

CHAPTER

29

Monetary Policy

Chapter Goals

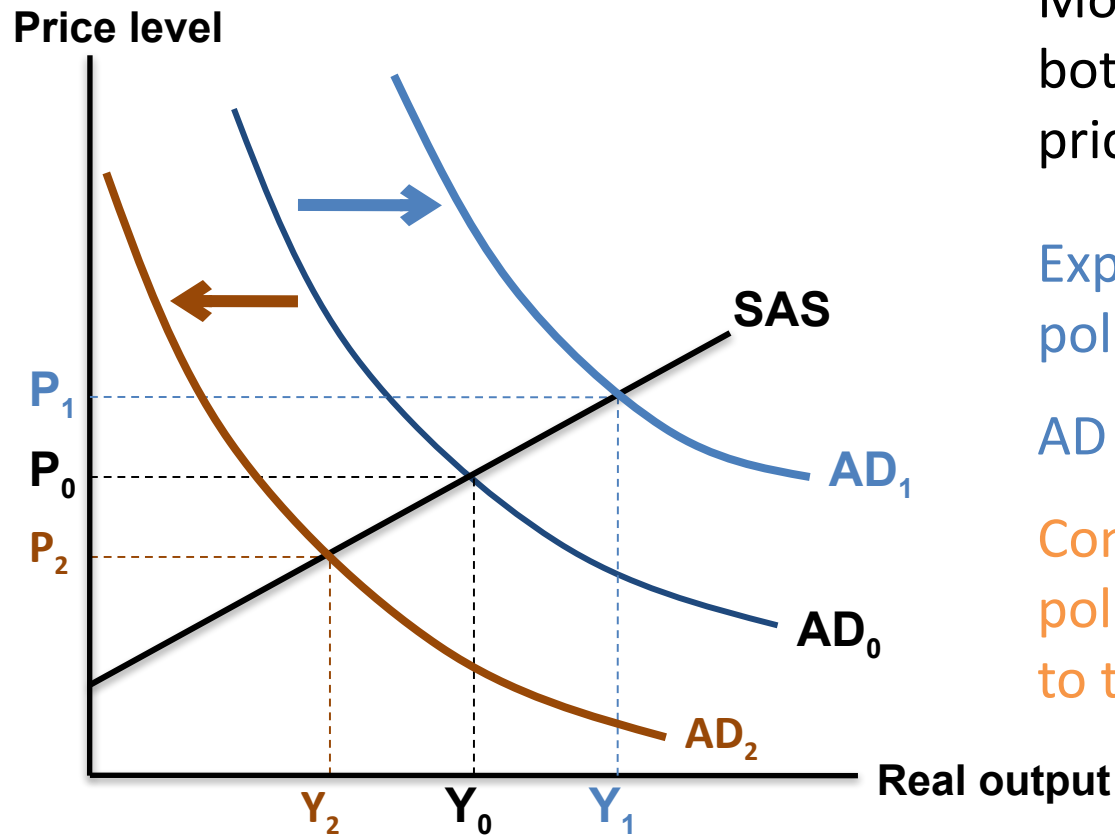
- Explain how monetary policy works in the *AS/AD* model.
- Discuss how monetary policy works in practice.
- Discuss the tools of conventional monetary policy.
- Discuss the complex nature of monetary policy and the importance of central bank credibility.

Monetary Policy

Monetary policy is a policy of influencing the economy through changes in the banking system's reserves that influence the money supply, credit availability, and interest rates in the economy.

- Fiscal policy is controlled by the government directly.
- Monetary policy is controlled by the U.S. central bank, the Federal Reserve Bank (the Fed).
- Monetary policy works through its influence on credit conditions and the interest rate in the economy.

