



## **CHAPTER 2**

# **THE FEDERAL RESERVE AND ITS POWERS**

# *Central Banks*

- Central banks
  - Banks created by governments
  - today have four main functions
  
- (1) Supervise nation's money supply and payments system
  
- (2) Regulate other financial institutions, especially depository institutions
  
- (3) “Lender of last resort” when financial system has liquidity problems
  
- (4) National government's “fiscal agent” (i.e. depository bank)

# *Central banking institutions: History in U.S.*

- Precursors to current Federal Reserve System
  - Bank of the United States, 1791-1811 (Brainchild of Alexander Hamilton)
    - Federal charter; Privately owned
    - Public and private functions
  - Second Bank of the United States, 1816-1836
    - Major issue in presidential politics.
    - Re-charter bill vetoed by Andrew Jackson in 1832
  
- Weaknesses in early 19<sup>th</sup> century banking system:
  - Unstable money supply
    - No standard currency, mostly private banknotes
    - “Hard currency” (gold/silver) hoarded, unevenly distributed
    - No coordinated payments system
  - Banks were state-chartered and unregulated—
    - No deposit insurance, capital requirements, or lending supervision.
    - Frequent bank failures
  - Disruptions of business credit from bank failures prolonged and intensified economic downturns. Exaggerated business cycle (boom & bust”).

