

# Chapter 13

The Fractional Reserve System

Creating a Bank

Money Creation

The Banking System

Monetary Multiplier

Last Word

# 13



# Money Creation

Key Terms



End Show



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# Chapter Objectives

- Why the U.S. Banking System is Called a “Fractional Reserve” System
- Distinction Between a Bank’s Actual Reserves and Its Required Reserves
- How a Bank Can Create Money Through Granting Loans
- The Multiple Expansion of Loans and Money by the Entire Banking System
- The Monetary Multiplier and How to Calculate it

Key Terms



End Show



# Chapter 13

# Fractional Reserve System

- Characteristics

- Banks Create Money Through Lending (when people deposit \$, banks lend most of it out, leaving only a fraction of the \$ *on reserve*)
- Fractional Reserve Banks are Subject to “Panics” or “Runs” ( if everyone came to the bank at the same time to withdraw their \$, there would not be enough)

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# Fractional Reserve System

- Balance Sheet – a statement showing assets(\$ or value held), liabilities (debts owed), and net worth (assets minus liabilities).

**Assets = Liabilities + Net Worth**

- **Transactions Needed to Enable Banks to Create Money Through Lending**

*As Follows...*

Key Terms



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# Creating a Bank

## *Transaction 1:*

- Creating a Bank – get a charter, sell stock (get investors)
- Vault Cash – cash actually held by the bank

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Creating a Bank			
<i>Balance Sheet 1: Wahoo Bank</i>			
Assets		Liabilities and Net Worth	
Cash	\$250,000	Stock Shares	\$250,000

Key Terms



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# Creating a Bank

## *Transaction 2:*

- Acquiring Property and Equipment – purchase a building, equipment

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### Acquiring Property and Equipment *Balance Sheet 2: Wahoo Bank*

Assets		Liabilities and Net Worth	
Cash	\$10,000	Stock Shares	\$250,000
Property	\$240,000		

Key Terms



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# Creating a Bank

## Transaction 3:

- Accepting Deposits
  - Receive \$100,000 as a Checkable Deposit

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

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# Creating a Bank

## *Transaction 4:*

- Depositing Reserves in a Federal Reserve Bank
  - Required Reserves – the % of a banks deposits they must keep in the vault or on deposit in their district Federal Reserve Bank. (Can't loan out)

$$\text{Reserve Ratio} = \frac{\text{Commercial Bank's Required Reserves}}{\text{Commercial Bank's Checkable-Deposit Liabilities}}$$

Key Terms



End Show





# Creating a Bank

## Transaction 4:

### 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

**Excess Reserves** – the amount of money that could be lent out (total/actual reserves – required reserves)

$$\text{Excess Reserves} = \text{Actual Reserves} - \text{Required Reserves}$$

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# Creating a Bank

- Control – the Fed uses the reserve requirement to control the money supply NOT to protect against a bank run
  - FDIC, NCUA protect deposits
- Asset and Liability
  - Transactions are Both! (Balance sheet)

Key Terms



End Show



# Creating a Bank

## Transaction 5: Clearing a Check

- \$50,000 Check Presented for Payment (withdrawal)

### 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

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# Money Creating Transactions

## *Transaction 6a:*

- **Granting a Loan**

**–\$50,000 Loan Deposited to Checking Account**

### When a Loan is Negotiated *Balance Sheet 6a: Wahoo Bank*

Assets		Liabilities and Net Worth	
Reserves	\$60,000	Checkable Deposits	\$100,000
Loans	\$50,000		
Property	\$240,000	Stock Shares	\$250,000

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# Money Creating Transactions

## *Transaction 6b:*



W 13.1

- **Using the Loan**

**–\$50,000 Loan Cashed**

**From Checking Account**

**After a Check is Drawn on the Loan**  
**Balance Sheet 6b: Wahoo Bank**

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

***A Single Bank Can Only Lend An Amount Equal to their Preloan Excess Reserves***

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# Money Creating Transactions

## *Transaction 7:*

- **Buying Government Securities From Dealer**  
– Deposits Payment Into Checking Account

### Buying Government Securities *Balance Sheet 7: Wahoo Bank*

Assets		Liabilities and Net Worth	
Reserves	\$60,000	Checkable Deposits	\$100,000
Securities	\$50,000		
Property	\$240,000	Stock Shares	\$250,000

Key Terms



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## Money Creating Transactions

### *Profits, Liquidity, and the Federal Funds Market*

- Profit (goal of commercial banks)
  - Loans & Securities – banks earn interest, “create \$”
- Liquidity
  - Banks must find balance between high returns/profits (low liquidity) and low/no returns/reserves (high liquidity)
- Overnight Bank Loans – banks loan reserves to each other temporarily to earn interest and keep reserves high enough
- Federal Funds Market
  - Federal Funds Rate – the interest rate paid on these

# Chapter 13

# The Banking System

- Multiple-Deposit Expansion – the multiplier for the banking industry (an initial deposit results in a multiple expansion of the money supply)
- The Banking System's Lending Potential
- Assumptions:
  - 20% Required Reserves
  - All Banks “Loaned Up” (Banks Lend All of Excess Reserves)