How Monetary Policy Works in the Models

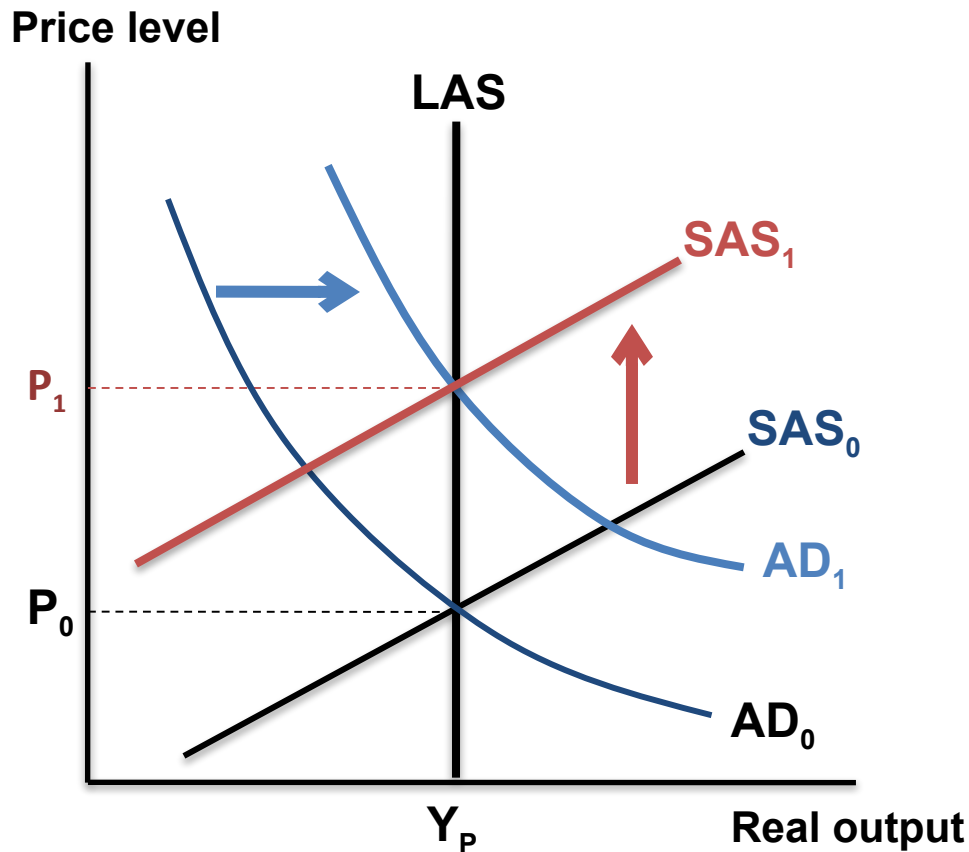


Monetary policy affects both real output and the price level.

Expansionary monetary policy shifts the AD curve to the right.

Contractionary monetary policy shifts the AD curve to the left.

How Monetary Policy Works in the Models



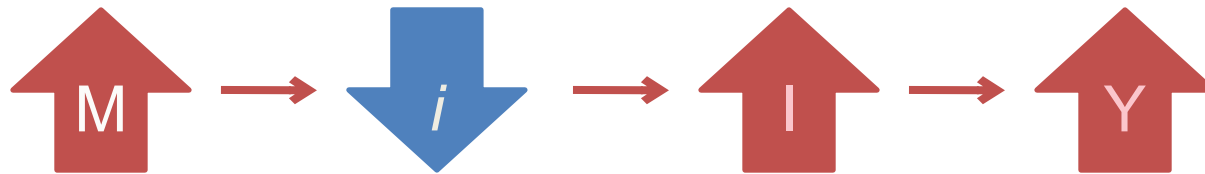
If the economy is at or above potential, expansionary monetary policy will cause input costs to rise.

Rising input costs will eventually shift the SAS curve up so that real output remains unchanged.

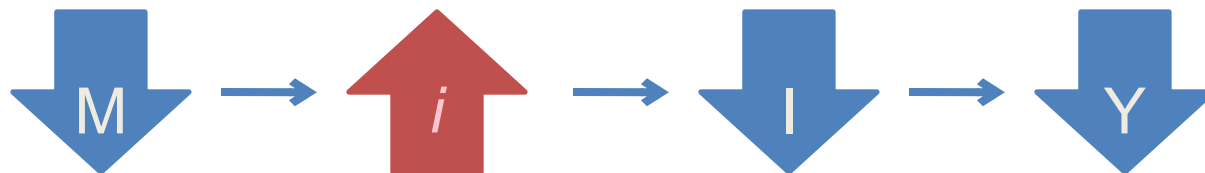
The only long-run effect of expansionary monetary policy when the economy is above potential is to increase the price level.

How Monetary Policy Works in the Models

Expansionary monetary policy is a policy that increases the money supply and decreases the interest; it tends to increase both investment and output.



Contractionary monetary policy is a policy that decreases the money supply and increases the interest rate; it tends to decrease both investment and output.



