

Chapter 14

Interest Rates
Consolidated
Balance Sheet
of the Federal
Reserve Banks

Tools of
Monetary
Policy

Targeting the
Federal Funds
Rate

Monetary
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The Big
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Interest Rates and Monetary Policy

Key Terms



End Show



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Chapter Objectives

- **How the Equilibrium Interest Rate is Determined in the Market for Money**
- **The Goals and Tools of Monetary Policy**
- **The Federal Funds Rate and How the Fed Controls It**
- **The Mechanisms by Which Monetary Policy Affects GDP and the Price Level**
- **Effectiveness of Monetary Policy and its Shortcomings**

Key Terms



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Interest Rates

- Definition: the price paid for the Use of Money
- Demand for Money
 - Transactions Demand, D_t
 - \$ needed for everyday transactions, used as a medium of exchange
 - Determined by nominal GDP
 - Asset Demand, D_a
 - \$ held as an asset or investment
 - Highly liquid, low return
 - Varies inversely with the interest rate
 - Total Money Demand, D_m
 - $D_t + D_a = D_m$



O 14.1



W 14.1

Interest Rates

Demand for Money and the Money Market

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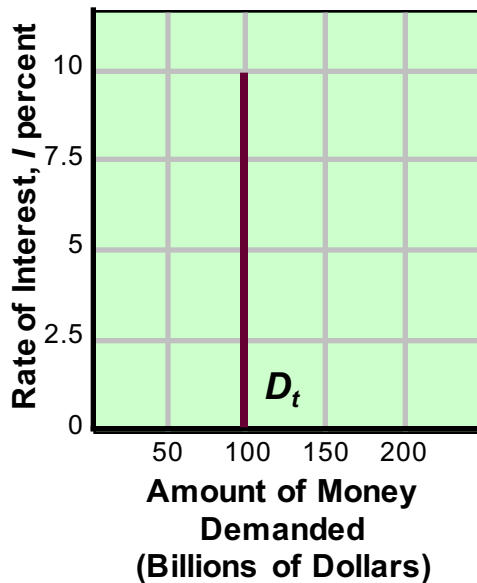
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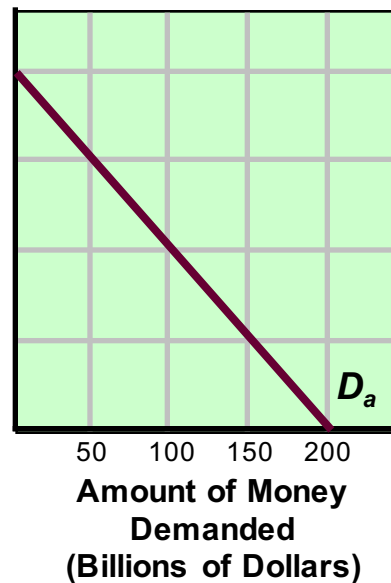
Last Word

(a)
**Transactions
Demand for
Money, D_t**



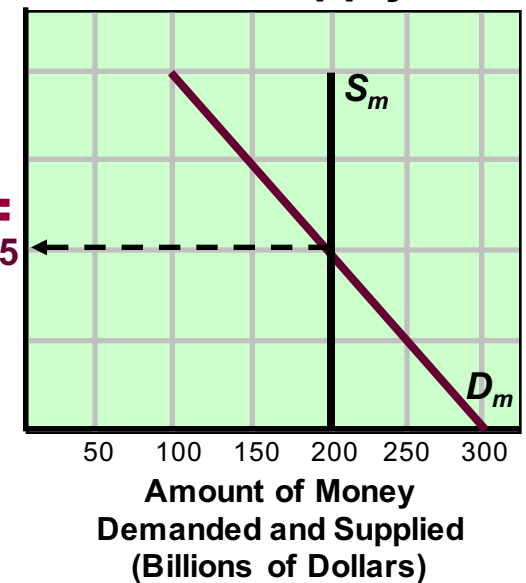
+

(b)
**Asset
Demand for
Money, D_a**



=

(c)
**Total
Demand for
Money, D_m
And Supply**



Key Terms



End Show





Interest Rates



G 14.1

- Equilibrium Interest Rate (where supply of money meets demand for money... DUH!)