## EXHIBIT 2.1

**Banknote Issued by Canal Bank, New Orleans, Louisiana**

Historically, individual bank liabilities (called *banknotes*) served as money. The fact that so many different monies existed made commerce difficult. A person never knew if the banknote was from a sound bank or from a failed or disreputable bank. It's no wonder that banknotes from lesser-known banks were heavily discounted.

## *National Banking System – 1860's*

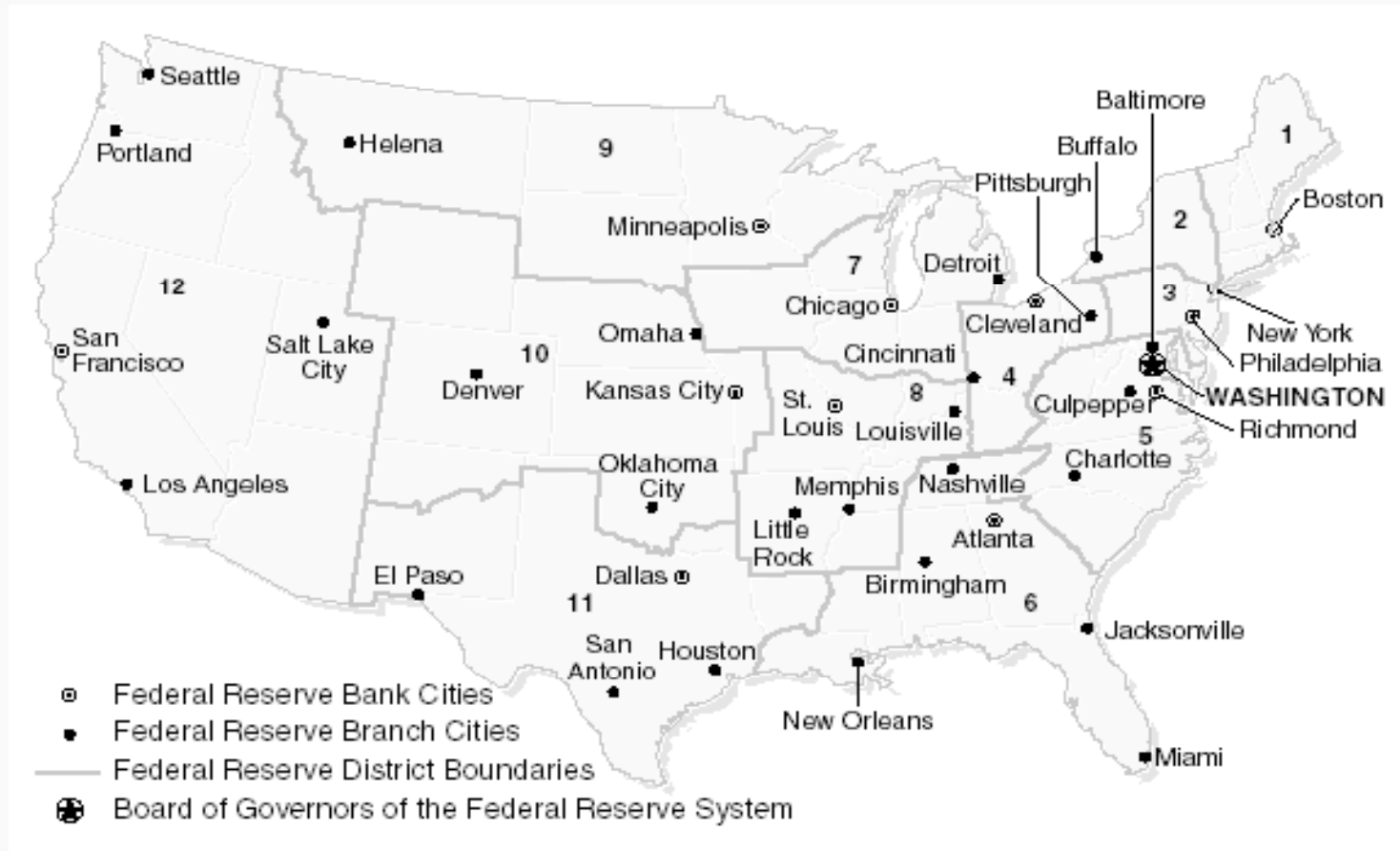
- Currency Acts & National Banking Acts-1862, 1863, 1864
  - First federally standardized currency
  - First systematic federal regulation of banking
  - Key Provisions:
    - Federally chartered “National Banks”
    - Periodic bank examinations
    - Minimum capital and reserve requirements; Max lending limits
    - Standard banknotes- printed by US Treasury secured by U.S. bonds
    - Federal tax on state banknotes
- Problems with this National banking system
  - Demand deposits became highly popular due to tax on state banknotes.
  - Pyramiding of reserves: Banks counted deposits at other banks as reserves.
    - a “run” on one could cause others to run short as well.
  - Call loans were the conventional form of bank loans.  
Banks low on reserves “called in” loans, causing borrowers to withdraw their own deposits or default
  - This reinforced more bank illiquidity and more “calls”...

