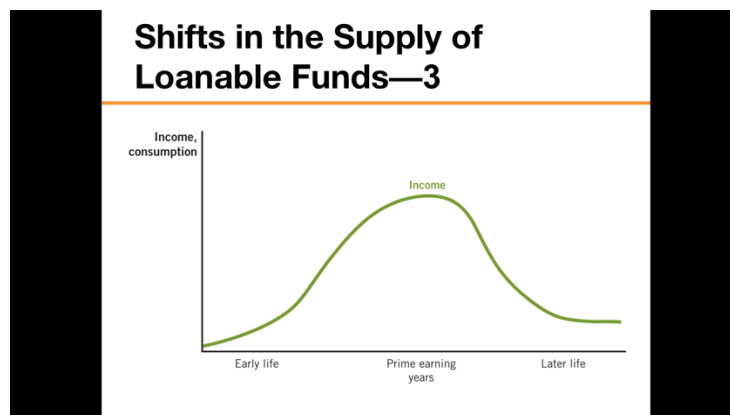
Image: Animated Figure 9.6

Lecture notes:

In the figure on the slide, the vertical distance between income and consumption is a picture of the borrowing.

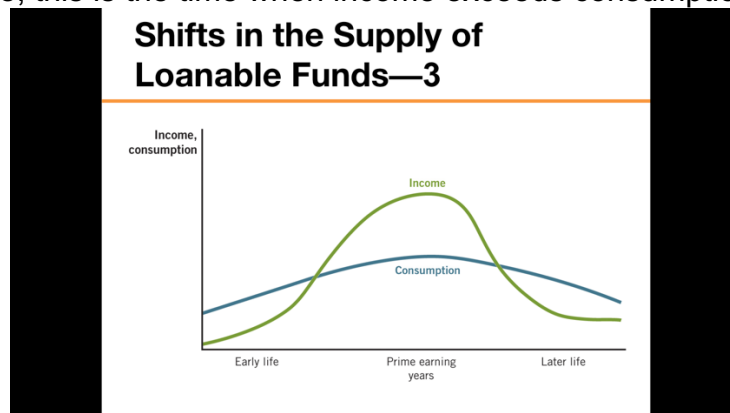
First click:

- Income reaches its highest level in midlife during the prime earning years.
- This is typically when individuals pay off loans from early life and save for retirement

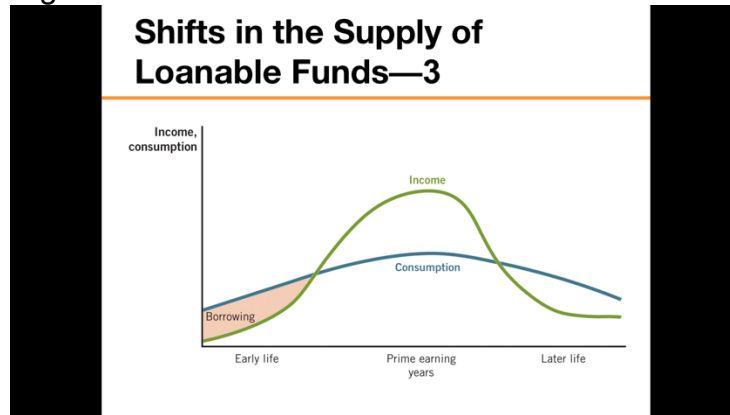


Second click:

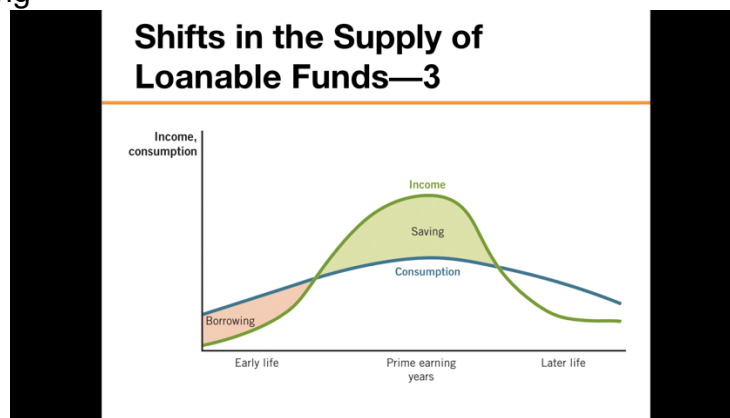
- In the figure, this is the time when income exceeds consumption.