- If supply of money \uparrow , interest rates \downarrow
- If supply of money \downarrow , interest rates \uparrow



W 14.2

- Interest Rates and Bond Prices

- Bond Prices Fall When Interest Rates Rise
- Bond Prices Rise When Interest Rates Fall
- Inverse Relationship Between Interest Rates and Bond Prices

$$\frac{\$50}{\$1000} = 5\%$$

$$\frac{\$50}{\$667} = 7.5\%$$

$$\frac{\$50}{\$2000} = 2.5\%$$

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Consolidated Balance Sheet Federal Reserve Banks

- Assets

- Securities (gov bonds purchased from commercial banks by the Fed...Open-Market Operations)
 - Provides interest income for the Fed but used to regulate the amount of money available for lending.
 - Part of the public debt (money borrowed by the gov)
- Loans to Commercial Banks (banks borrow \$ from the Fed to keep reserves high enough and to continue to make loans to customers)

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Consolidated Balance Sheet Federal Reserve Banks

- Liabilities

- Reserves of Commercial Banks – many banks deposit their reserves at the Fed (assets to the banks, liabilities to the Fed)
- Treasury Deposits – the Fed is the bank of the US, gov deposits tax revenue and pays debts/writes checks (assets to the gov, liabilities to the Fed)
- Federal Reserve Notes Outstanding – dollars are issued by the Fed so all \$ held by others count as a liability to the Fed

Key Terms



End Show



Consolidated Balance Sheet Federal Reserve Banks

Consolidated Balance Sheet of the 12 Federal Reserve Banks March 29, 2006 (in Millions)

Assets		Liabilities and Net Worth	
Securities	\$758,551	Reserves of Commercial Banks	\$ 14,923
Loans to Commercial Banks	19,250	Treasury Deposits	4,463
All Other Assets	59,967	Federal Reserve Notes (Outstanding)	754,567
		All Other Liabilities and Net Worth	63,615
Total	\$837,768	Total	\$837,768

Source: Federal Reserve Statistical Release, H.4.1, May 7, 2003

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Consolidated Balance Sheet Federal Reserve Banks



GLOBAL PERSPECTIVE

Central Banks, Selected Nations

Australia:	Reserve Bank of Australia (RBA)
Canada:	Bank of Canada
Euro Zone:	Central Bank of Europe (CBE)
Japan:	Bank of Japan (BOJ)
Mexico:	Banco de Mexico (Mex Bank)
Russia	Central Bank of Russia
Sweden:	Sveriges Riksbank
United Kingdom:	Bank of England
United States:	Federal Reserve System (the “Fed”) (12 Regional Federal Reserve Banks)

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14-10

Tools of Monetary Policy

- Open Market Operations **most important tool for influencing the money supply

– Buying Securities

- From Commercial Banks – Fed buys gov bonds from banks which increases the assets for the Fed AND the reserves of the banks (lending ↑)
- From the Public – Fed buys gov bonds from people or businesses which increases the assets for the Fed AND the reserves of the banks when the money is deposited (lending ↑)

– When the Fed buys securities,
reserves ↑, money supply ↑



W 14.3



O 14.2

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Tools of Monetary Policy

– Selling Securities

- To Commercial Banks - Fed sells gov bonds to banks which decreases the assets for the Fed AND the reserves of the banks (lending ↓ money supply ↓)
- To the Public - Fed sells gov bonds to people or businesses which decreases the assets for the Fed AND the reserves of the banks when they pay for the bonds (lending ↓, money supply ↓)