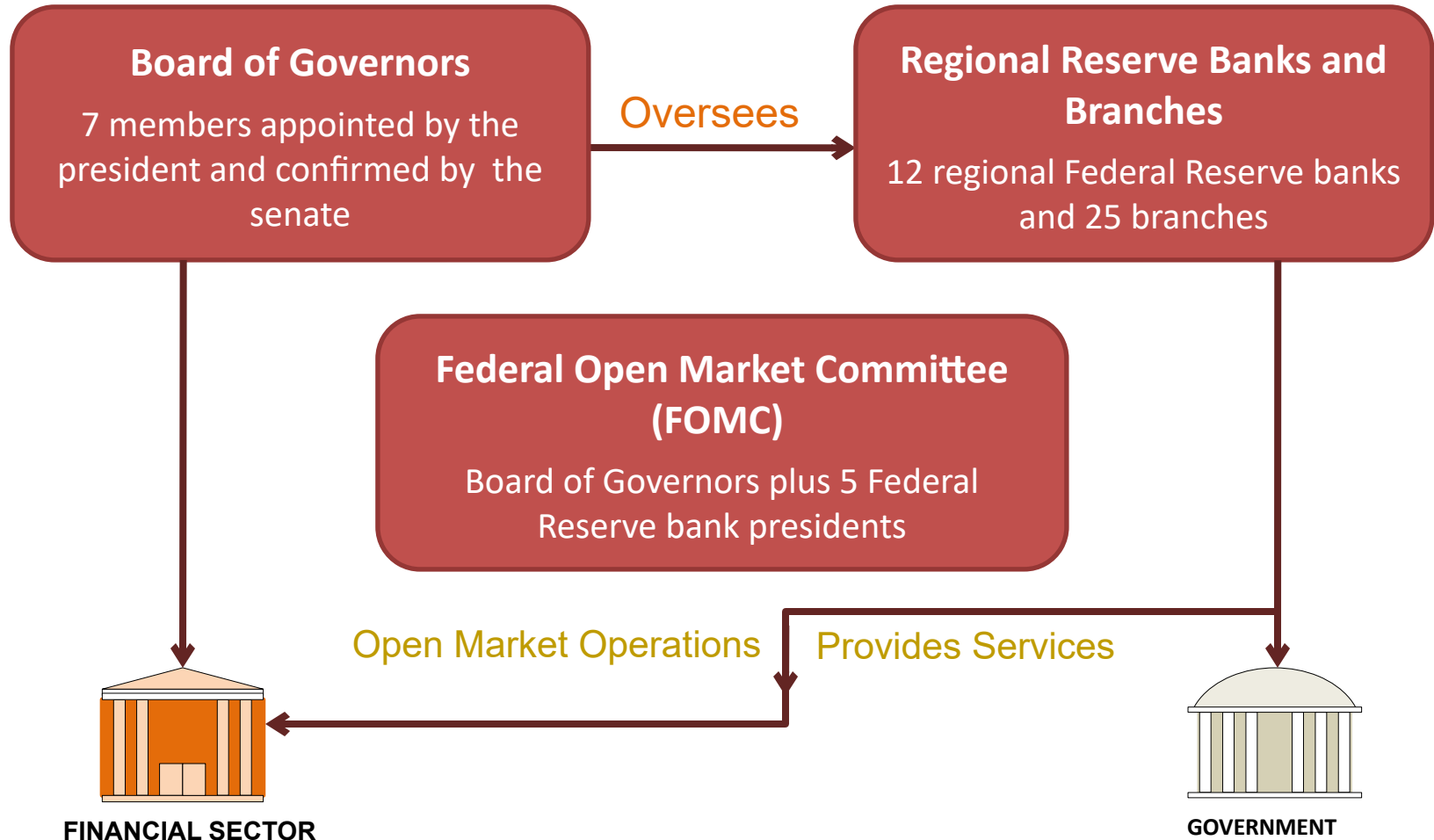
Monetary Policy and the Fed

A **central bank** is a type of banker's bank whose financial obligations underlie an economy's money supply.

- The central bank in the United States is the Fed.
- If commercial banks need to borrow money, they go to the central bank.
- If there's a financial panic and a run on banks, the central bank is there to make loans.

The ability to create money gives the central bank the power to control monetary policy.