Third click: Borrowing

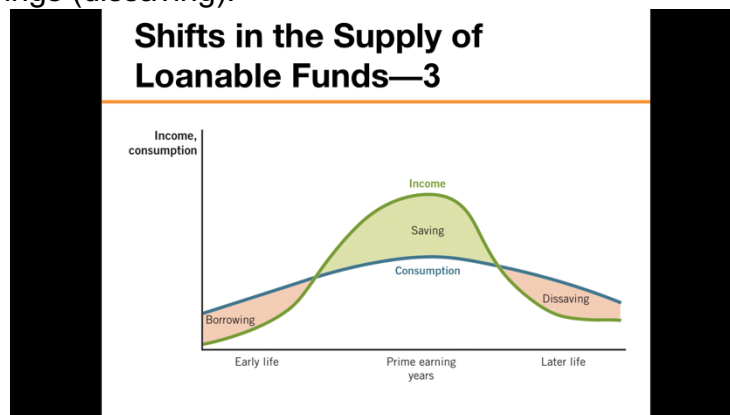


Fourth click: Saving



Fifth click:

- Then, later in life, when income is lower (due to retirement), most people live off of their savings (dissaving).



SLIDE 27—Practice What You Know—4

Practice What You Know—4

- In the basic consumption-smoothing model, when are consumers dissaving?
 - A. During prime earning years
 - B. In their 20s and 30s
 - C. Very early in life
 - D. Late in life

Clicker question:

Correct answer: D, Late in life

Dissaving means spending more than you're earning (without borrowing).

- For example, a retiree spending his retirement savings.

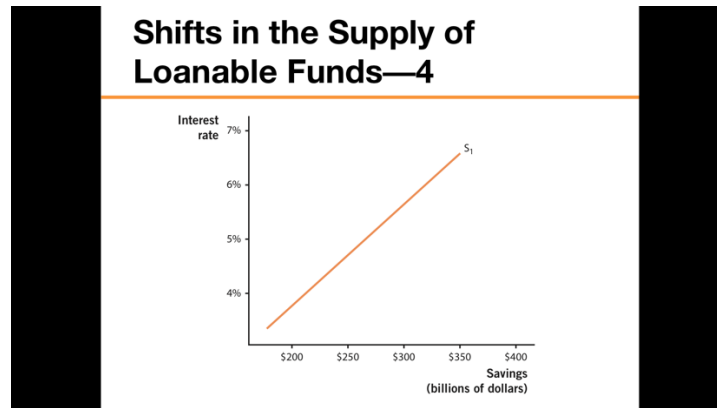
SLIDE 28—Shifts in the Supply of Loanable Funds—4

Image: Animated Figure 9.7

Lecture tip:

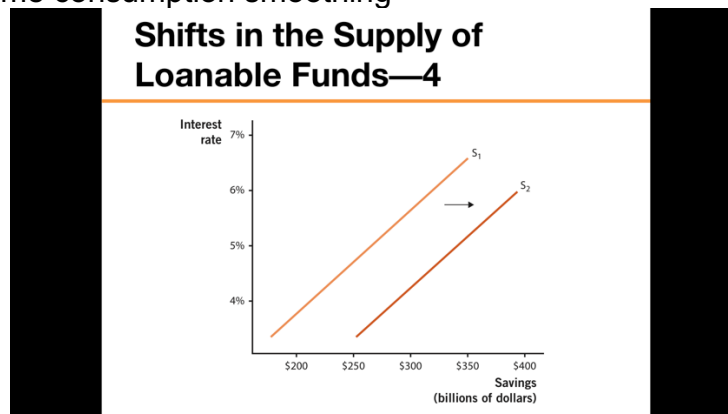
Click through the slide so that each part of the graph appears.