– When the Fed sells securities, reserves ↓, money supply ↓

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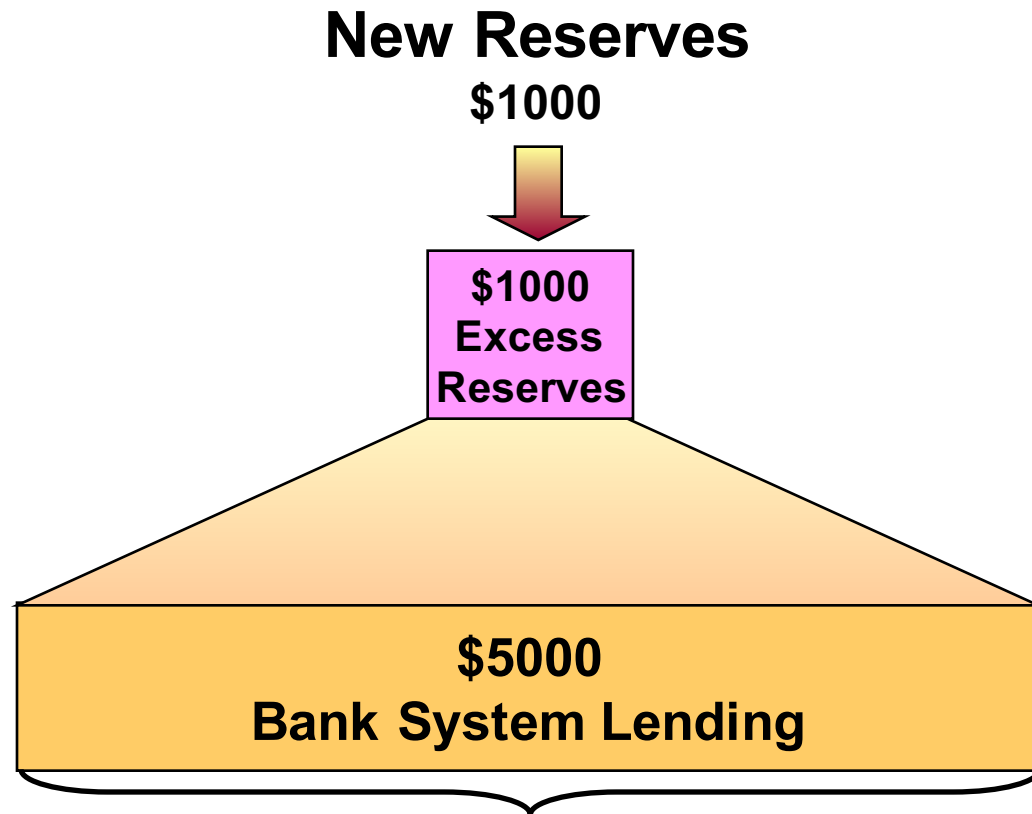


W 14.30 14.2

Tools of Monetary Policy

Fed Buys \$1,000 Bond from a Commercial Bank

- Interest Rates
- Consolidated Balance Sheet of the Federal Reserve Banks
- Tools of Monetary Policy
- Targeting the Federal Funds Rate
- Monetary Policy
- The Big Picture
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Total Increase in the Money Supply, (\$5,000)