# *Origins of the Federal Reserve System*

- Fed Reserve was created due to crisis:
  - Repeated cycles of panic and recession strengthened political consensus
  - Crash of 1907 shifted debate to structuring a new central bank one.
  - Federal Reserve Act of 1913 embodied several compromises
  
- Initial Goals the Federal Reserve Act
  - Provide an “elastic” currency—
    - Federal Reserve Notes—standardized currency
  
  - Serve as “lender of last resort” to keep banks liquid
    -
  
  - Improve payments system (check clearing)
  
  - Supervise banks more vigorously

# Geography of the Fed

## EXHIBIT 2.2 The Federal Reserve System

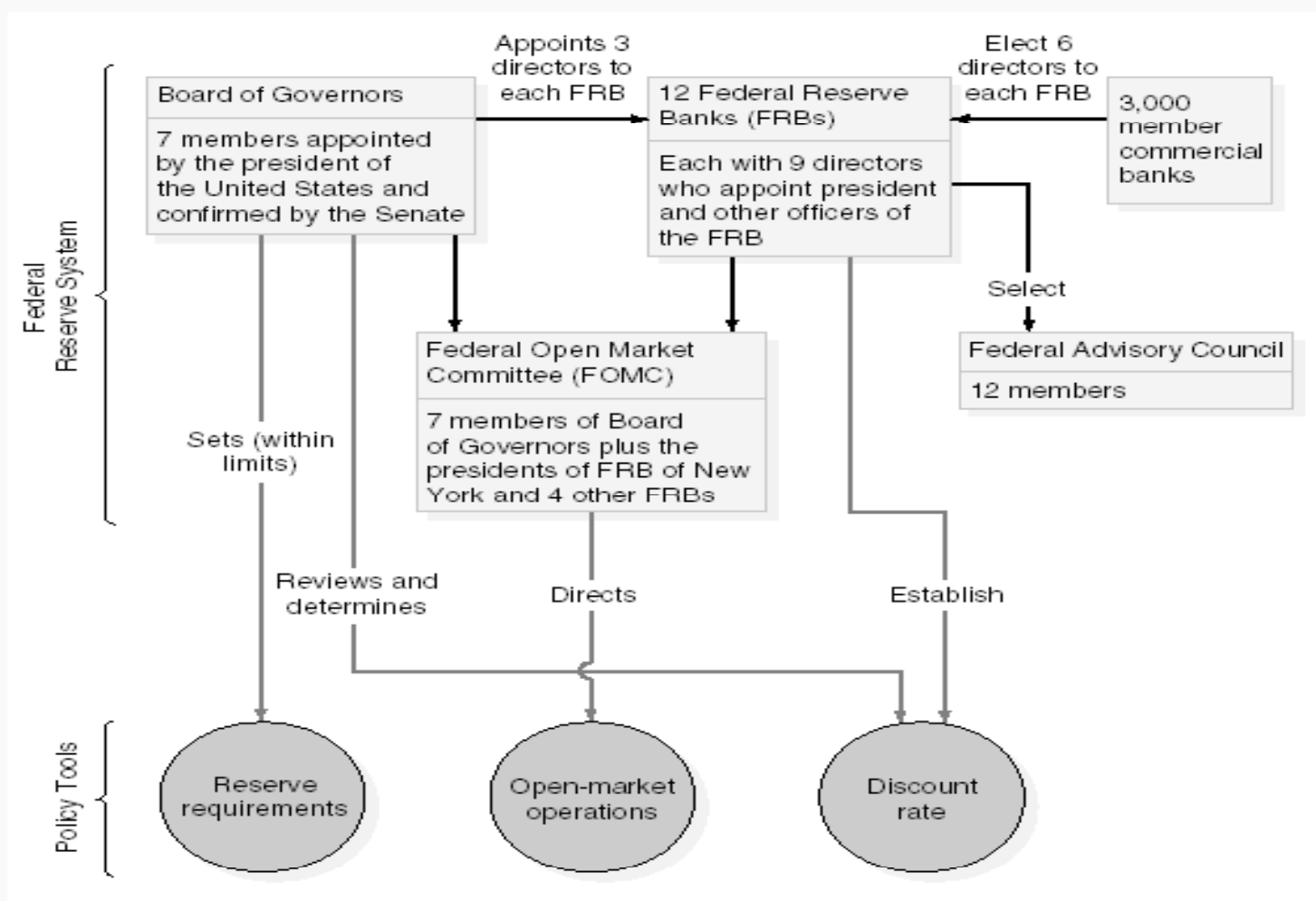


The Federal Reserve System consists of the Board of Governors and 12 Federal Reserve districts. Each district is served by a Federal Reserve bank that is named after its headquarters city. Historically, this unusual structure was necessary to calm the public's fear of concentration of political and economic power.

