Chapter 12

The Federal Reserve System and Monetary Policy

A Glimpse at History

In colonial times, before banks printed their own bank notes, our money was simply a collection of foreign currencies.

During the American Revolution (around 1775) the first U.S currency came into being.

The first real U.S. money was the Continental Note.

- Since Congress had no taxing authority, it printed Continental Notes to finance the Revolution.
- Excessive printing rendered the Continental Note nearly useless.

To bring some control over the money supply, Thomas Jefferson proposed a new money based on the Spanish dollar, metrically divisible and backed by gold and silver.

In 1786 the Continental Congress accepted the recommendation and the dollar became the country’s unit of account.

State-chartered bank

- A commercial bank that receives its charter or license to function from a state government and is subject to the laws of that state.

In 1791, the Bank of North America the, chartered by the state of Pennsylvania, was formed.

EXHIBIT 1

GROWTH OF STATE BANKS: 1784–1860 ($ MILLIONS)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER OF BANKS</th>
<th>CAPITAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1784</td>
<td>3</td>
<td>$ 2.1</td>
</tr>
<tr>
<td>1801</td>
<td>31</td>
<td>22.4</td>
</tr>
<tr>
<td>1805</td>
<td>75</td>
<td>40.4</td>
</tr>
<tr>
<td>1811</td>
<td>88</td>
<td>42.9</td>
</tr>
<tr>
<td>1818</td>
<td>246</td>
<td>89.8</td>
</tr>
<tr>
<td>1829</td>
<td>329</td>
<td>110.1</td>
</tr>
<tr>
<td>1839</td>
<td>840</td>
<td>327.1</td>
</tr>
<tr>
<td>1859</td>
<td>1,476</td>
<td>402.9</td>
</tr>
</tbody>
</table>

Exhibit 1: Growth of State Banks: 1784-1860 ($ millions)

What are some reasons for the rapid growth of state banks?

• The money supply was inadequate to finance the growing number of farms, factories, and businesses.

A Glimpse at History

Alexander Hamilton proposed a nationally-chartered central bank that would exercise control over the money supply and extend credit to the federal government.

A Glimpse at History

Congress accepted Hamilton’s plan and created the First Bank of the United States in 1791.

• This central bank dampened the inclination of state-chartered banks to overissue notes by demanding that the notes be redeemed in silver and gold.

Nationally chartered bank

• A commercial bank that receives its charter from the comptroller of the currency and is subject to federal law as well as the laws of the state in which it operates.

A Glimpse at History

When the 20-year charter of the First Bank of the U.S. expired in 1811, advocates of states’ rights in Congress prevailed, and the charter was not renewed.

A Glimpse at History

In 1816 Congress created the Second Bank of the U.S., which again stabilized state banking practices. As with the First Bank, however, political pressure led to the failure of Second Bank of the U.S. in the 1830s.
A Glimpse at History

During the Civil War, Congress passed the National Bank Act, which created a national banking system and the office of the comptroller of the currency, which chartered national banks.

National banks had to buy Treasury Bonds equal to one-third of their capital, and could issue notes only in proportion to their Treasury bond holdings.

A Glimpse at History

In 1907 the highly respected Knickerbocker Trust Company collapsed. This spurred a run on banks, a credit crisis, and a recession. Congress responded with the Federal Reserve Act of 1913.

The Federal Reserve Act of 1913 created the Federal Reserve System (the “Fed”). The Fed has 12 regional district banks that serve as the region’s central bank.

The Federal Reserve System

Does the president of the U.S. control the Fed?
• No. Although the Fed was created by and responsible to Congress, the Fed pursues an independent monetary policy that at times may conflict with policies pursued by the president or Congress.

EXHIBIT 2   THE GEOGRAPHY OF THE FEDERAL RESERVE SYSTEM
The Fed as the Money Printer

The Fed centrally prints all the money needed by the district branches. Money is printed and stored by the Bureau of Engraving and Printing. Until the notes are used by the District Branches, they are not considered as part of the money supply.

The Federal Reserve System

The Fed’s main charge is to safeguard the proper functioning of our monetary system (money supply, interest rates, and the economy’s price level).

The Federal Reserve System

Federal Open Market Committee

- The Fed’s principal decision-making body, charged with executing the Fed’s open market operations.

Fed as the Bankers Bank

- Holds Reserves
- Provides Banks with Currency & Loans
- Clears Bank Checks.
The Federal Reserve System

Discount rate

• The interest rate the Fed charges banks that borrow reserves from it.

Exhibit 6: Bank Transactions Triggered by Brian’s Purchase

Why does Brian’s check go to the Atlanta Fed and the Cleveland Fed?
• One of the functions of a district Fed is to clear checks.

Exhibit 7: From Changes in the Money Supply to Changes in Real GDP

How does an increase in the money supply lead to an increase in real GDP?
• Increasing the money supply leads to lower interest rates, which promotes increased investment spending, which increases aggregate demand.
Controlling the Money Supply

**Countercyclical monetary policy**

- Policy directives used by the Fed to moderate swings in the business cycle.

Controlling the Money Supply

**Legal Reserve requirement**

- The minimum amount of reserves the Fed requires a bank to hold, based on a percentage of the bank’s total deposit liabilities.

Controlling the Money Supply

**Discount Rate**

**Federal funds market**

- The market in which banks lend and borrow reserves from each other for very short periods of time, usually overnight.

Controlling the Money Supply

**Federal funds rate**

- The interest rate on loans made by banks in the federal funds market.

