
EXIT
6
COLOR & TRIM
Price: $20,000

Compelling question

How are interest rates determined – and why are there so many?

Objectives

Students will be able to:

--define interest rates

--explain who benefits from and who is hurt by high and low interest rates

--explain how the interaction of savers and borrowers determines market interest rates

--ID the factors that shape specific nominal interest rates, such as mortgage or credit card rates

You want to buy this car. It costs $20,000, and you don’t have much money.

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$20,000?

How could you get the money?

Save or borrow.

What are the advantages of saving?

You don't have to pay extra in interest;
you don't have to pay anything back.

If you borrow, you will have to get a loan.
What is a loan?

It's using someone else's money for a period of time.

$20,000 continued

If you take a loan from a bank, what do you have to pay?

Interest.

When do you have to pay back the money?

You pay back a little at a time, usually in monthly payments.

What are the advantages of borrowing?

You can buy the car now or you don’t need to spend your own money.

$20,000 continued

Let's say you need the car now, so you decide to borrow the money. You will need an automobile loan. Where can you get a loan?

Family, bank, credit union, saving and loan, credit card.

Your family doesn't have $20,000 to buy you a car, so you shop around and find four possible loans. Let's look at them.

Lenders

Financial Institution	Term of Loan	Interest Rate
MIDTOWN BANK	\$20,000 48 months	4.0%
Century Credit Union	\$20,000 48 months	2.0%
YourCharge Credit Card	\$20,000 48 months	18.0%
Al's Car Emporium	\$20,000 48 months	8.0%

So which would you choose? Why?

Lenders

Financial Institution	Term of Loan	Monthly Payment
MIDTOWN BANK	$20,000 48 months	$451.58
Century Credit Union	$20,000 48 months	$433.90
YourCharge Credit Card	$20,000 48 months	$587.50
Al's Car Emporium	$20,000 48 months	$488.26

So which would you choose? Why?

Lenders

Financial Institution	Term of Loan	Total Cost of Car
MIDTOWN BANK	$20,000 48 months	$21,675.84
Century Credit Union	$20,000 48 months	$20,827.20
YourCharge Credit Card	$20,000 48 months	$28,200.00
Al's Car Emporium	$20,000 48 months	$23,436.48

So which would you choose? Why?

So what is an interest rate?

The price paid for using someone else's money, expressed as a percentage of the amount borrowed (usually expressed as an annual rate).

Why do interest rates matter?

Higher interest rates mean you have to pay more.

Is it true that lower interest rates are always better?

No. Savers and lenders want higher interest rates.

$10,000 in savings

Imagine that you have $10,000 in savings. You can save this money for 10 years before you want to use it toward buying a house. You could, of course, just keep the money as cash and, at the end of 10 years, you'd still have $10,000, but it would be worth less, due to inflation. If you save it in a financial institution, you can earn interest.

A few terms

Commercial bank: A for-profit financial institution that takes deposits, and lends the money to consumers and firms.

Credit union: It also takes deposits and makes loans but is generally not-for-profit and serves only its members, who share a common bond such as having the same employer.

Certificate of deposit: Like a savings account, but the depositor cannot withdraw the money for a set time – say 5 or 10 years – without paying a penalty.

Savings opportunities

Financial Institution	Type of Savings	Interest Rate
MIDTOWN BANK	Passbook account	1.0%
Century Credit Union	Passbook account	0.25%
Johnson Bank	5-year CD	4.0%
Top End Brokerage	10-year CD	5.0%