# Formal Organization of the Fed

## EXHIBIT 2.3

### The Formal Structure and Policy Organization of the FED

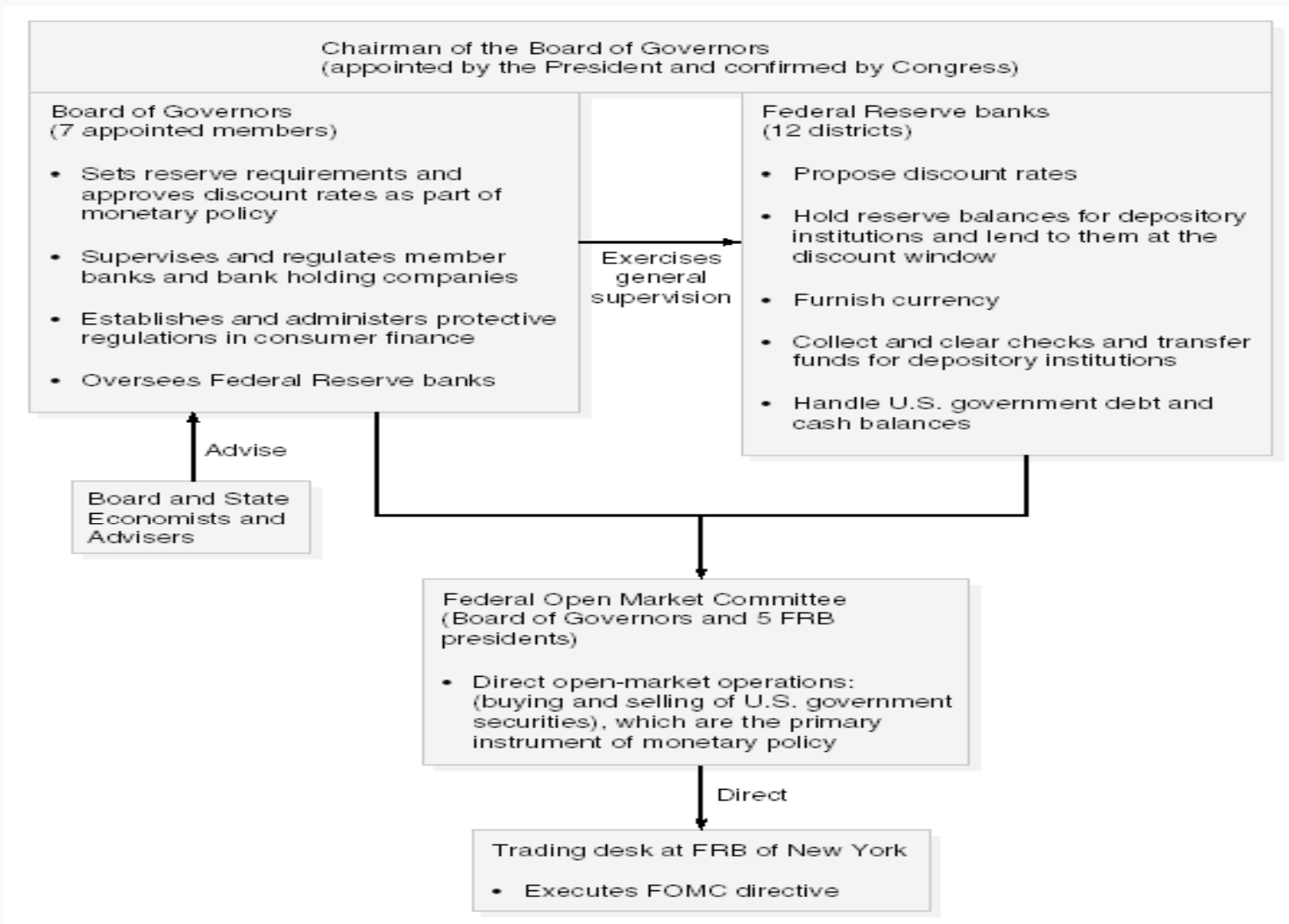


The Federal Reserve System has overlapping lines of authority. All members of the Board of Governors and 5 of the 12 Federal Reserve bank presidents vote equally on monetary policy decisions made by the FOMC.

# Power Structure of the Fed

## EXHIBIT 2.4

### The Power Structure of the Fed



The dominant person in the formation and execution of monetary policy is the Chairman of the Board of Governors. The chairman sets the agenda and chairs meetings of both the Board of Governors and the FOMC.

# *Federal Reserve System*

- 12 Federal Reserve Banks - provides basic services in its district -
  - processing checks and electronic payments
  - issuing Federal Reserve Notes
  - holding reserves of banks and other depository institutions
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  - 
  -
- Several thousand member commercial banks (more next slide)
- The Board of Governors (more below)
- The Federal Open Market Committee (FOMC) (more below).

# *Member banks*

- Member banks represent “dual banking” in the US
  - All Nationally chartered Banks *must* be members of the Fed
  - About 17% of state chartered banks *choose* to join
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- Member banks buy stock in the FRB for their district
  - collect dividends set by the Fed but do not otherwise share profits
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- Membership is not the distinction it once was. As of 1980
  - Fed services are available to any depository institution for a fee
  - Reserve requirements apply to all U.S. depository institutions

# *Board of Governors - runs the Fed*

- 7 Governors appointed by President, confirmed by Senate
  - No 2 Governors from same Federal Reserve District
  - Governors have 14-year terms, expiring every 2 years.
  - Governors' terms are nonrenewable
  - Board regulates key aspects of banking and finance beyond monetary policy
  -
  
- One Governor serves as Chairman
  - Chairman has 4-year term and may be reappointed
  - When new Chairman is named, old one traditionally leaves (regardless of time left in underlying appointment as Governor)
  
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# *Federal Open Market Committee*

- Federal Open Market Committee
  -
- FOMC has 12 members - 8 permanent, 4 rotating
  - 7 Governors are permanent members
  - President of FRB of New York has permanent seat
  - New York Fed operationally executes FOMC directives
  - Presidents of 4 other FRBs rotate through 1-year terms.
- FOMC – primary policy tools (discussed in detail in next chapter)
  - Open Market Operations –
  - Discount Rate
  - Set Reserve Requirements
- FOMC policy has actions substantially influence
  - size of the money supply
  - level of short-term interest rates