Key Terms



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Tools of Monetary Policy

Fed Buys \$1,000 Bond from the Public

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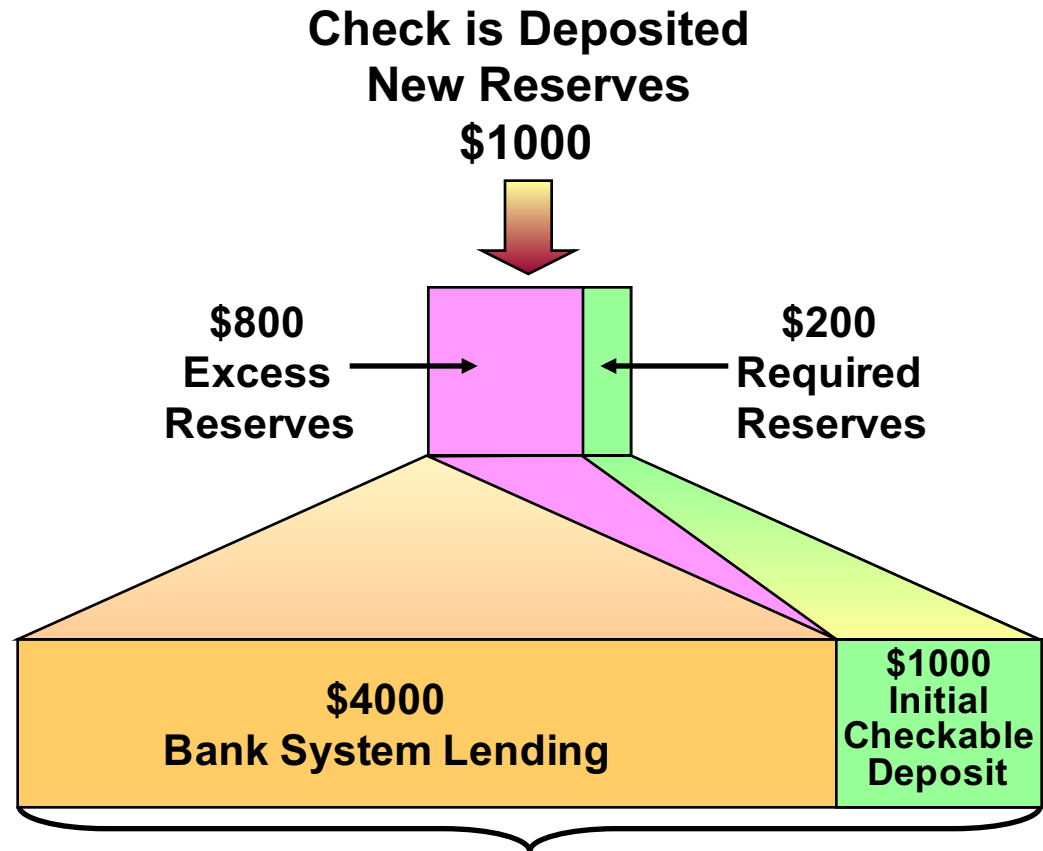
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Tools of Monetary Policy

- The Reserve Ratio
 - Raising the Reserve Ratio – decreases amount of money available for lending (money multiplier ↓, money supply ↓)
 - Lowering the Reserve Ratio - increases the amount of money available for lending (money multiplier ↑, money supply ↑)
- The Discount Rate
 - Borrowing from the Fed by Banks Increases Reserves and Enhances Lending Ability
 - Discount Rate ↑, lending ↓, money supply ↓
 - Discount Rate ↓, lending ↑, money supply ↑
- Relative Importance of Each – OMO is most important, then reserve req. and discount rate

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Targeting the Federal Funds Rate

- **Federal Funds Rate Defined** – rate banks use for overnight loans to each other
 - Fed sets this rate by using OMO to increase or decrease the money supply!
- **Discount rate** – the rate the Fed uses to make loans to banks (usually set 1% above the FFR)
- **Prime Interest Rate** – interest rate consumers pay (always higher than the FFR or the Discount Rate!)



W 14.4

Key Terms



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Targeting the Federal Funds Rate *Using Open Market Operations To Set The Federal Funds Rate*