First click: S_1



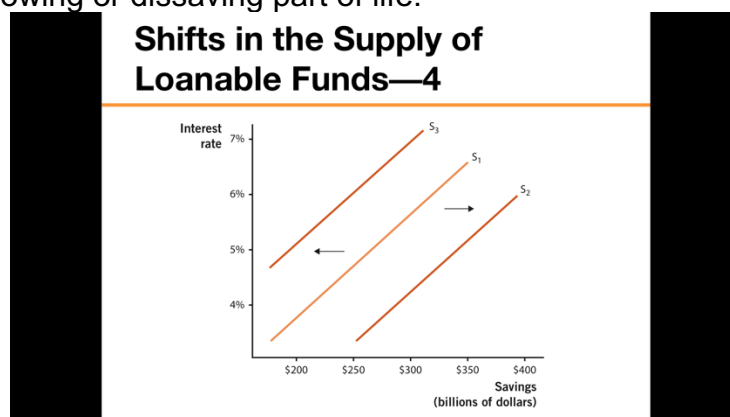
Second click:

- An increase in the supply of loanable funds is represented by a shift to the right in the savings curve (from S_1 to S_2)
- This could be caused by:
 - An increase in wealth
 - A decrease in time preferences (people prefer more *later* instead of *now*)
 - An increase in the amount of the population in the “savings” part of their lifetime consumption smoothing



Third click:

- A decrease in the supply of loanable funds is represented by a shift to the left in the savings curve (from S_1 to S_3)
- This could be caused by:
 - A decrease in wealth
 - An increase in time preferences (people prefer more *now* instead of *later*)
 - A decrease in the amount of the population in the “savings” part of their lifetime consumption smoothing. Alternatively, more people in the borrowing or dissaving part of life.



Here is an example:

- Today, we have a bubble in our population known as the baby boomers, or more affectionately, your moms and dads.
- From 1946 to 1964, there was an identifiable increase in U.S. birth rates and this led to a larger-than-normal population for these years that persists to the present.
- With normal retirement at age 65, the oldest baby boomers began retiring in 2011.
- Over the next 10 to 15 years, U.S. workers will enter retirement in record numbers.
- This will result in a mass exit from the prime earning years and, consequentially, less savings.
- This is illustrated as a shift from S_1 to S_3 .

SLIDE 29—Factors That Impact the Supply of Loanable Funds

Factors That Impact the Supply of Loanable Funds

Factor	Direction of Effect	Explanation
Income and wealth	Positive relationship +	Savings is more affordable when people have higher income and wealth.
Time preferences	Negative relationship -	Lower time preferences indicate that people are more patient and more likely to save for the future.
Consumption smoothing (midlife)	Positive relationship +	Income varies over the lifecycle, but people generally like to smooth consumption.

Lecture notes:

The chart on the slide summarizes the slope and shift of the supply of loanable funds:

- Income and Wealth
 - *Increases* in income and wealth *increase* the supply of loanable funds.
 - *Decreases* in income and wealth *decrease* the supply of loanable funds.
- Time Preferences
 - *Increases* in time preferences *decrease* the supply of loanable funds.
 - *Decreases* in time preferences *increase* the supply of loanable funds.
- Midlife
 - If *more* people are in midlife and their prime earning years, savings is *higher*.
 - If *fewer* people are in midlife, savings is *lower*.

SLIDE 30—Savings Rate in the United States, 1965-2015

Savings Rate in the United States, 1965–2015

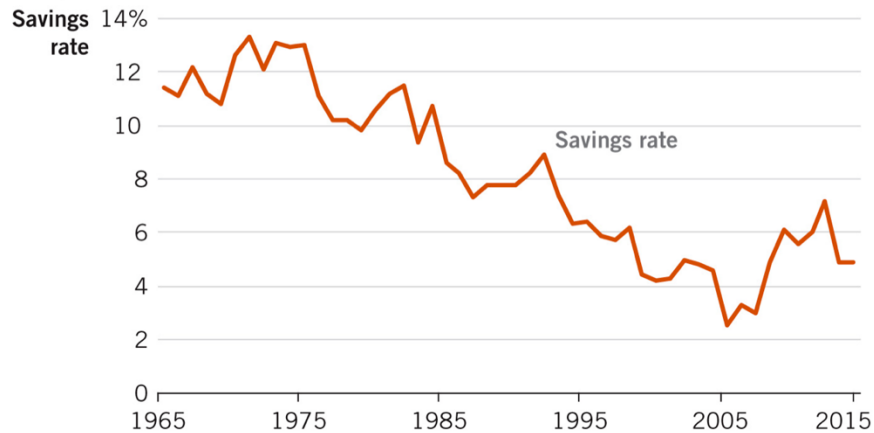


Image: Figure 9.8

Lecture notes:

The savings rate in the United States has fallen consistently for almost 30 years (beginning in the early 1980s).

The figure on the slide plots savings rates in the U.S. since 1969.

- In 1980, the savings rate was over 10 percent.
- The decline continued until about 2005 when the savings rate bottomed out at just 1.4 percent.
- The reason for this decline is unclear.
- Perhaps people's time preferences increased over this period or the baby boomers were just less patient than their parents.

All else being equal, this decline in savings rates shifts back the supply of loanable funds.

SLIDE 31—Demand for Loanable Funds

Demand for Loanable Funds

- Demanders of loanable funds are borrowers
 - Demand is driven largely by firms that need to borrow for large capital projects
 - Governments also borrow
- Recall:
 - Borrowing must occur to build capital goods
 - This occurs before any production of final goods

Lecture notes:

- Long before revenue arrives from output sales, firms must spend to build capital to aid in production.
- These funds must be borrowed and this borrowing occurs in the loanable funds market.
- These loans, to finance investment, are the primary source of the demand for loanable funds.

SLIDE 32—What Factors Shift the Demand of Loanable Funds?

What Factors Shift the Demand of Loanable Funds?

- **Movement along** the demand curve for loanable funds
 - Caused by a **change in the interest rate**
- **Shift** in the **demand** of loanable funds caused by
 - Changes in the productivity of capital
 - Changes in investor confidence

Lecture tip: Remind students that the interest rate is the cost of borrowing

SLIDE 33—Shifts in the Demand for Loanable Funds—1

Shifts in the Demand for Loanable Funds—1

- Productivity of capital
 - If capital becomes more productive, the demand for loans will increase
 - The returns on investment (at any interest rate) will be greater
 - Example: Internet and computers
- Investor confidence
 - If a firm is optimistic, it will borrow more today
 - Changes in capital productivity and investor confidence will shift the demand for loanable funds



Lecture notes:

Productivity of capital:

- Consider the impact of the Internet.
- If you have a connection to the Internet, you have quick access to data and networking capabilities people only dreamed about twenty years ago.
- It's hard for you to imagine now, but maps, travel arrangements, job searches, and data research are a few of the tasks we used to complete without the aid of the Internet.
- How would you complete these tasks today without access to an Internet connection?
- Think about online maps, online travel prices, online data and search. . . . the Internet makes computers better!

Regarding the images on the slide:

- A cordless drill is more productive than a screwdriver.
- Higher productivity in capital means the firm will demand to borrow more funds to grow since it knows business expansion is more profitable.

Investor confidence:

- **Investor confidence** is a common phrase used in the media (such as on CNBC or Fox Business).
- When firms are optimistic, they expect the economy to grow in the future
- Firms are more inclined to borrow today if expected profits tomorrow are large
- John Maynard Keynes coined the term **animal spirits**—implying that investment demand may not even be based on real factors in the economy.

- In other words, a change in firms' expectations about the state of the economy can alter investment behavior.