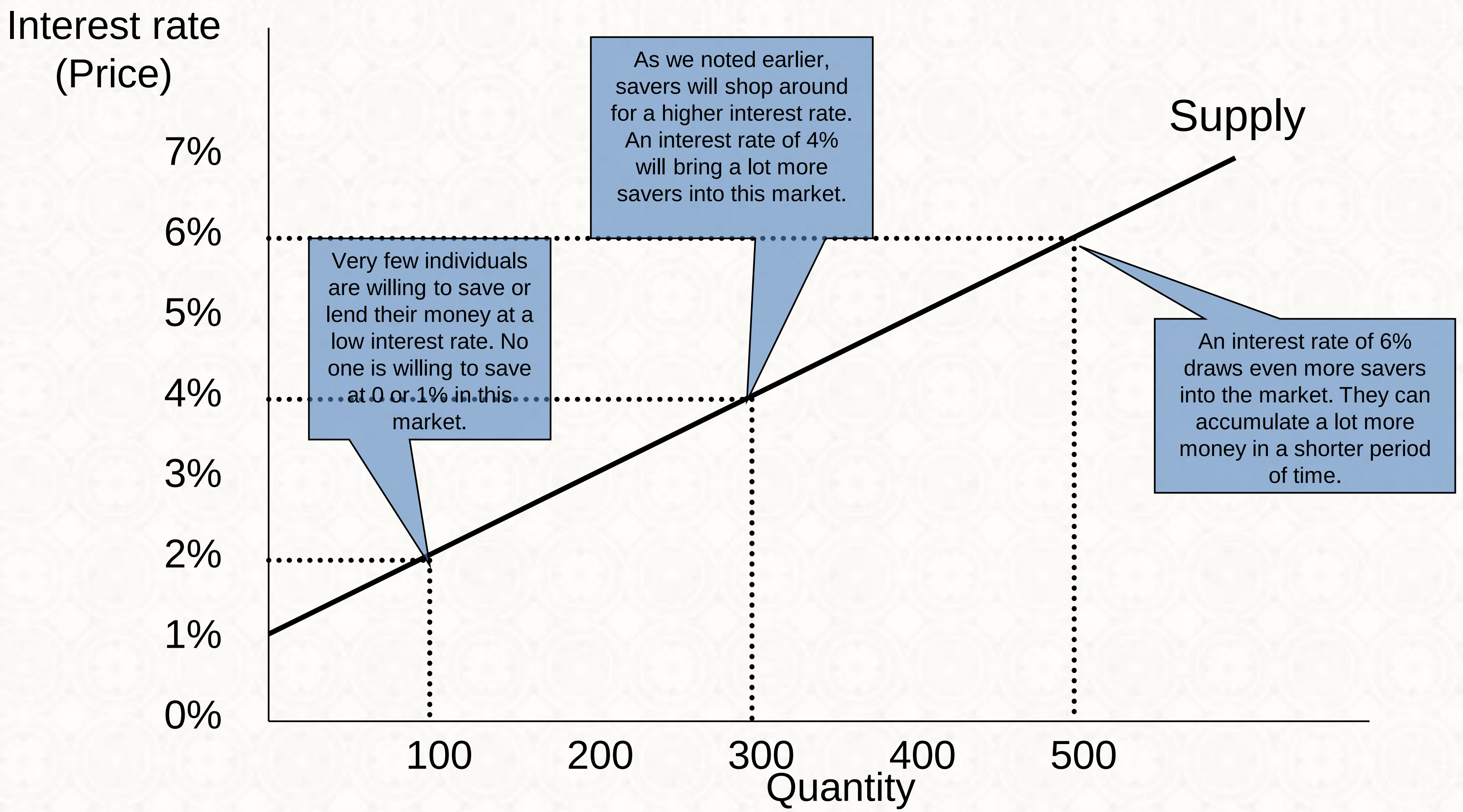
So which would you choose? Why?