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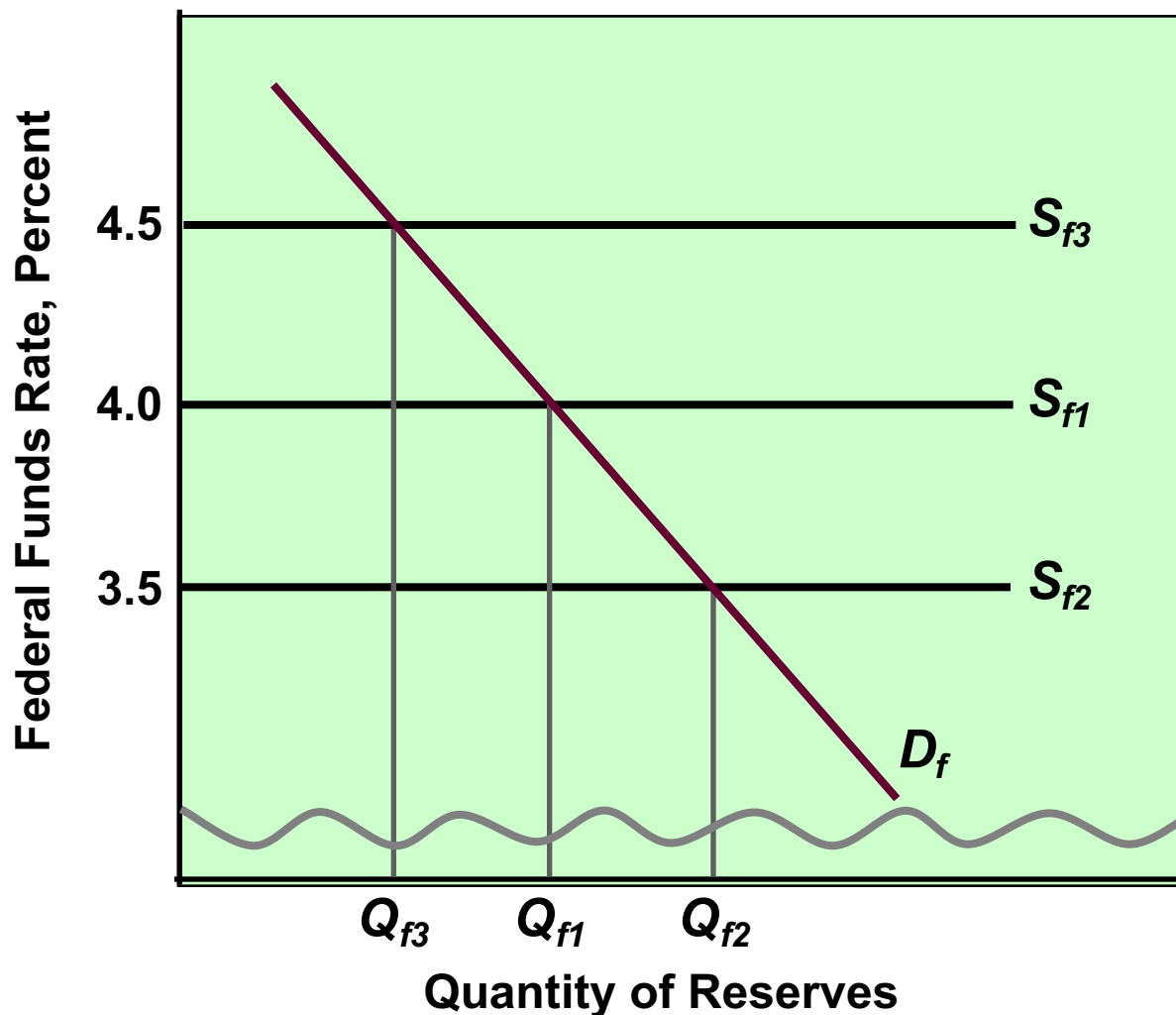
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Targeting the Federal Funds Rate

- Expansionary Monetary Policy (AKA “Easy Money” or “Loose Money”)
 - Used to fix recession
 - Money supply \uparrow , interest rates \downarrow , AD \uparrow , output \uparrow
- Restrictive/Contractionary Monetary Policy (AKA “Tight Money”)
 - Used to fix inflation
 - Money supply \downarrow , interest rates \uparrow , AD \downarrow , output \downarrow
- The Taylor Rule – target inflation rate of 2%
 - For every % that GDP is above potential, Fed should raise the FFR by .5%
 - For every % that inflation is above 2%, Fed should raise FFR by .5%
 - If GDP and inflation are on track the FFR should be 4% (real interest rate = 2%)