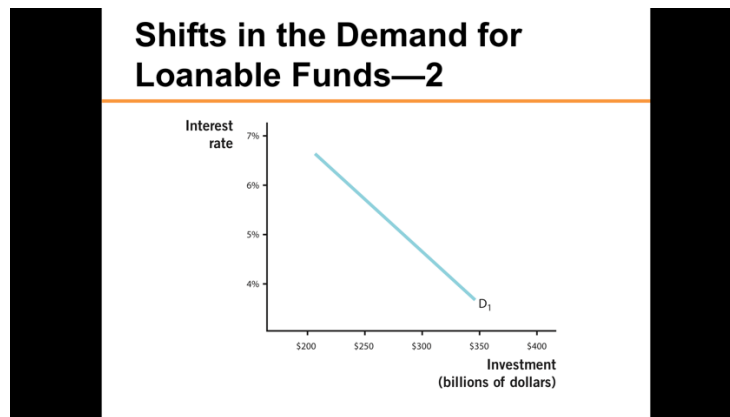
SLIDE 34—Shifts in the Demand for Loanable Funds—2

Image: Animated Figure 9.9

Lecture tip:

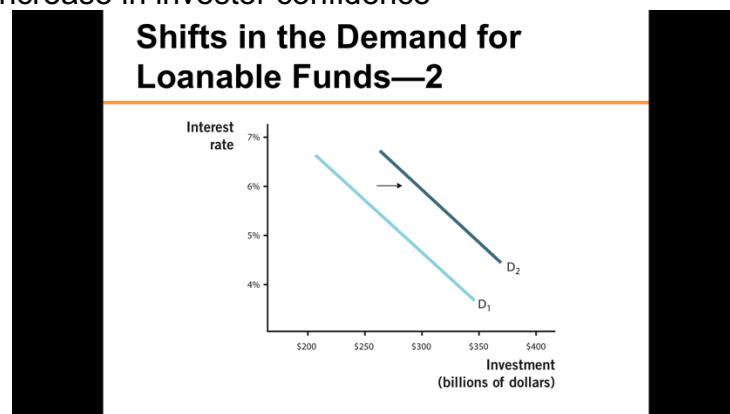
Click through the slide so that each part of the graph appears.

First click: D_1



Second click:

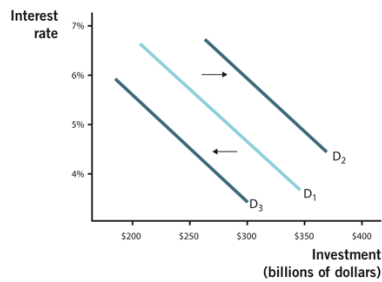
- An increase in the demand of loanable funds is represented by a shift to the right in the investment curve (from D_1 to D_2)
- This could be caused by:
 - An increase in capital productivity
 - An increase in investor confidence



Third click:

- A decrease in the demand of loanable funds is represented by a shift to the left in the investment curve (from D_1 to D_3).
- This could be caused by:
 - A decrease in capital productivity
 - A decrease in investor confidence

Shifts in the Demand for Loanable Funds—2



SLIDE 35—Economics in *Gold Rush Alaska*, “No Guts, No Glory”

Economics in *Gold Rush Alaska*, “No Guts, No Glory”

- Factors that Shift Demand for Loanable Funds: Productivity



“Economics in the Media” Slide

Lecture tip:

The clip mentioned on the slide can be found in the *Interactive Instructor’s Guide*. Access the direct link by clicking the icon in the PowerPoint slide, or by clicking [here](#).

The key concepts covered in this clip are:

- The demand for loanable funds
- Productivity of capital
- Investor confidence

SLIDE 36—Equilibrium in the Market for Loanable Funds—1

Image: Animated Figure 9.10

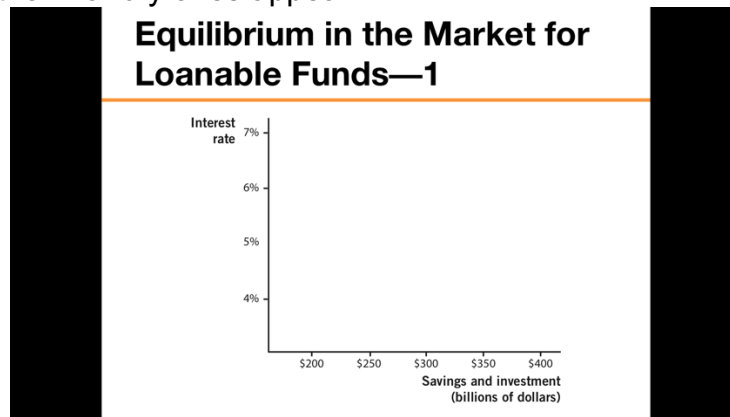
Lecture tip:

Click through the slide so that each part of the graph appears.