## *Board regulates key aspects of banking and finance beyond monetary policy*

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### EXHIBIT 2.5

#### Important Federal Reserve Regulatory Powers

Regulation	Topics of Regulations	Institutions Affected
A	Establishes Fed discount window policy	Borrowers from discount window
D	Establishes reserve requirements	All depository institutions
E	Regulates electronic funds transfer	All financial institutions
J	Regulates check collection and wire transfers of funds	All institutions using Fed facilities
K	Regulates international banking in United States and by U.S. banks abroad	Domestic and foreign banks
M	Regulates consumer leasing transactions	Institutions leasing consumer goods
G, U, T, X	Establishes securities margin requirements	Brokers, dealers, banks, and individuals
Y	Sets rules applicable to bank holding companies	Banks and their affiliates
Z, B, BB, C	Regulates consumer and mortgage credit transactions according to the following Acts: Z = Truth-in-Lending and Fair Credit Billing Acts B = Equal Credit Opportunity Act BB = Community Reinvestment Act C = Home Mortgage Disclosure Act	Institutions offering consumer and mortgage credit
P	Privacy of consumer financial information	All financial institutions
Q	Prohibits interest on demand deposits; formerly set interest rate ceilings on savings and time deposits	All commercial banks
DD	Regulates interest rate disclosures on deposits	All depository institutions offering interest-bearing deposits

# *Fed's balance sheet*

- **Main operating assets—**
  - US Government Securities
    - Securities purchased but agreed to resell
    - Loans at Discount Window
    - “CIPC”: Cash Items in Process of Collection (related to check clearing)
  
- **Main operating liabilities—**
  - Federal Reserve Notes in Circulation
    - Depository Institution Reserves
    - “DACI”—Deferred Availability Cash Items (check clearing).

**EXHIBIT 2.7****Fed Balance Sheet (December 2005)**

	Millions	% of Total <sup>a</sup>
<b>Assets</b>		
Gold certificates	\$11,039	1.3%
Special drawing rights certificates	2,200	0.3
Coin	686	0.1
Cash items in process of collection (CIPC)	5,930	0.7
Loans to depository institutions	72	0.0
Securities purchased under agreements to resell	46,750	5.5
U.S. government and agency securities	750,202	88.5
Investments denominated in foreign currency	18,928	2.2
Accrued interest receivable	5,874	0.7
Bank premises and equipment	2,252	0.3
Other assets	3,394	0.4
<b>Total</b>	<b><u>\$847,327</u></b>	<b><u>100.0%</u></b>
<b>Liabilities and capital</b>		
Federal Reserve notes	\$758,359	89.5%
Securities sold under agreements to repurchase	30,505	3.6
<b>Deposits</b>		
Depository institution reserves	19,043	2.2
U.S. Treasury	4,573	0.5
Other	393	0.0
Deferred credit items	5,039	0.6
Interest on Federal Reserve notes due U.S. Treasury	1,784	0.2
Accrued benefit costs	913	0.1
Other liabilities	281	0.0
Capital	\$26,437	3.1
<b>Total</b>	<b><u>\$847,327</u></b>	<b><u>100.0%</u></b>

*Source: Board of Governors, Federal Reserve System, 92d Annual Report, 2005.*

<sup>a</sup>Column does not add to 100% because of rounding.

# Policy Tool: Reserve Requirements

- Depository institutions must reserve set percentage of certain types of deposits
  - Most reserves are held at FRB for that District
  -
- Monetary Control Act of 1980 –
  - subjects all US depository institutions to uniform reserve requirements
  -
- Reserve requirements are a structural control
  - Changes in reserve requirements can have dramatic effects.
  - Reserve requirements are not useful for “fine-tuning”
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Type of Liability	Requirement (percentage of liabilities)	Effective Date
Net transaction accounts		
\$0-\$8.5 million	0	12/21/2006
More than \$8.5 million to \$45.8 million	3	12/21/2006
More than \$45.8 million	10	12/21/2006
Nonpersonal time deposits	0	12/27/1990
Eurocurrency liabilities	0	12/27/1990

# Changes in Reserve Requirements

- Suppose reserve requirement decreases from 20% to 10%.
  - Banks will “loan out” excess reserves.