Savings opportunities

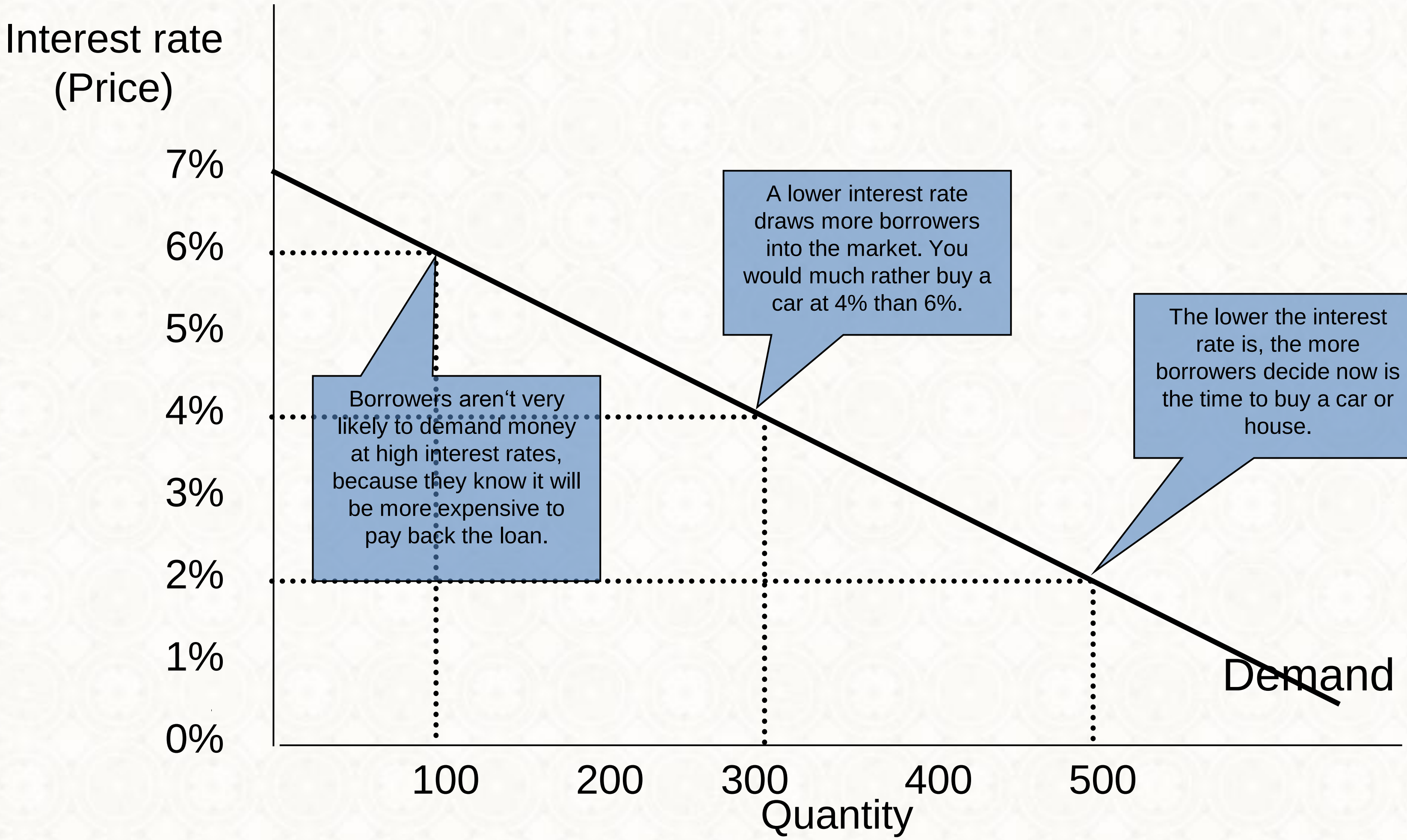
Financial Institution	Type of Savings	Total Savings in 10 Years
MIDTOWN BANK	Passbook account	$11,051
Century Credit Union	Passbook account	$10,253
Johnson Bank	5-year CD	$14,908
Top End Brokerage	10-year CD	$16,470

So which would you choose? Why?