Structure of the Fed

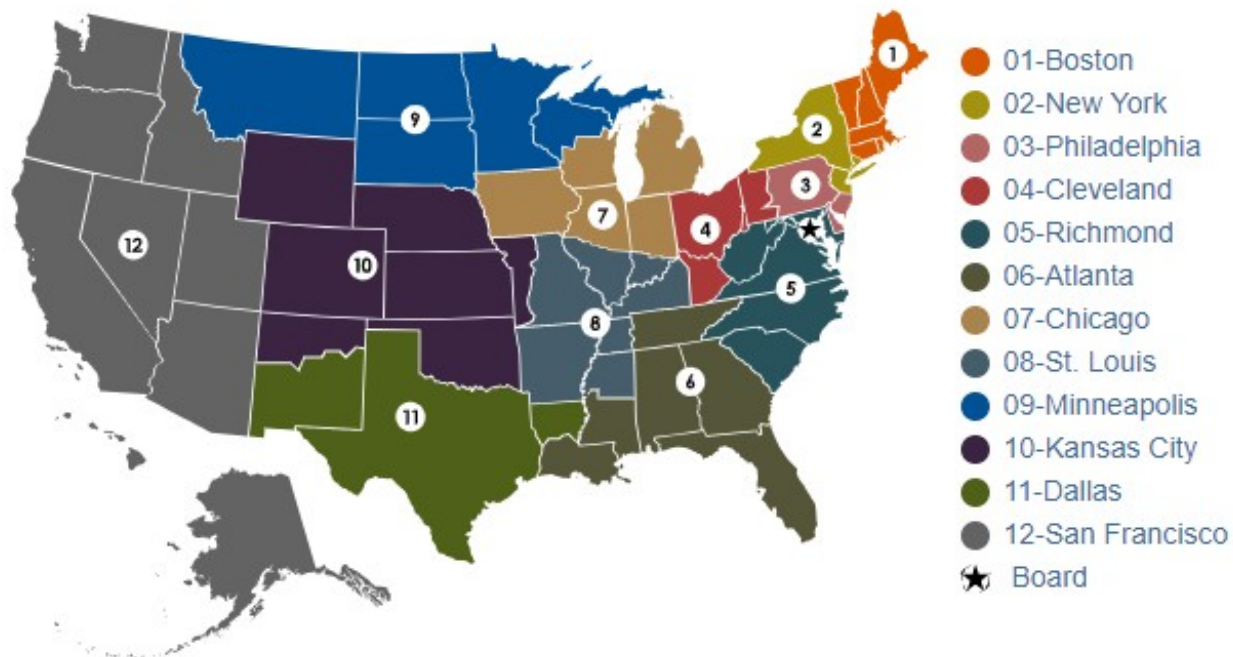


Structure of the Fed

Regional Reserve Banks and Branches: There are 12 regional Federal Reserve banks and 25 branches.

www.federalreserve.gov/aboutthefed/structure-federal-reserve-system.htm

Federal Reserve Banks



Duties of the Fed

- Conducts monetary policy (influencing the supply of money and credit in the economy).
- Supervises and regulates financial institutions.
- Lender of last resort to financial institutions.
- Provides banking services to the U.S. government.
- Issues coin and currency.
- Provides financial services to commercial banks, savings and loan associations, savings banks, and credit unions.

The Tools of Conventional Monetary Policy

The Fed influences the amount of money in the economy by controlling the monetary base.

- **Monetary base** is vault cash, deposits of the Fed, plus currency in circulation.

Monetary policy affects the amount of reserves in the banking system.

- **Reserves** are vault cash or deposits at the Fed.

Open Market Operations

Open market operations are the primary way in which the Fed changes the amount of reserves in the system.

- **Open market operations** are the Fed's buying and selling of Treasury bills and Treasury bonds.
- To expand the money supply, the Fed buys bonds.
- To contract the money supply, the Fed sells bonds.

Open Market Purchases

An **open market *purchase*** is expansionary monetary policy that tends to reduce interest rates and increase income.

- When the Fed buys bonds, it deposits money in its accounts at a bank.
- Bank reserves are increased, and when banks loan out the excess reserves, the money supply increases.

Open Market Sales

An **open market *sale*** is a contractionary monetary policy that tends to raise interest rates and lower income.

- When the Fed sells bonds, it receives checks drawn against banks.
- The bank's reserves are reduced and the money supply decreases.

Reserves and the Money Supply

The **reserve requirement** is the percentage the Fed sets as the minimum amount of reserves a bank must have.