Equilibrium in the loanable funds market is determined by the interest rate at which the plans of savers match the plans of borrowers.

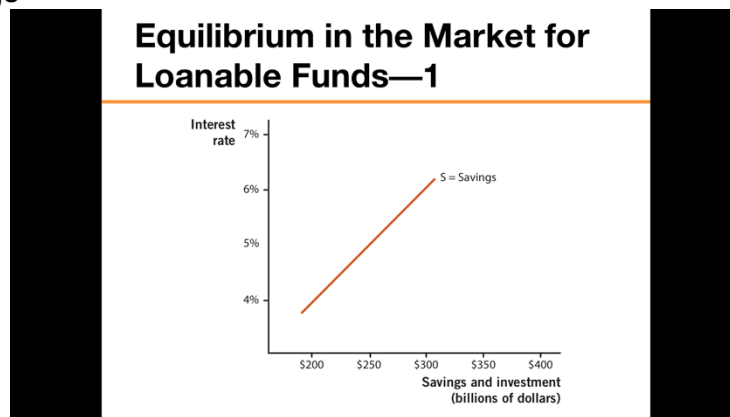
First click:

- Values on the x- and y-axes appear.



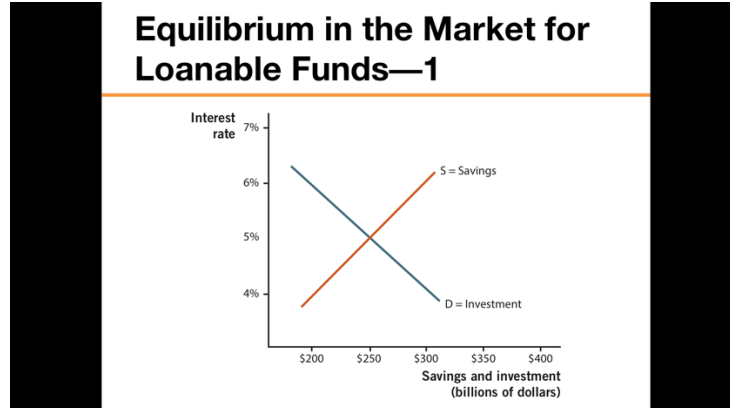
Second click:

- S = Savings



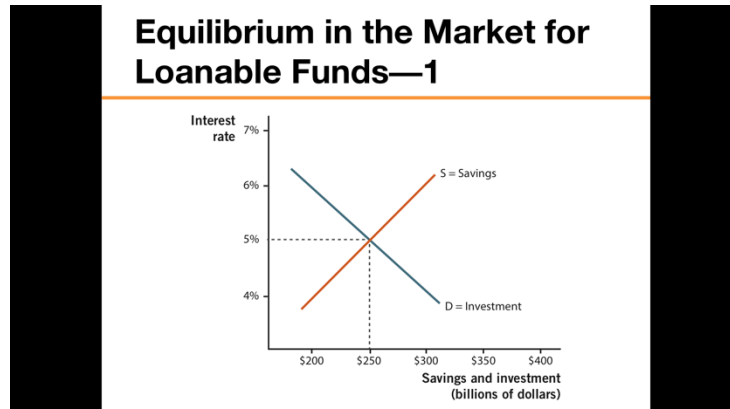
Third click:

- $D = \text{Investment}$



Fourth click:

- Quantity supplied = quantity demanded
- Equilibrium in this market reflects an important principle:
 - $\text{Savings} = \text{Investment}$
- Dollars that make their way into the loanable funds market are channeled to firms for investment purposes.
- This principle indicates how important savings is in the macroeconomy.
- Without savings, there is no investment because *every dollar borrowed requires a dollar saved*.



