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Money Creation

Fractional Reserve System

- The Goldsmiths
 - Stored gold and gave a receipt
 - Receipts used as money by public
 - Made loans by issuing receipts
- Characteristics:
 - Banks create money through lending
 - Banks are subject to “panics”

Fractional Reserve System

- Balance sheet
 - Assets = Liabilities + Net Worth
 - Both sides balance
- Necessary transactions
 - Create a bank
 - Accept deposits
 - Lend excess reserves

A Single Commercial Bank

Transaction #1

Vault cash: cash held by the bank

| Creating a Bank | | | |
|-----------------------------|-----------|---------------------------|-----------|
| Balance Sheet 1: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Cash | \$250,000 | Stock Shares | \$250,000 |

A Single Commercial Bank

Transaction #2

Acquiring property and equipment

| Acquiring Property and Equipment | | | |
|---|----------|---------------------------|-----------|
| Balance Sheet 2: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Cash | \$10,000 | Stock Shares | \$250,000 |
| Property | 240,000 | | |

A Single Commercial Bank

Transaction #3

Commercial bank functions

- Accepting deposits
- Making loans

| Accepting Deposits | | | |
|-----------------------------|-----------|---------------------------|-----------|
| Balance Sheet 3: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Cash | \$110,000 | Checkable Deposits | \$100,000 |
| Property | 240,000 | Stock Shares | 250,000 |

A Single Commercial Bank

Transaction #4

Depositing reserves in a Federal Reserve bank

- Required reserves
- Reserve ratio

$$\text{Reserve ratio} = \frac{\text{Commercial bank's Required reserves}}{\text{Commercial bank's Checkable-deposit liabilities}}$$

A Single Commercial Bank

| Type of Deposit | Current Requirement | Statutory Limits |
|---|---------------------|------------------|
| Checkable deposits: | | |
| \$0-\$10.7 Million | 0% | 3% |
| \$10.7-\$55.2 Million | 3 | 3 |
| Over \$55.2 Million | 10 | 8-14 |
| Noncheckable nonpersonal savings and time deposits | 0 | 0-9 |

- The Fed can establish and vary the reserve ratio within limits set by Congress
- Required reserves help the Fed control lending abilities of commercial banks

A Single Commercial Bank

Transaction #4

Assume the bank deposits all cash on reserve at the Fed

| Depositing Reserves at the Fed | | | |
|---------------------------------------|---------|---------------------------|-----------|
| Balance Sheet 4: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Cash | \$0 | Checkable | |
| Reserves | 110,000 | Deposits | \$100,000 |
| Property | 240,000 | Stock Shares | 250,000 |

A Single Commercial Bank

- Excess reserves
 - Actual reserves - required reserves
- Required reserves
 - Checkable deposits x reserve ratio
- Example:
 - Checkable deposits \$100,000
 - Reserve ratio 20%

A Single Commercial Bank

Transaction #5

Clearing a check

- \$50,000 check reduces reserves and checkable deposits

| Clearing a Check | | | |
|-----------------------------|----------|---------------------------|----------|
| Balance Sheet 5: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Reserves | \$60,000 | Checkable Deposits | \$50,000 |
| Property | 240,000 | Stock Shares | 250,000 |

Money Creating Transactions

Transaction #6a

Granting a loan

- \$50,000 loan deposited to checking

| When a Loan is Negotiated | | | |
|----------------------------------|----------|---------------------------|-----------|
| Balance Sheet 6a: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Reserves | \$60,000 | Checkable | |
| Loans | 50,000 | Deposits | \$100,000 |
| Property | 240,000 | Stock Shares | 250,000 |

Money Creating Transactions

Transaction #6b

Using the loan

- \$50,000 loan cashed

After a Check is Drawn on the Loan

Balance Sheet 6b: Wahoo Bank

| Assets | | Liabilities and Net Worth | |
|----------|----------|---------------------------|----------|
| Reserves | \$10,000 | Checkable | |
| Loans | 50,000 | Deposits | \$50,000 |
| Property | 240,000 | Stock Shares | 250,000 |

A single bank can only lend an amount equal to its preloan excess reserves

Money Creating Transactions

Transaction #7

Bank buys government securities from a dealer

- Deposits payment into checking

| Buying Government Securities | | | |
|-------------------------------------|----------|---------------------------|-----------|
| Balance Sheet 7: Wahoo Bank | | | |
| Assets | | Liabilities and Net Worth | |
| Reserves | \$60,000 | Checkable | |
| Securities | 50,000 | Deposits | \$100,000 |
| Property | 240,000 | Stock Shares | 250,000 |

- New money is created

Profits, Liquidity, and the Fed Funds Market

- Conflicting goals
- Earn profit
 - Make loans to earn interest
 - Buy securities to earn interest
- Maintain liquidity
- Alternative?
 - Overnight bank loans

The Monetary Multiplier

$$\text{Monetary multiplier} = \frac{1}{\text{required reserve ratio}} = \frac{1}{R}$$