There are other ways the Fed can impact the banks' reserves:

- The Fed can directly add to the banks' reserves.
- The Fed can change the interest rate it pays banks' on their reserves.
- The Fed can change the Fed funds rate, the rate of interest at which banks borrow the excess reserves of other banks.

Borrowing from the Fed and the Discount Rate

In case of a shortage of reserves, a bank can borrow reserves directly from the Fed.

The **discount rate** is the interest rate the Fed charges for those loans it makes to banks.

- So, an increase in the discount rate makes it more expensive to borrow from the Fed and may decrease the money supply.
- A decrease in the discount rate makes it less expensive to borrow from the Fed and may increase the money supply.

The Fed Funds Market

Banks with surplus reserves loan these reserves to banks with a shortage in reserves.

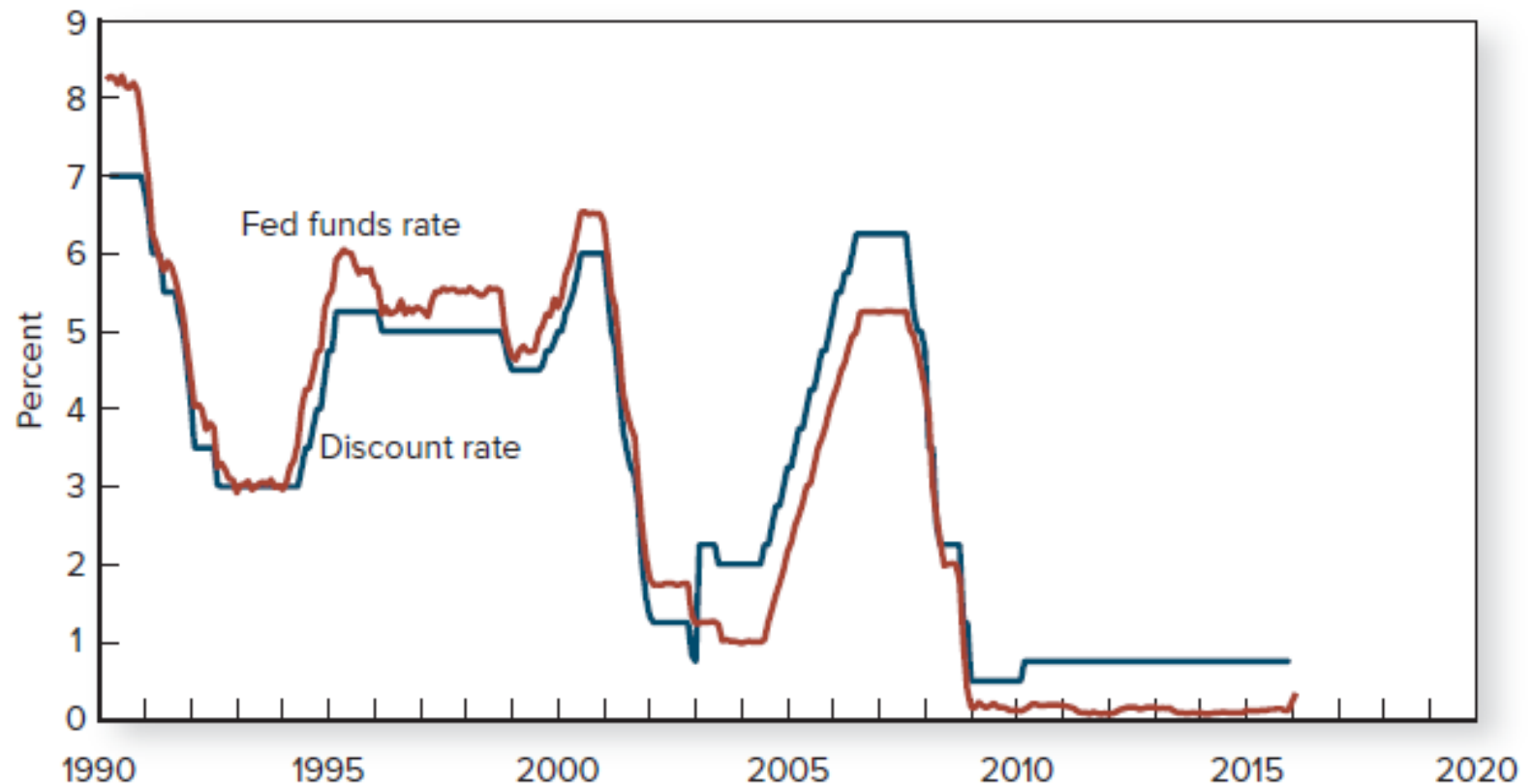
- **Fed funds** are loans of excess reserves banks make to each other.
- **Fed funds rate** is the interest rate banks charge each other for Fed funds.