## EXHIBIT 2.9

### How Changes in Reserve Requirements Change the Money Supply (Demand Deposits)

#### Initial Condition

Assets		Liabilities	
Reserves	\$1,000	Demand Deposits	\$5,000
Required	1,000		
Excess	0		
Loans	4,000		
Total	\$5,000	Total	\$5,000

#### Reduction in Reserve Requirements

Assets		Liabilities	
Reserves	\$1,000	Demand Deposits	\$5,000
Required	500		
Excess	500		
Loans	4,000		
Total	\$5,000	Total	\$5,000

#### New Equilibrium

Assets		Liabilities	
Reserves	\$1,000	Demand Deposits	\$10,000
Required	1,000		
Excess	0		
Loans	9,000		
Total	\$10,000	Total	\$10,000

# Policy tool: Open market operations 1/3

- Fed can affect the amount of reserves in the banking system.
  - Changes in banking reserves cause changes in the money supply.
  - Fed changes reserves by buying/selling govt bonds on secondary market.
  -
  
- Fed increases reserves (money supply) by
  - Fed buys US government securities on open secondary market
  - Fed pays for bonds by crediting reserves to bank accounts of primary dealers.
  - Net effect is that total reserves in the banking system increase.
  - Ex: Suppose Fed buys \$1M in Treasury bonds from Citigroup.

<b>Citigroup</b>	
Assets	Liabilities + Equity

<b>Fed Reserve</b>	
Assets	Liabilities + Equity

# Policy tool: Open market operations 2/3

- Fed decreases reserves (and money supply) by
  - Fed sells US government securities on open secondary market
  - Fed receives for money bonds by debiting reserves from bank accounts of primary dealers.
  - Net effect is that total reserves in the banking system decrease.
  - Ex: Fed sells \$1M in Treasury bonds to Citigroup

<b>Citigroup</b>	
Assets	Liabilities + Equity

<b>Fed Reserve</b>	
Assets	Liabilities + Equity

- Fed increases/decreases reserves actively.
  - Accommodative (weekends, Jan 1, 1999).
  - Discretionary (as a change in policy).

# Policy tool: Open market operations 3/3

- Comments of Open market operations
  - Open Market Ops flexible and precise
  - Money supply changes immediately and dollar for dollar.
  - FOMC meets 8 times per year to decide on policy issues.
  - FOMC issues policy directives to Open Market Desk at FRB of New York
- Open market operations affect short-term interest rates (more next chapter).
  - Banks need reserves; can borrow reserves from other banks.
  - If reserves are scarce, banks pay higher interest rates to get them.
  -
- Q: What happens to short-term rates when Fed conducts open market purchases?
- A:
- Q: What happens to short-term rates when Fed conducts open market sales?
- A:

# Policy Tool: Discount Rate

- Discount Rate - interest rate at which Fed lends to depository institutions.
  - Fed can lend reserves to banks, which increases money supply.
  - Called the discount “window”.
  - Lower discount rates provide incentive for banks to borrow.
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- **Update:** Under “new regime (post textbook),
  - discount rate is *usually* 25 bps higher than Fed’s target short-term interest rate (the federal funds rate).
- Example: Suppose Citigroup borrows +\$1M from the discount window.