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Monetary Policy

Monetary Policy and Equilibrium GDP

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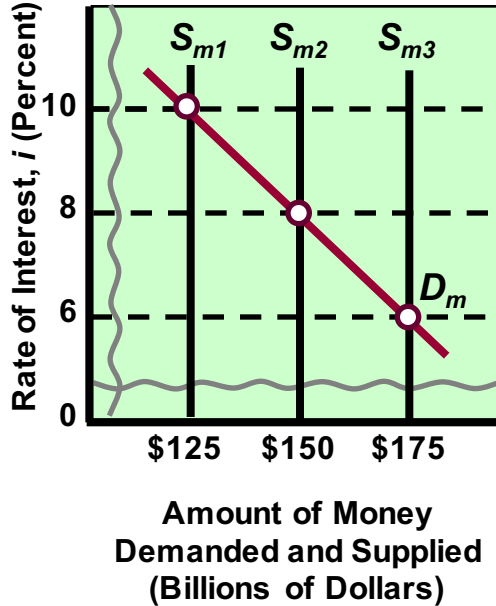
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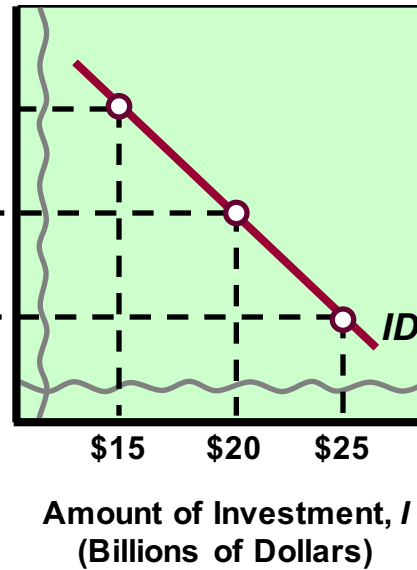
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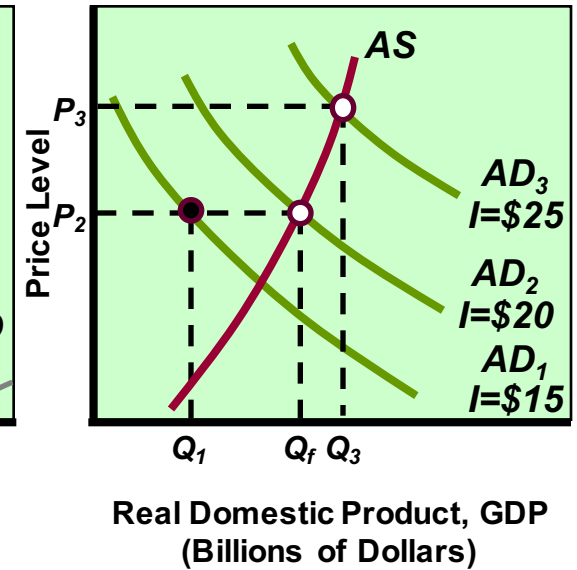
(a)
The Market For Money



(b)
Investment Demand



(c)
Equilibrium Real GDP and the Price Level



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Monetary Policy

Expansionary Monetary Policy

Problem: Unemployment and Recession



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Monetary Policy

Restrictive Monetary Policy

Problem: Inflation

Fed Sells Bonds, Increases Reserve Ratio, or Increases the Discount Rate

Excess Reserves Decrease

Federal Funds Rate Rises

Money Supply Falls

Interest Rate Rises (Bond P ↓)

Investment Spending Decreases

Aggregate Demand Decreases

Inflation Declines

CAUSE-EFFECT CHAIN

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Monetary Policy

- Evaluation and Issues
 - Speed and Flexibility
 - Isolation From Political Pressure
- Problems and Complications
 - Recognition Lag
 - (No Administrative Lag for the Fed – no politics involved)
 - Operational Lag

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Monetary Policy

- Cyclical Asymmetry
- “Artful Management” or “Inflation Targeting”
- “The Big Picture”



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AD-AS Theory of Price Level - Real Output and Stabilization Policy