By selling bonds, the Fed decreases reserves, causing the Fed funds rate to increase.

By buying bonds, the Fed increases reserves, causing the Fed funds rate to decrease.

The Fed Funds Rate and the Discount Rate since 1990

The Federal Reserve Bank follows expansionary or contractionary monetary policy by targeting a lower or higher Fed funds rate.



Offensive and Defensive Actions

Defensive actions are designed to maintain the current monetary policy.

- The Fed buys bonds during emergencies.
- Reserves would otherwise decrease because individuals and businesses don't get to the bank with their cash.

Offensive actions are designed to have expansionary or contractionary effects on the economy.

The Fed Funds Rate as an Operating Target

Monetary policy affects interest rates.

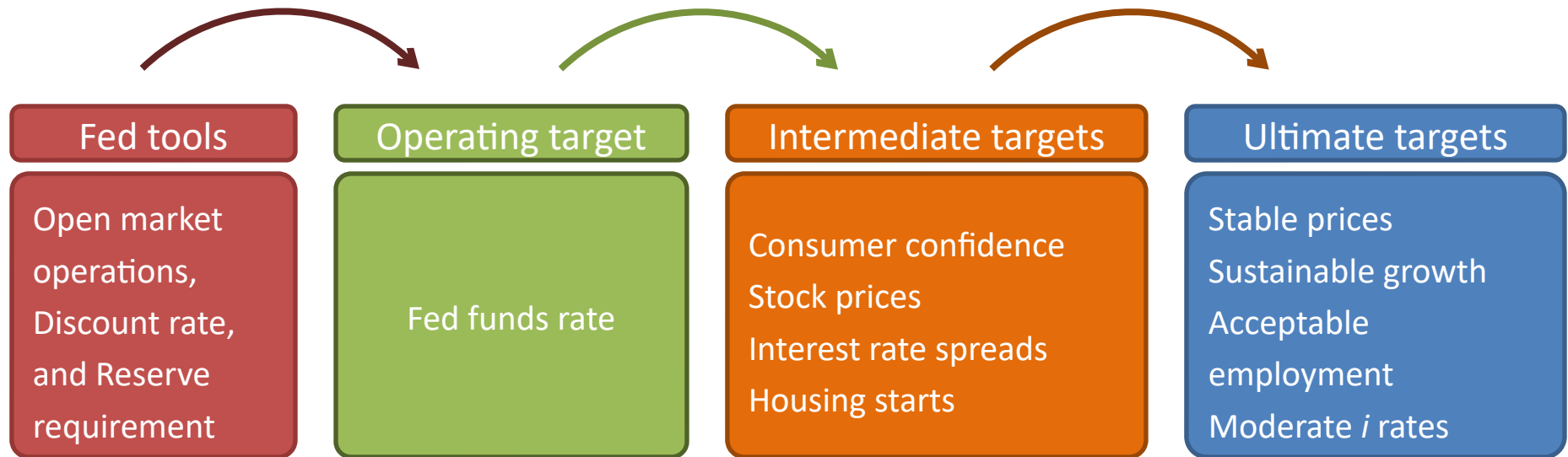
The Fed looks at the Federal funds rate and other targets to determine whether monetary policy is tight or loose.

If the Fed funds rate is above the Fed's target range, it buys bonds to increase reserves and lower the Fed funds rate.

If the Fed funds rate is below the Fed's target range, it sells bonds to decrease reserves and raise the Fed funds rate.