SLIDE 37—Equilibrium in the Market for Loanable Funds—2

Equilibrium in the Market for Loanable Funds—2

- In equilibrium:
 - Savings = Investment**
 - Supply of loanable funds is savings
 - Demand for loanable funds is firms wanting to borrow
- Relationship between saving and borrowing
 - **Every dollar borrowed requires a dollar saved**

SLIDE 38—Savings and Lending in *Mary Poppins*

Savings and Lending in *Mary Poppins*

- “Invest as propriety demands”



“Economics in the Media” Slide

Lecture tip:

The clip mentioned on the slide can be found in the *Interactive Instructor’s Guide*.
Access the direct link by clicking the icon in the PowerPoint slide, or by clicking [here](#).

In addition to saving and lending, the key concepts covered in this clip are:

- Money
- Banking
- Compound interest
- Investment

Practice What You Know—5

- What is true about equilibrium in the market for loanable funds?
 - A. Savings = Investment
 - B. Interest rate = Inflation
 - C. Investment = Interest Rate
 - D. Savings = GDP

Clicker question:

Correct answer: A, Savings = Investment

- In equilibrium, quantity demanded = quantity supplied.
- In the loanable funds market, quantity demanded is investment (money borrowed) and quantity supplied is savings.

SLIDE 40—Decline in Investor Confidence—1

Decline in Investor Confidence—1

- Investor confidence tends to decline when the economy slows
 - Firms expect reduced sales, and investors expect lower returns on their investments
 - Model predicts that this will result in a lower level of investment and a lower interest rate
 - Investment fell during both U.S. recessions between 2000 and 2012

Lecture notes:

The two recessions between 2000 and 2015 give empirical evidence to support this.

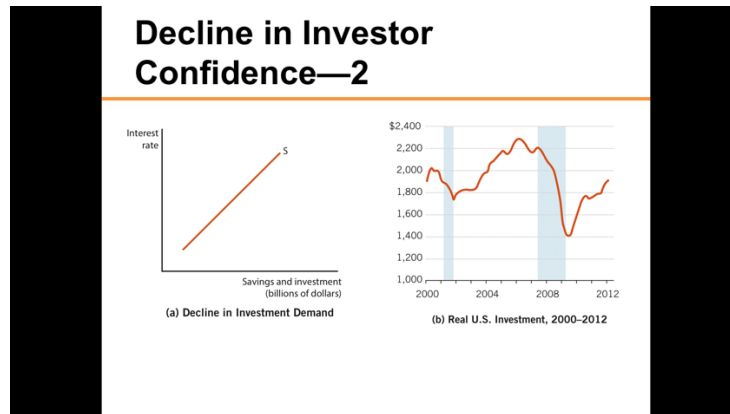
SLIDE 41—Decline in Investor Confidence—2

Image: Animated Figure 9.11

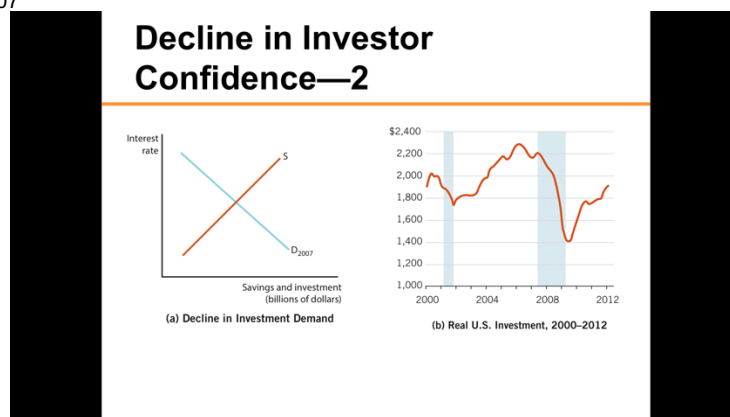
Lecture tip:

Click through the slide so that each part of graph A appears.