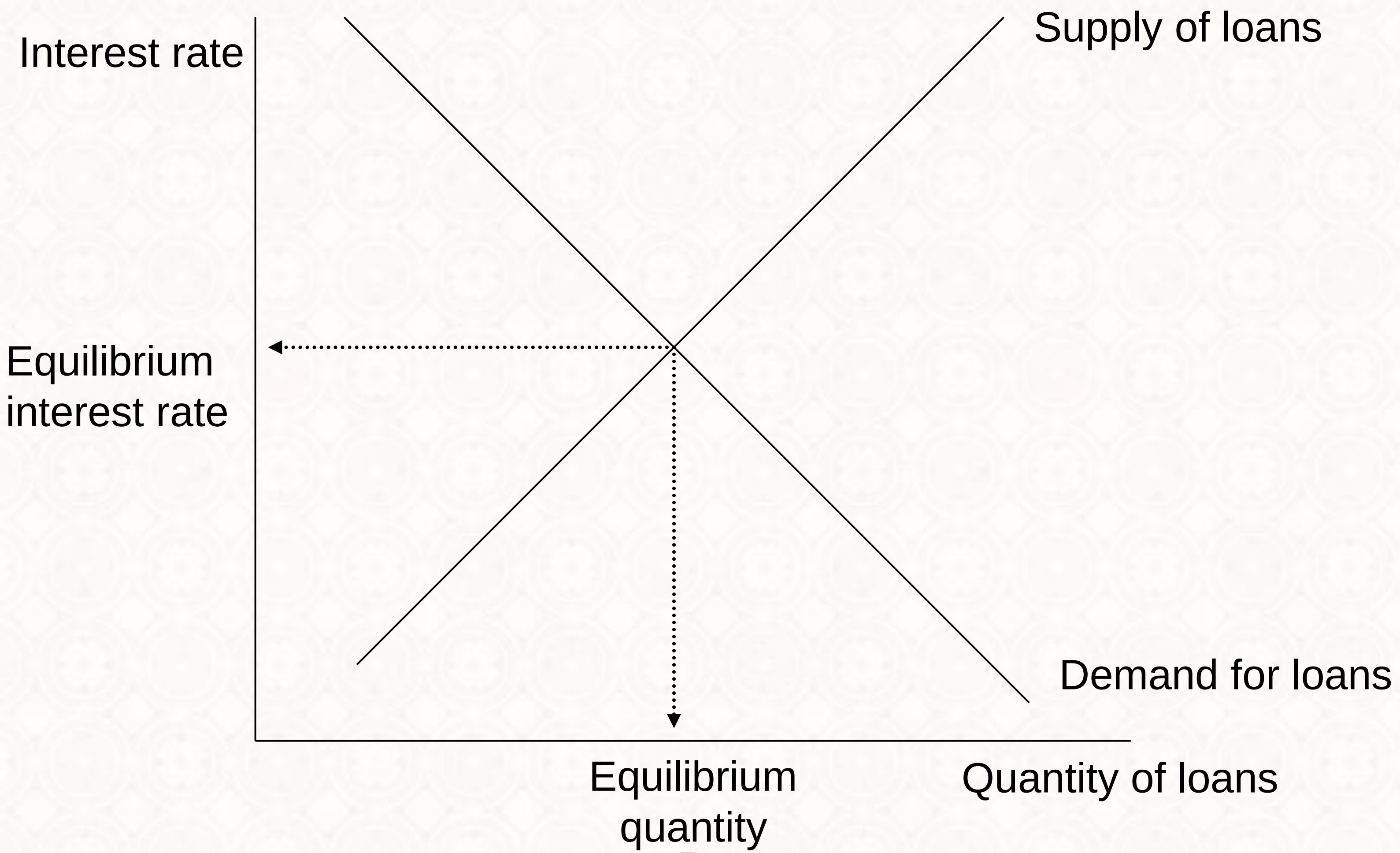
The market for loans: Supply



The market for loans: demand