The Complex Nature of Monetary Policy

While the Fed focuses on the Fed funds rate as its operating target, it also has its eye on its ultimate targets: *stable prices, acceptable employment, sustainable growth, and moderate long-term interest rates.*



The Taylor Rule

Set the funds rate at 2% plus current inflation if the economy is at desired output and desired inflation. If the inflation rate is higher than desired, increase the Fed funds rate by 0.5 times the difference between desired and actual inflation. If output is higher than desired, increase the Fed funds rate by 0.5 times the percentage deviation.

$$\begin{aligned}\text{Fed funds rate} = & 2\% + \text{Current inflation} \\ & + 0.5 \times (\text{actual inflation less desired inflation}) \\ & + 0.5 \times (\text{percent deviation of aggregate output from} \\ & \text{potential})\end{aligned}$$

Limits to the Fed's Control of the Interest Rate

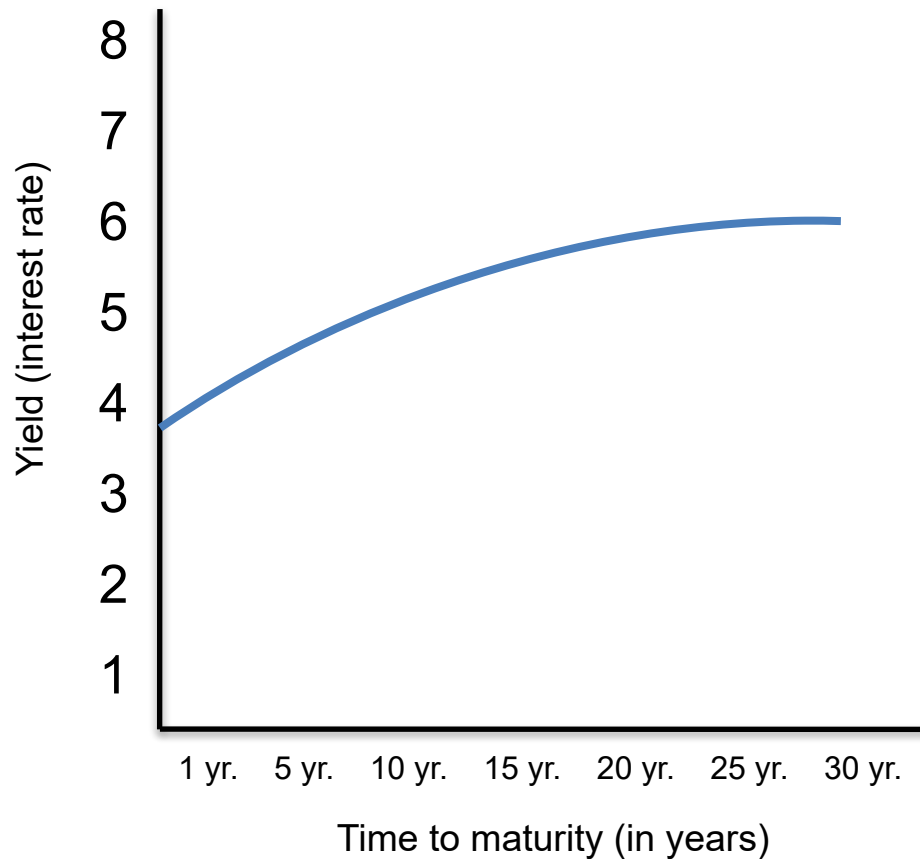
The Fed may not be able to shift the entire yield curve up or down, but may make it steeper, flatter or inverted.

A **yield curve** is a curve that shows the relationship between interest rates and bonds' time to maturity.

