Chapter 14

The Federal Reserve System Functions and Tools

The Federal Reserve

- A **central bank** is an institution that oversees and regulates the banking system and controls the monetary base.
- The **Federal Reserve** is a central bank—an institution that oversees and regulates the banking system, and controls the monetary base.
- The Federal Reserve system consists of the Board of Governors in Washington, D.C., plus regional Federal Reserve Banks, each serving its district; of the 12 Federal Reserve districts:

The Tools of Monetary Policy

- **The most important job of the Fed is to control the rate of growth of the money supply**
- **This effort focuses on the reserves held by financial institutions**
  - **The most important policy tool to do this is open-market operations**

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How Open-Market Operations Work

- **Open-Market operations are the buying and selling of U.S. government securities**
  - **U.S. government securities are Treasury bills, notes, certificates, and bonds**
  - **The Fed buys and sells securities that have already been marketed by the Treasury**
    - **The total value of all outstanding U.S. government securities is more than $4.0 trillion. This is our national debt**
  - **What open market operations consist of, then, is the buying and selling of chunks of the national debt**

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How the Fed Increases the Money Supply

The FED buys U. S. Government Securities

The Fed writes a check for, say, $100 million (this is money created out of nothing)

Securities Firm ✓

RD + $100	DD + $100
RR - 10	
ER + 90	

The multiplier would be 10
10 X 90 million = 900 million X .60 = approximate increase in the money supply of 540 million over a period of time

Assume 10% RR

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$$IR = \frac{\text{Interest Paid}}{\text{Price of Bond}}$$

If the Fed goes on a buying spree, it will quickly drive up the prices of U.S. government securities

Assume 10% RR

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IR = $80 / $1000

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RD + $100	DD + $100
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IR = $80 / $1000 = 8%

If the Fed goes on a buying spree, it will quickly drive up the prices of U.S. government securities

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IR = $80 / $1000 = 8%

IR = $80 / $1200 = 6.67%

Suppose this pushed the price of the bond up to $1200?

Assume 10% RR

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The FED buys U. S. Government Securities

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Securities Firm

RD + $100	DD + $100
RR - 10	
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IR = $80 / $1000 = 8%

IR = $80 / $1200 = 6.67%

When the Fed goes into the open market to buy securities, it bids up their price and lowers their interest rate

Assume 10% RR

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How the Fed Decreases the Money Supply

The FED sells U. S. Government Securities

The Security firm writes a check for, say, $100 million to the Fed (this check is, in effect, destroyed)

Securities Firm

RD - $100	DD - $100

The money supply decreases by approximately $540 million over time

When the Fed goes into the open market to sell securities, bond, and notes prices fall and interest rates climb

Assume 10% RR

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How the Fed Decreases the Money Supply

The FED sells U. S. Government Securities

The Security firm writes a check for, say, $100 million to the Fed (this check is, in effect, destroyed)

Securities Firm

RD - $100	DD - $100

IR = $80 / $1000 = 8%

IR = $80 / $1200 = 6.67%

The money decreases by approximately $540 million over time

When the Fed goes into the open market to sell securities, bond prices fall and interest rates climb

Assume 10% RR

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The Federal Open-Market Committee (FOMC)

- Open-market operations are conducted by the Federal Open-Market Committee (FOMC)
  - This committee consist of 12 people
    - Eight permanent members – the board of Governors and the president of the New York Federal Reserve District Bank
    - The other four are presidents of the other 11 Federal Reserve District Banks
      - They serve on a rotating basis

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The Federal Open-Market Committee (FOMC)

- The FOMC meets about once every six weeks to decide what policy to follow
  - To fight recessions, the FOMC buys securities
    - This increases the rate of growth of the money supply
  - To fight inflation, the FOMC sells securities
    - This decreases the rate of growth of the money supply

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Borrowing Reserve Deposits

- The *discount rate* is the interest rate paid by member banks when they borrow reserve deposits (RD) at their Federal Reserve District Bank
- The *federal funds rate* is the interest rate banks charge each other for borrowing reserve deposits (RD) from each other
  - This is higher than the *discount rate*
- Banks borrow to maintain their required reserves (RR)
  - Banks tend to borrow reserve deposits from each other because they may not like to call attention to the fact they are having to borrow reserve deposits