---

## EXHIBIT 11  FEDERAL RESERVE BANK OF NEW YORK

### Discount Rates: 1985–2003 (% Per Year)

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Rate</th>
<th>Effective Date</th>
<th>Rate</th>
<th>Effective Date</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985: MAY</td>
<td>7%</td>
<td>1991: FEB.</td>
<td>6%</td>
<td>1996: FEB.</td>
<td>5%</td>
</tr>
<tr>
<td>1986: MARCH</td>
<td>7%</td>
<td>1991: APRIL.</td>
<td>6%</td>
<td>1996: JAN.</td>
<td>5%</td>
</tr>
<tr>
<td>APRIL</td>
<td>6%</td>
<td>SEPT.</td>
<td>6%</td>
<td>1996: DEC.</td>
<td>4%</td>
</tr>
<tr>
<td>JULY</td>
<td>6%</td>
<td>NOV.</td>
<td>4%</td>
<td>1997: DEC.</td>
<td>4%</td>
</tr>
<tr>
<td>AUG.</td>
<td>8%</td>
<td>DEC.</td>
<td>3%</td>
<td>1997: DEC.</td>
<td>4%</td>
</tr>
<tr>
<td>1997: SEPT.</td>
<td>6%</td>
<td>1998: JULY.</td>
<td>8%</td>
<td>2000: MAY.</td>
<td>6%</td>
</tr>
<tr>
<td>1998: AUG.</td>
<td>6%</td>
<td>1998: MAY.</td>
<td>3%</td>
<td>2001: JAN.</td>
<td>5%</td>
</tr>
<tr>
<td>1998: FEB.</td>
<td>7%</td>
<td>AUG.</td>
<td>4%</td>
<td>2002: JAN.</td>
<td>1%</td>
</tr>
<tr>
<td>1999: DEC.</td>
<td>6%</td>
<td>NOV.</td>
<td>4%</td>
<td>2002: DEC.</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Federal Reserve Bank, St. Louis.
Controlling the Money Supply

Open market operations

• The buying and selling of government bonds by the Federal Open Market Committee.

2. If the Fed wanted to increase the money supply, would it purchase or sell government securities?

• It would buy government securities. Money used to buy the securities would increase the money supply.

Exhibit 12: Change in the Fed’s Accounts After Buying $10 Million of Securities from PFN ($ millions)

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>LIABILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Securities +$10</td>
<td>PFN’s Reserve +$10</td>
</tr>
</tbody>
</table>

What was the change in the Fed’s liabilities after buying $10 million of securities from PFN?

• The Fed’s liabilities increased by $10 million due to a $10 million increase in PFN’s reserve.

Exhibit 13: Change in PFN’s Accounts After Selling $10 Million of Securities to the Fed ($ millions)

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>LIABILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Securities -$10</td>
<td>No Change</td>
</tr>
<tr>
<td>Reserves at Fed  -$10</td>
<td></td>
</tr>
</tbody>
</table>

If the Fed buys $10 million of securities from PFN, how much of the proceeds from this sale can PFN loan out?

• PFN can loan out all $10 million because these represent excess reserves.
EXHIBIT 14: Change in PFN’s Accounts
After Maria Sells $10 Million of Securities
($ millions)

Suppose that the Fed bought $10 million of securities from a private individual (Maria) rather than from PFN. Would this still increase the money supply?

- Yes, but not by as much. If she deposits the check at the bank, the bank can loan out only $8 million of the new demand deposit. The other $2 million are required reserves.

EXHIBIT 17: The Fed’s Target Options

If Fed targets the money supply, as in Panel a, what countercyclical policy is no longer available to the Fed?

- The Fed can no longer control the interest rate, since the interest rate depends on the positioning of the demand for money.

Controlling the Interest Rate: The Fed’s Alternative Target Option

- If the Fed targets the money supply, it cannot at the same time control the interest rate.
- Likewise by choosing to target the interest rate, the Fed loses control over the money supply.

The Fed’s countercyclical monetary policy works either way, by changing interest rates or by changing the money supply.
Controlling the Interest Rate: The Fed's Alternative Target Option

*Margin requirements*

- The Fraction of the stock’s price that must be put up by the person buying the stock.

**EXHIBIT 18**
FEDERAL RESERVE'S MARGIN REQUIREMENTS: 1940–94 (PERCENTAGE)

<table>
<thead>
<tr>
<th>DATE</th>
<th>MARGIN</th>
<th>DATE</th>
<th>MARGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>50</td>
<td>1960</td>
<td>70</td>
</tr>
<tr>
<td>1942</td>
<td>75</td>
<td>1962</td>
<td>50</td>
</tr>
<tr>
<td>1945</td>
<td>100</td>
<td>1963</td>
<td>70</td>
</tr>
<tr>
<td>1947</td>
<td>75</td>
<td>1970</td>
<td>65</td>
</tr>
<tr>
<td>1953</td>
<td>50</td>
<td>1972</td>
<td>65</td>
</tr>
<tr>
<td>1955</td>
<td>50</td>
<td>1974</td>
<td>50</td>
</tr>
<tr>
<td>1958</td>
<td>90</td>
<td>1994</td>
<td>50</td>
</tr>
</tbody>
</table>


**EXHIBIT 19**
THE FED'S COUNTERCYCLICAL OPERATIONS

- Raise reserve requirement
- Raise discount rate
- Sell securities
- Lower reserve requirement
- Lower discount rate
- Buy securities

GDP

TIME