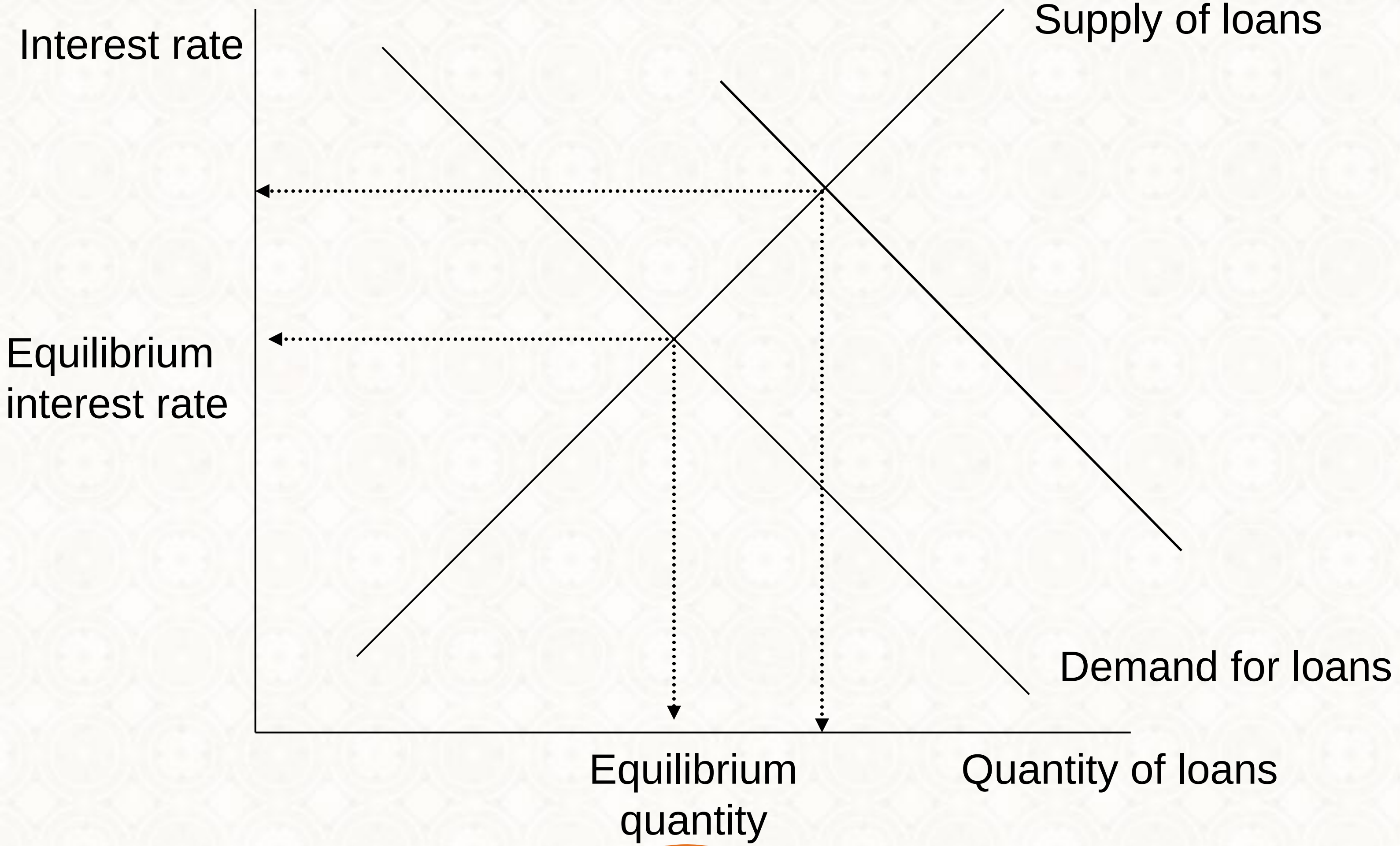


The market for loans



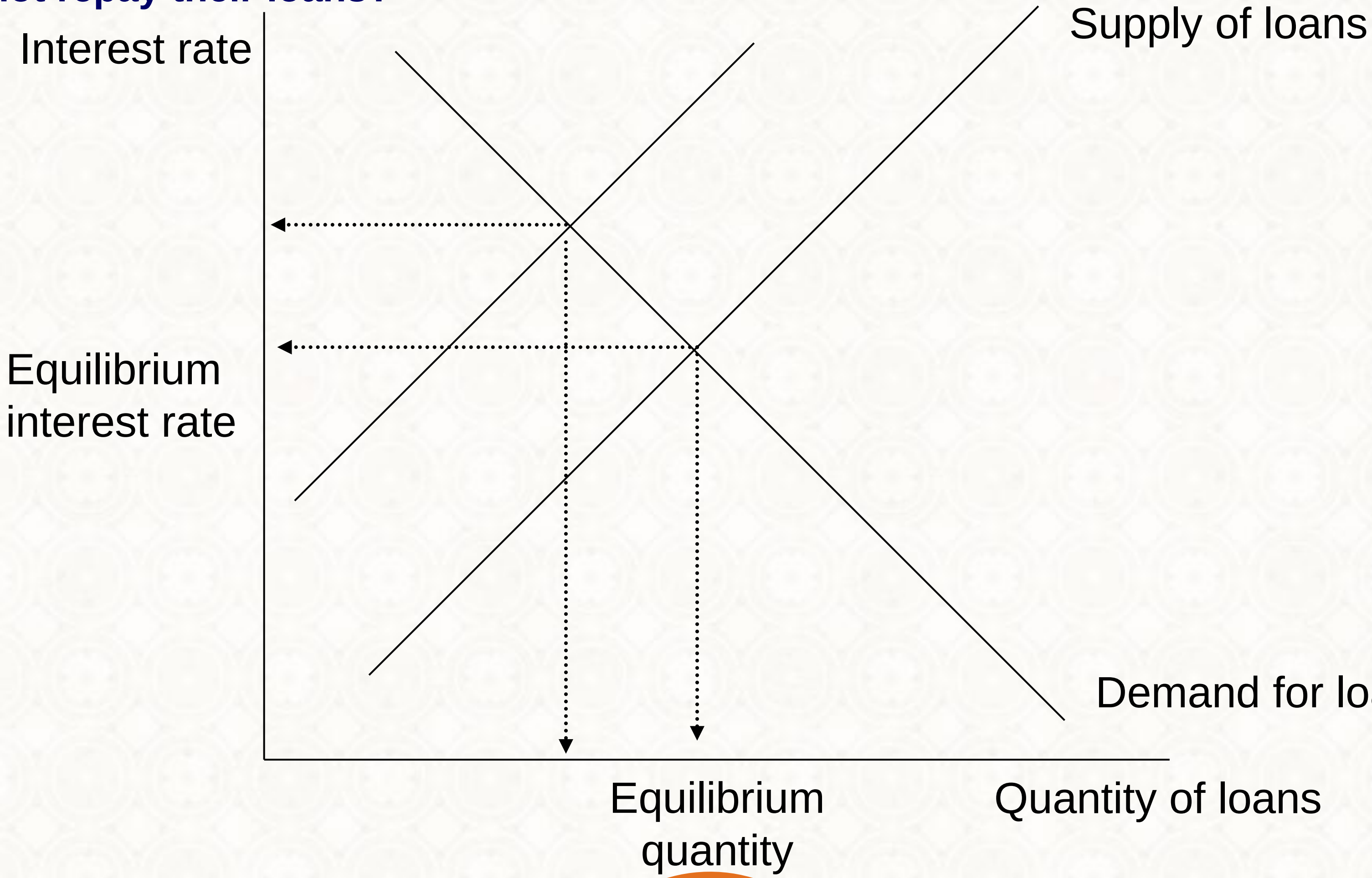
The market for loans

What will happen in the market for loans if more people want to borrow at the same time?