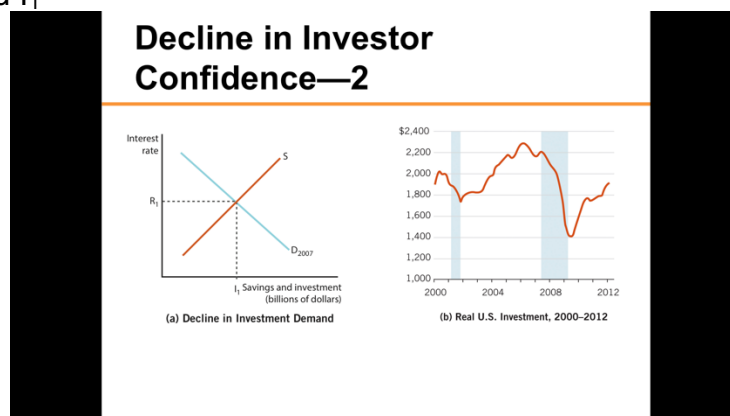
First click: S



Second click: D_{2007}

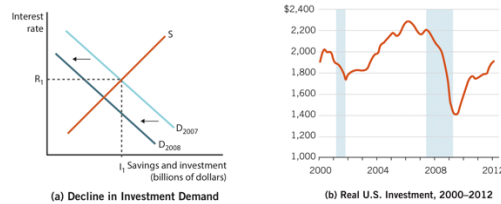


Third click: R_1 and I_1



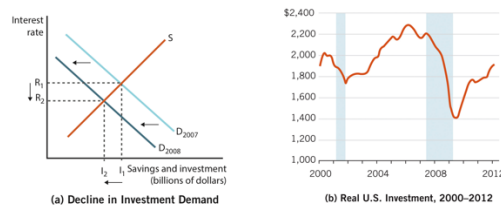
Fourth click: D_{2008}

Decline in Investor Confidence—2



Fifth click: R_2 and I_2

Decline in Investor Confidence—2



Lecture notes:

Panel (a)

- When decision-makers at firms lose confidence in the future direction of the economy, investment demand declines.
- This leads to lower investment, saving, and interest rate.

Panel (b)

- Real investment declined during both recessions that occurred between 2000 and 2012.

SLIDE 42—Future of the Loanable Funds Market in the United States

Future of the Loanable Funds Market in the United States

- Fall in the savings rate over past 30 years
 - Increase in time preferences
 - Leftward supply shift in loanable funds market
 - Foreign savings in United States could shift supply back to the right
- Retirement of baby boomers
 - Another reason to believe there will be a leftward shift in the supply of funds
 - Result could be less investment and reduced GDP growth

Lecture notes:

- The first scenario represents a leftward supply shift followed by a rightward supply shift.
- The second scenario is just a leftward supply shift.
 - In this case, interest rates would be higher and investment would be lower.
 - All else being equal, this means reduced investment and reduced GDP growth in the future.

SLIDE 43—Economics in *Confessions of a Shopaholic*

Economics in *Confessions of a Shopaholic*

- *Confessions of a Shopaholic* (2009)
 - In this scene, Becky Bloomwood almost ruins a Shopaholics Anonymous meeting
 - Concepts shown:
 - Consumption smoothing
 - Debt
 - Time preferences
 - Credit markets



“Economics in the Media” Slide

Lecture tip:

The clip mentioned on the slide can be found in the Interactive Instructor’s Guide. Access the direct link by clicking the photo in the PowerPoint slide, or by clicking [here](#).

SLIDE 44—Conclusion—1

Conclusion—1

- Loanable funds markets channel funds
from savers to borrowers
- Supply of loanable funds: household savings
 - Suppliers provide funds for firms to expand through investment, which is crucial for economic growth
- The quantity of loanable funds **supplied** is **positively** related to the interest rate.
- Supply increases with income and wealth but is also impacted by consumption smoothing and time preferences.

Lecture notes:

The loanable funds market can be conveyed through the mechanism of supply and demand

SLIDE 45—Conclusion—2

Conclusion—2

- Demand for loanable funds: loans to firms
 - Firms borrow to invest in capital that aids in production of future GDP
- The quantity of loanable funds **demanded** is **negatively** related to the interest rate.
- Demand increases with capital productivity and investor confidence.
- Equilibrium in this market determines the level of savings, investment, and interest rates.

Lecture notes:

- Recall investment in capital includes building or purchasing plants and equipment.
- Investment is determined by the equilibrium of the loanable funds market
- Without an efficient and stable loanable funds market
firms cannot get loans → investment decreases → economic growth slows