Citigroup	
Assets	Liabilities + Equity

Fed Reserve	
Assets	Liabilities + Equity

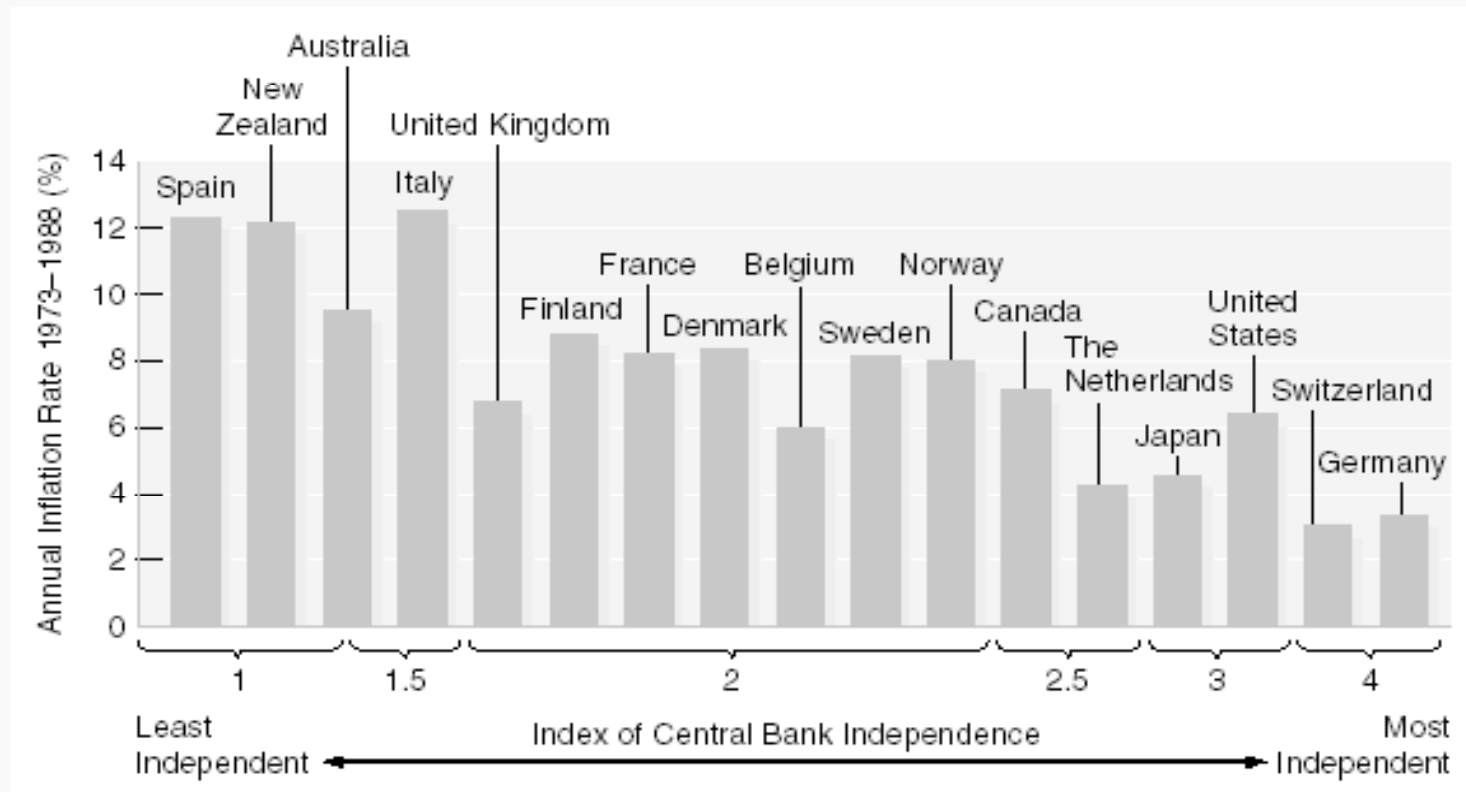
**EXHIBIT 2.10**

**How Tools of Monetary Policy Affect the Money Supply**

<b>Monetary Policy Tool</b>	<b>Increase in Money Supply</b>	<b>Decrease in Money Supply</b>
Open-market operations	FOMC directs the trading desk to purchase Treasury securities in the secondary market	FOMC directs the trading desk to sell Treasury securities in the secondary market
Adjust the discount rate	Board of Governors lowers the discount rate	Board of Governors raises the discount rate
Adjust bank reserve requirements	Board of Governors lowers the reserve ratio (within limits) to cause a higher money multiplier	Board of Governors raises the reserve ratio (within limits) to cause a lower money multiplier

## *Federal Reserve independence*

- Fed is a very independent institution.
  - Fed's independence enhances its power.
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- No direct channels of political or fiscal pressure
  - Fed is created by Congress, but not directly under its authority
  - Board is appointed to long terms
    - not really answerable to President
  - No fiscal pressure; Fed funds itself—
    - income exceeds expenses by about \$20 billion/year
    -
- Ultimately independent *within*, not *of* government
  - What Congress creates, Congress can modify or destroy.
  - Fed remains independent because most politicians want it that way—
    - mostly agree that monetary policy is not partisan issue
    - Fed can absorb some blame if economy falters
    - Fed can take necessary but unpopular steps with **long-term horizon**.

**EXHIBIT 2.6****Central Bank Independence and a Country's Rate of Inflation**

Countries with independent central banks have lower rates of inflation than countries with less independent central banks.

Source: Alberto Alesina and Lawrence Summers, "Central Bank Independence and Macroeconomic Performance, Some Comparative Evidence," *Journal of Money, Credit, and Banking* 25 (1993): 151-162.