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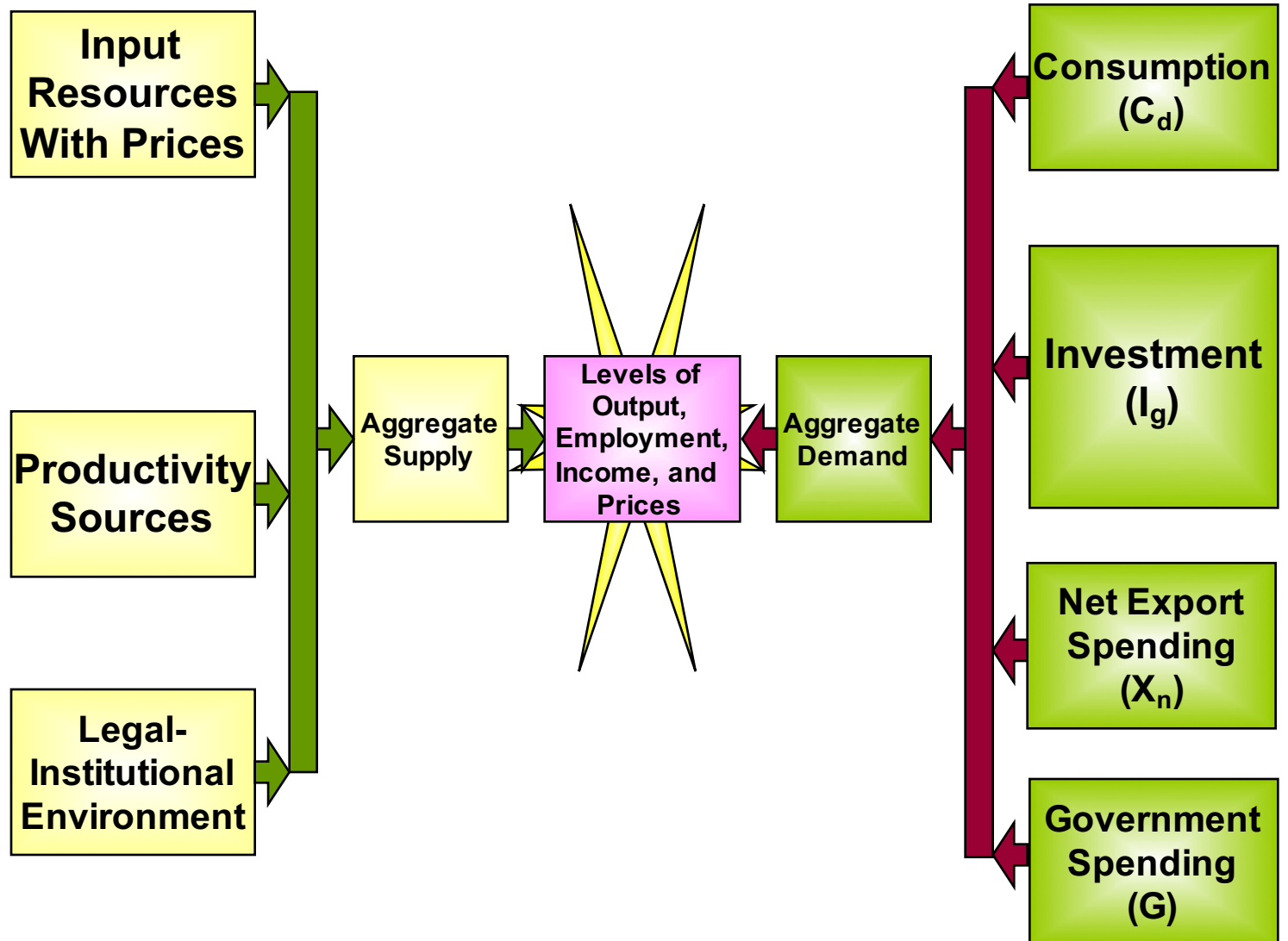
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For the Fed - Life is a Metaphor



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- **The Fed as Mechanic**
- **The Fed as Warrior**
- **The Fed as the Fall Guy**
- **The Fed as Cosmic Force**
- **Really Concerned About Money**

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Key Terms

- monetary policy
- transaction demand
- asset demand
- total demand for money
- reserve ratio
- discount rate
- Federal funds rate
- expansionary monetary policy
- Taylor rule
- cyclical asymmetry
- inflation targeting

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Next Chapter Preview...



Extending The Analysis of Aggregate Supply

Chapter 15!

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