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# The Banking System

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Bank	(1) Acquired Reserves and Deposits	(2) Required Reserves (Reserve Ratio = .2)	(3) Excess Reserves (1)-(2)	(4) Amount Bank Can Lend; New Money Created = (3)
Bank A	\$100.00	\$20.00	\$80.00	\$80.00
Bank B	80.00	16.00	64.00	64.00
Bank C	64.00	12.80	51.20	51.20
Bank D	51.20	10.24	40.96	40.96
Bank E	40.96	8.19	32.77	32.77
Bank F	32.77	6.55	26.21	26.21
Bank G	26.21	5.24	20.97	20.97
Bank H	20.97	4.20	16.78	16.78
Bank I	16.78	3.36	13.42	13.42
Bank J	13.42	2.68	10.74	10.74
Bank K	10.74	2.15	8.59	8.59
Bank L	8.59	1.72	6.87	6.87
Bank M	6.87	1.37	5.50	5.50
Bank N	5.50	1.10	4.40	4.40
Other Banks	21.99	4.40	17.59	17.59
				<b>\$400.00</b>

Key Terms



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# The Monetary Multiplier

## Monetary Multiplier or Checkable-Deposit Multiplier

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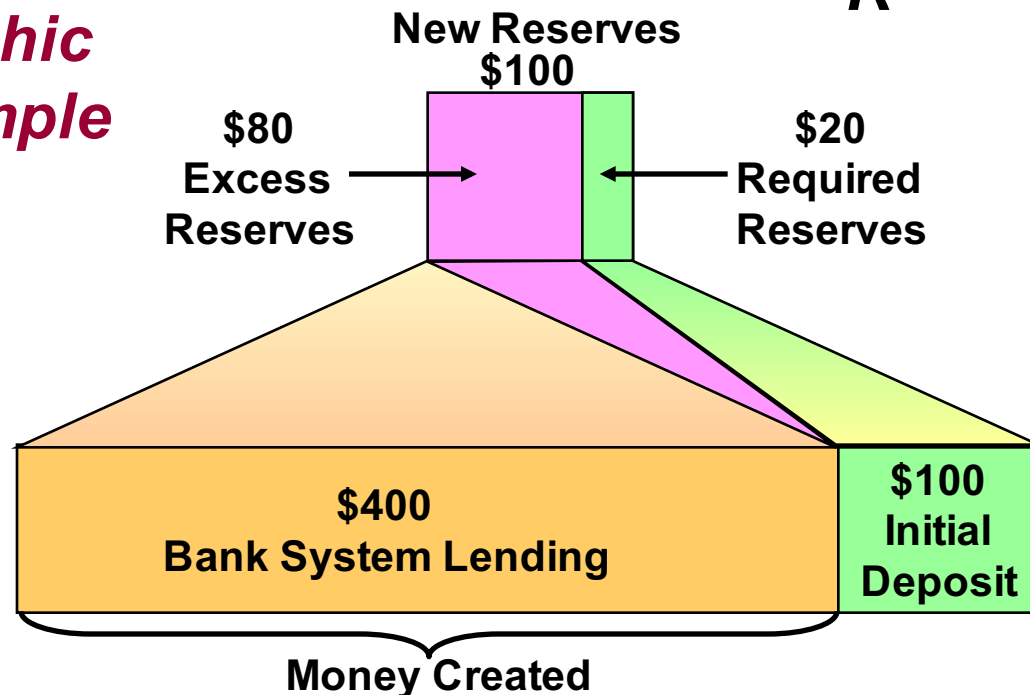
Monetary Multiplier

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$$\text{Monetary Multiplier} = \frac{1}{\text{Required Reserve Ratio}}$$

*or in Symbols...*  $m = \frac{1}{R}$

*Graphic Example*



Key Terms



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# Chapter 13

# The Monetary Multiplier

- Reversibility



W 13.2

- Making Loans Creates Money - Multiple Step Money Expansion (monetary multiplier  $\uparrow$ )

- (similar to expansionary fiscal policy increasing GDP)

- Loan Repayment Destroys Money - Multiple Step Destruction of Money (monetary multiplier  $\downarrow$ )

- (similar to contractionary fiscal policy decreasing GDP)

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## Bank Panics of 1930-1933

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### Series of Bank Panics

- Before Deposit Insurance
- Mass Withdrawals From Fear
- Move to Cash Reduced Money Supply Through Reduction in Loans
- Multiple Contraction Slowed Lending and the Economy
- 1933 National Bank Holiday for One Week
- Resulted in FDIC and 25% Drop in Money Supply
- Contributed to the Great Depression
- Regulation Protects the System Today

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## Key Terms

- fractional reserve banking system
- balance sheet
- vault cash
- required reserves
- reserve ratio
- excess reserves
- actual reserves
- Federal funds rate
- monetary multiplier

Key Terms



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## Next Chapter Preview...

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# Interest Rates and Monetary Policy

# Chapter 14!

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