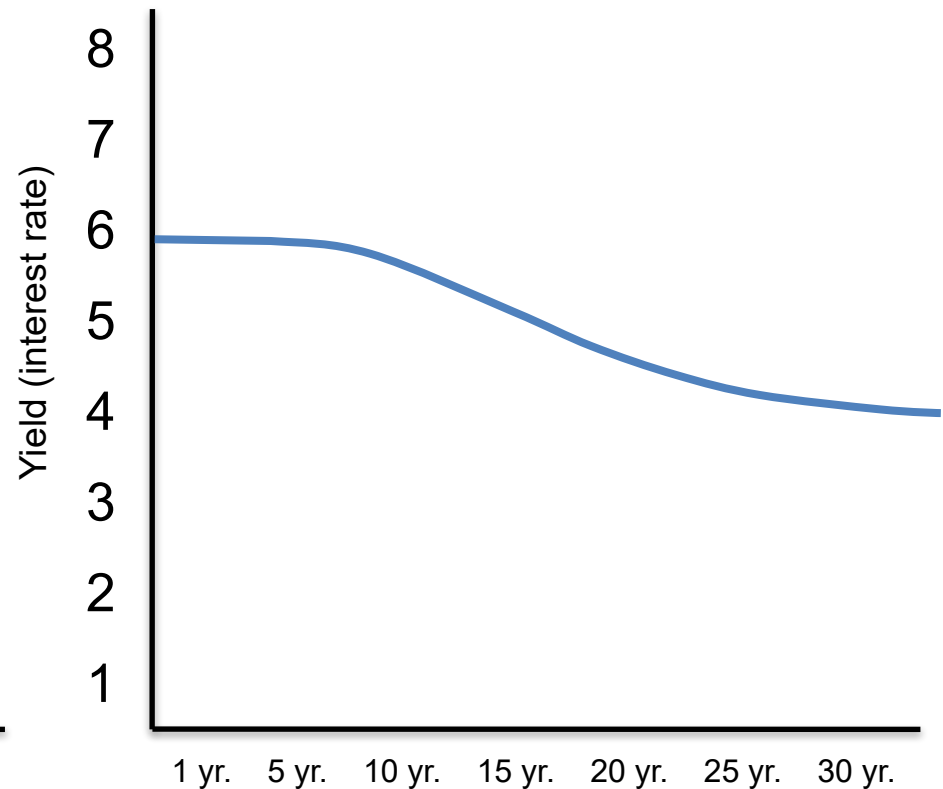
An **inverted yield curve** is one in which the short-term rate is higher than the long-term rate.

As financial markets become more liquid, and technological changes occur, the Fed's ability to control the long-term rate through conventional monetary policy lessens.

The Yield Curve



Yield Curve



Inverted Yield Curve

Maintaining Policy Credibility

Policy makers are very concerned about establishing policy credibility because they believe that it is necessary to prevent inflationary expectations from becoming built into the economy.

Nominal interest rates are the rates you actually see and pay.

Real interest rates are nominal interest rates adjusted for expected inflation.

$$\text{Real interest rate} = \text{Nominal interest rate} - \text{Expected inflation}$$

Maintaining Policy Credibility

The real interest rate cannot be observed since it depends on expected inflation, which cannot be directly observed.

Making a distinction between nominal and real rates adds another uncertainty to the effect of monetary policy.

If expansionary policy leads to expectations of increased inflation, nominal rates will increase and leave real rates unchanged.

Monetary Regimes

Most economists believe that a monetary regime, not a monetary policy, is the best approach to policy.

- A **monetary regime** is a predetermined statement of the policy that will be followed in various situations.
- A monetary policy is a response to events chosen without a predetermined framework.

Monetary regimes are now favored because rules can help generate market expectations.

An explicit monetary regime has problems because special circumstances arise where it makes sense to deviate from the regime.

Conventional Wisdom about Conventional Monetary Policy

Expansionary	Contractionary
Advantages: 1. Interest rates may fall. 2. Economy may grow. 3. Decreases unemployment.	Advantages: 1. Helps fight inflation. 2. Trade deficit may decrease.
Disadvantages: 1. Inflation may worsen. 2. Trade deficit may increase.	Disadvantages: 1. Risks recession. 2. Increases unemployment. 3. Slows growth. 4. May help cause short-run political problems. 5. Interest

Chapter Summary (1 of 3)

Monetary policy is the policy of influencing the economy through changes in the banking system's reserves that affect the money supply.

In the *AS/AD* model, contractionary monetary policy works as follows:

$$\downarrow M \rightarrow I \uparrow \rightarrow I \downarrow \rightarrow Y \downarrow$$

Expansionary monetary policy works as follows:

$$\uparrow M \rightarrow I \downarrow \rightarrow I \uparrow \rightarrow Y \uparrow$$

Chapter Summary (2 of 3)

The Federal Open Market Committee (FOMC) makes the actual decisions about monetary policy.

The Fed is a central bank; it conducts monetary policy for the United States and regulates financial institutions.

The Fed changes the money supply through open market operations.

The federal funds rate is the rate at which one bank lends reserves to another bank.

The Fed's direct control is on short-term interest rates.

Chapter Summary (3 of 3)

A change in reserves changes the money supply by the change in reserves times the money multiplier.

The Taylor rule: Set the Fed funds rate at 2 plus current inflation plus one-half the difference between actual and desired inflation plus one-half the percent difference between actual and potential output.

Nominal interest rates are the interest rates we see and pay. Real interest rates are nominal interest rates adjusted for expected inflation:

$$\text{Real interest rate} = \text{Nominal interest rate} - \text{Expected inflation}$$