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

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

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

<table>
<thead>
<tr>
<th>RD + $100</th>
<th>DD + $100</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR - 10</td>
<td>ER + 90</td>
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</table>

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

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

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\text{RR} - 10 & \\
\text{ER} + 90 &
\end{align*} \]

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\[ \text{Assume } 10\% \ \text{RR} \]

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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

\[ \begin{align*}
\text{RD} - 100 & \quad \text{DD} - 100 \\
\text{IR} & = \frac{80}{1000} = 8\% \\
\text{IR} & = \frac{80}{1200} = 6.67\%
\end{align*} \]

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

\[ \text{Assume } 10\% \ \text{RR} \]

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The Federal Open-Market Committee (FOMC)

- Open-market operations are conducted by the Federal Open-Market Committee (FOMC)
  - This committee consists 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

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

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

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

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

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
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

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.

• 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*

- 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.

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.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government debt (Treasury bills)</td>
<td>Monetary base (Currency in circulation + bank reserves)</td>
</tr>
</tbody>
</table>
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 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.