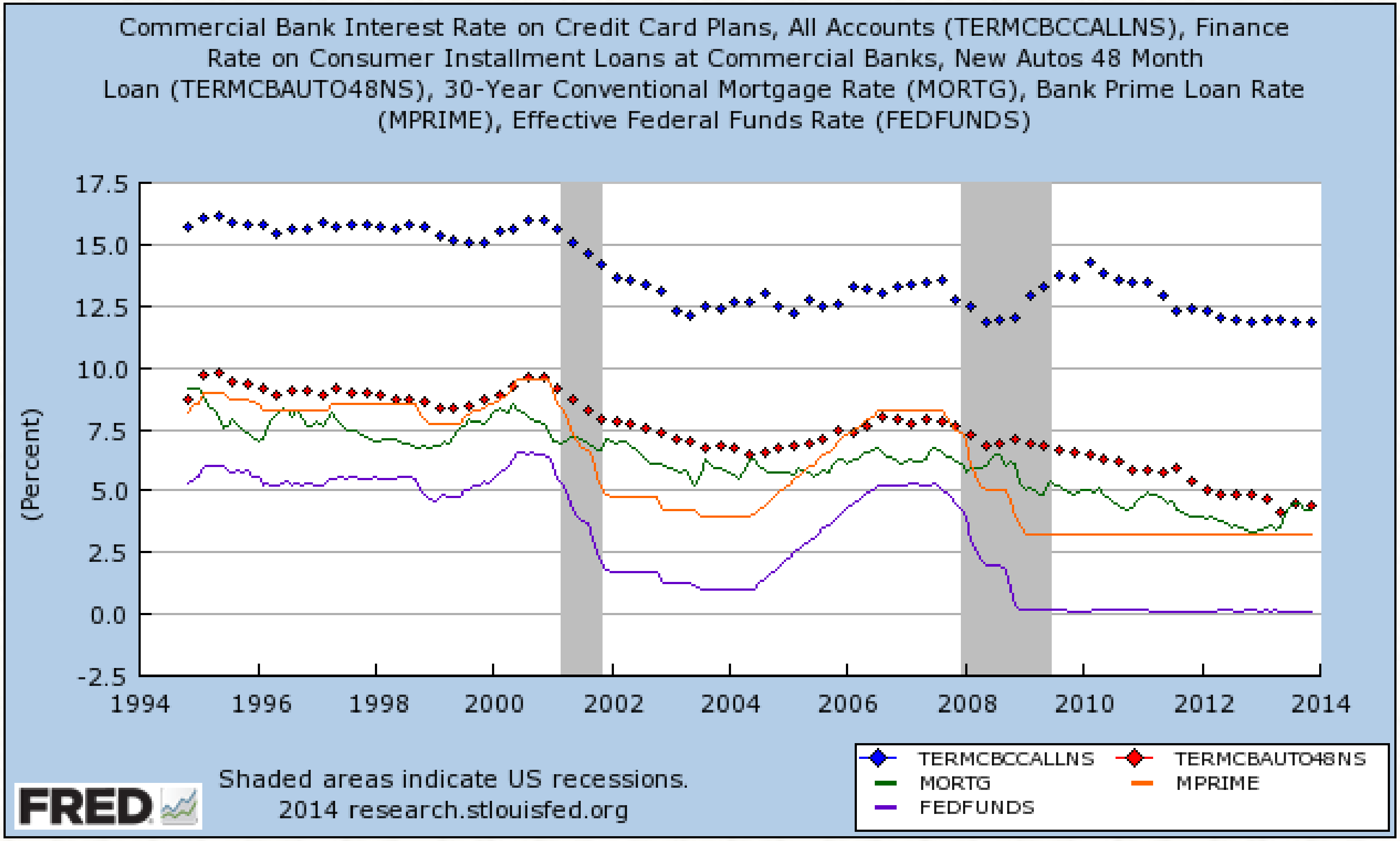


The market for loans

What will happen in the market for loans if lenders think more borrowers than normal may not repay their loans?



Which interest rate are we talking about?



Selected interest rates

Federal funds rate — The rate one bank charges another for an overnight loan

Prime rate — The rate banks charge their best customers

30-year fixed mortgage rate — The rate banks charge homebuyers seeking fixed, long-term loans

Automobile loan rate — The rate banks charge for loans used to buy automobiles

Credit card rate — The rate credit card companies charge those who use their cards for purchases

More on the federal funds rate

In the United States, the federal funds rate is the lowest rate. It is considered the "benchmark" interest rate, and is set by a market, but the market consists primarily of banks. When banks have a lot of money on hand – excess reserves – the federal funds rate is low. When bank reserves are short, the federal funds rate is high.

Federal funds rate continued

Why do you think the federal funds rate is so low, compared to other rates?

It is short-term, low-risk.

Why are mortgage rates higher than the federal funds rate?

Borrowers need the money for a long period of time, and there is higher risk of it not being repaid.

Why are mortgage rates lower than credit card rates?

Mortgages have the house as collateral, so lenders can take the house in cases of default.

Interest rates are linked.