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Changing Reserve Requirements

- The Federal Reserve Board has the power to change reserve requirements within the legal limits of 8 and 14% for checkable deposits
  - Changing reserve requirements is the ultimate weapon and is rarely used

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Changing Reserve Requirements

- To fight inflation, before the Board would take the drastic step of raising reserve requirements
  - The District Banks would raise the *discount rate*
  - The FOMC will be actively selling securities
  - Credit will be getting tighter
  - The chairman will be publicly warning that the banks are advancing too many loans

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Changing Reserve Requirements

- If the money supply is still growing too rapidly – the Fed reaches for its biggest stick and raises reserve requirements
  - This weapon is so rarely used because it is simply too powerful
  - If the reserve requirement on demand deposits were raised by just one-half of 1%, the nation's banks and thrift institutions would have to come up with nearly $4 billion in reserves
    - This would drastically reduce the nation's money supply

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Summary: The Tools of Monetary Policy

- **To fight recession, the Fed will**
  - **Lower the discount rate**
  - **Buy securities on the open market**
  - **Lower reserve requirements**
    - **This would be done only as a last resort**

An Important Slide

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Summary: The Tools of Monetary Policy

- **To fight inflation, the Fed will**
  - **Raise the discount rate**
  - **Sell securities on the open market**
  - **Raise reserve requirements**
    - **This would be done only as a last resort**

An Important Slide

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Tools of Monetary Policy

- Changing the reserve requirement
- Changing the discount rate
- Executing open market operations (buying and selling government securities) and thereby affecting the Federal funds rate

The Reserve Requirement and the Money Supply

- The Fed can increase or decrease the money supply by changing the reserve requirement.

The Reserve Requirement and the Money Supply*

- If the Fed decreases the reserve requirement, it expands the money supply.
  - Banks have more money to lend out.
  - The money multiplier increases.

The Reserve Requirement and the Money Supply*

- If the Fed increases the reserve requirement, it contracts the money supply.
  - Banks have less money to lend out.
  - The money multiplier decreases.

Changing the Discount Rate

- A bank can borrow reserves directly from the Fed, if it experiences a shortage of reserves.
- The ***discount rate*** is the rate of interest the Fed charges for those loans it makes to banks.

Changing the Discount Rate

- By changing the discount rate, the Fed can expand or contract the level of bank reserves and the money supply.

Changing the Discount Rate*

- An increase in the discount rate makes it more expensive for banks to borrow from the Fed.
- A decrease in the discount rate makes it less expensive for banks to borrow from the Fed.

What the Fed does: Their Tools!

- The **federal funds market** allows banks that fall short of the reserve requirement to borrow funds from banks with excess reserves.
- The **federal funds rate** is the interest rate determined in the federal funds market.
- The **discount rate** is the rate of interest the Fed charges on loans to banks.

Discount Rate v. Fed Fund Rate

- In practice, the discount rate is generally a slightly higher than other rates banks would have to pay to borrow reserves.

Open Market Operation

Open-market operations by the Fed are the **principal tool** of monetary policy: the Fed can increase or reduce the monetary base by buying government debt from banks or selling government debt to banks.

The Federal Reserve's Assets and Liabilities:

Assets	Liabilities
Government debt (Treasury bills)	Monetary base (Currency in circulation + bank reserves)

Executing Open Market Operations

- For day-to-day operations the Fed uses a third tool, open market operations.
  - ***Open market operations*** are the Fed's buying and selling of government securities.

Executing Open Market Operations**

- To expand money supply, the Fed buys bonds.
- To contract money supply, the Fed sells bonds.

An Important Slide

An Open Market Purchase

- When the Fed buys bonds, it deposits the money in federal government accounts at a bank.
  - Bank cash reserves rise, encouraging banks to lend out the excess.
  - The money supply rises.

An Open Market Sale

- When the Fed sells bonds,
- In return for the bond, the Fed receives a check drawn against a bank.
- The bank's reserve assets are reduced and money supply falls.

The 2008 Financial crisis

- The Federal Reserve has been buying all sort of financial assets to fight the crisis.
- In the past they would only buy Federal Government debt.
- Today they have been buying Mortgage backed securities too.