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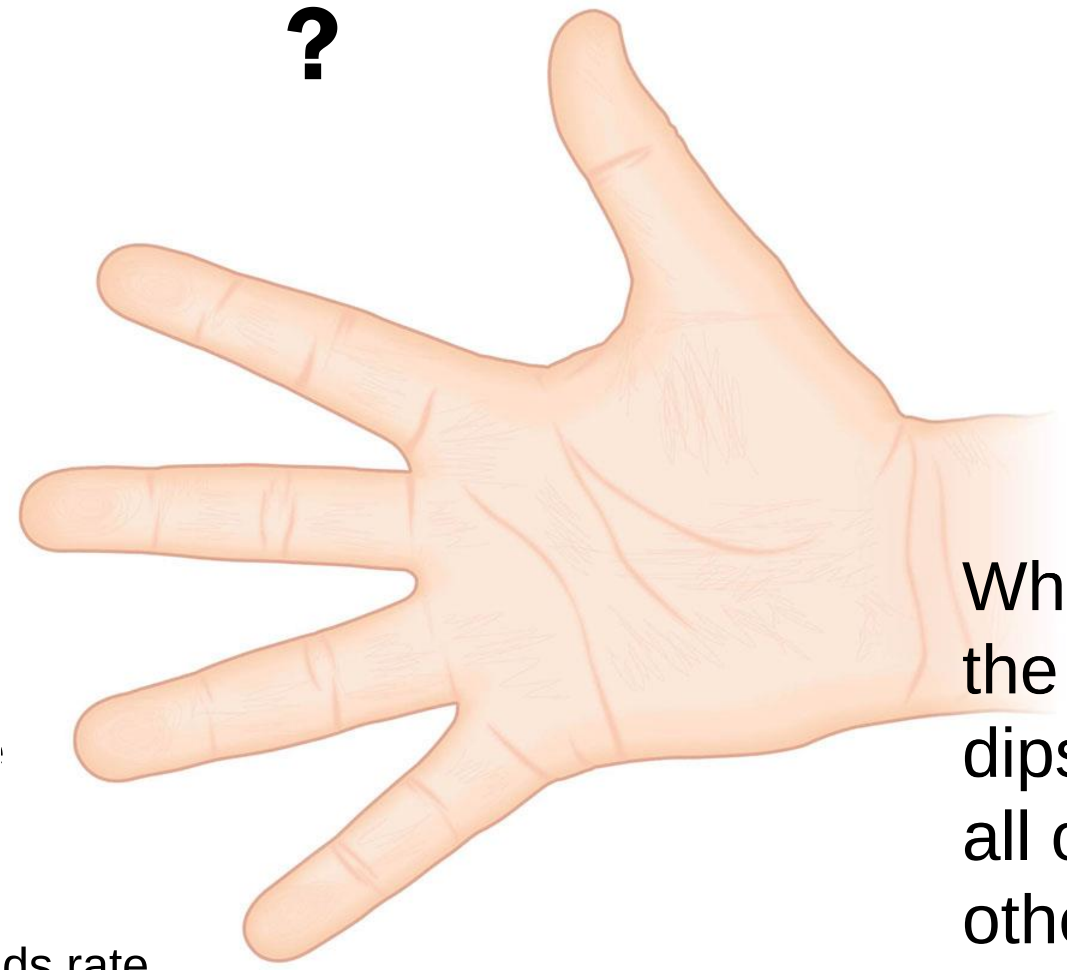

Federal funds rate

When the pinkie dips down, all of the other rates dip as well.

Factors that affect interest rates

- Loan size
- Maturity (length of time)
- Risk
- Collateral

Which rate would be higher?

Auto loan vs. mortgage loan?

Typically the automobile loan, because even though it is shorter in length, the risk is higher because some people do not repay the loans.

15-year vs. 30-year mortgage?

30-year, because the borrower keeps the money for a longer time.

Auto loan vs. credit card loan?

Credit card loan, because there is no collateral.

One-year vs. five-year CD?

Five-year, because the bank keeps the depositor's money for a longer time.

MIDTOWN BANK

Maggie – 4%

Juan – 8%

Sam – 12%

These three individuals went to Midtown Bank to borrow money. What could explain the difference in interest rates?

I need five volunteers who will be potential customers who want to borrow money from a bank.

You will be given information to review, then you will need to honestly answer any questions you are asked during the lending process.

The rest of you make up a bank with $100,000 to lend. You must decide whom you will lend to and what interest rate you will offer.

Brainstorm questions you will ask the potential customers, and make a list.

Whom will you lend to?

What questions will you ask prospective customers?

Whom will you lend to?

Suggested questions:

1. How much money do you want to borrow?
2. For what purpose? Will there be collateral?
3. What is the length of the loan?
4. Do you have a job?
5. How much do you earn?
6. What other loans are you still repaying?
7. Have you ever defaulted on a loan?

Potential borrowers

- James Shen
- Amanda Sykes
- Diana Starr
- Michael O'Neill
- Trevor Johnson

So which would you choose? Why?

Explain your decision to the borrowers.

Potential borrowers continued

Who would be most likely to get a loan?

James is probably the safest bet, because he has a high income, a down payment, and his home will serve as collateral.

Who would be charged the highest interest rate?

Diana and Michael have the least collateral and are probably the riskiest borrowers.

Which factors count against the borrowers?

Lower income, lack of collateral, having substantial outstanding loans, defaulting on past loans, and borrowing a large amount.

Interest rates and inflation

- If Midtown Bank expects inflation to be 3% over the next few years, it will add 3% to the interest rate it was already charging.
- Midtown Bank wants to earn 3% "real" interest on a loan, so it charges a loan customer:

  3% interest + 3% inflation premium = 6%

Nominal vs. real interest rates

- The interest rates discussed at the beginning of the lesson—car loans, mortgages, and credit cards—are all nominal rates. That means they include charges for expected inflation.
- To calculate real interest rates, economists subtract the inflation rate from nominal rates.