

# **Unit 4:**

# **Money and Monetary Policy**

# Types of PERSONAL Investments



**Assets- Anything of monetary value owned by a person or business.**



# Bonds vs. Stocks

Pretend you are going to start a lemonade stand. You need some money to get your stand started. **What do you do?**

- You ask your grandmother to lend you \$100 and write this down on a piece of paper: "I owe you (IOU) \$100, and I will pay you back in a year plus 5% interest."
- Your grandmother just bought a **bond**.

**Bonds are loans, or IOUs, that represent debt that the government or a corporation must repay to an investor. The bond holder has NO OWNERSHIP of the company.**

**Ex: War Bonds During World War II**

**But, now you need more money...**

- To get more money, you sell half of your company for \$50 to your brother Tom.
- You put this transaction in writing: "Lemo will issue 100 **shares of stock**. Tom will buy 50 shares for \$50."
- Tom has just bought 50% of the business. He is allowed to make decisions and is entitled to a percent of the profits

### Stockowners can earn a profit in two ways:

1. **Dividends**, which are portions of a corporation's profits, are paid out to stockholders.  
**The higher the corporate profit, the higher the dividend.**
2. A **capital gain** is earned when a stockholder sells stock for more than he or she paid for it.  
A stockholder that sells stock at a lower price than the purchase price suffers a **capital loss**.

# Money

# WHY DO WE HAVE MONEY?

**What would life be like if we didn't have money?**

**The Barter System: goods and services are traded directly. No Money.**

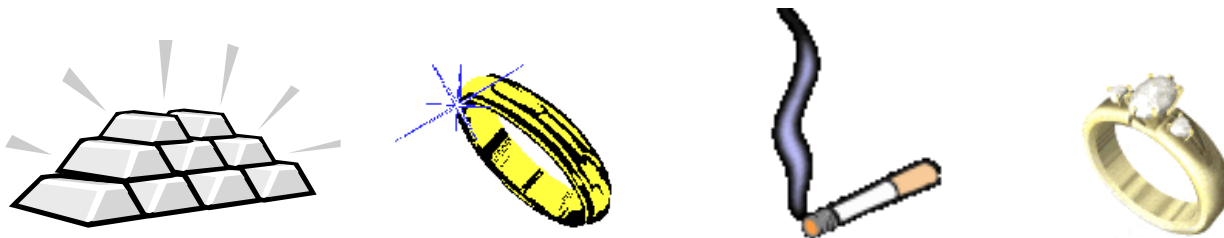
**Problems:**

- 1. Before trade could occur, each trader had to have something the other wanted.**
- 2. Some goods cannot be split. If 1 goat is worth five chickens, how do you exchange if you only want 1 chicken?**

**You better break out the chainsaw!**

# Examples of Money

- **Commodity Money:** something that performs the function of money and has alternative, non-monetary uses.
  - **Examples: Gold, silver, cigarettes, etc.**



- **Fiat Money:** something that serves as money but has no other important uses.
  - **Paper notes**
  - **Coins**



# 3 FUNCTIONS OF MONEY

## 1. A Medium of Exchange

- Money can easily be used to buy goods and services with no complications of barter system.

## 2. A Unit of Account

- Money measures the value of all goods and services. Money acts as measurement of value.
- 1 goat = \$50 = 5 chickens OR 1 chicken = \$10

## 3. A Store of Value

- Money allows you to store purchasing power for the future.
- Money doesn't die or spoil.



# WHAT ABOUT CREDIT CARDS?

- A credit card is **NOT** money, it is a short-term loan (Usually with higher than normal interest rate).

**Ex: You buy a shirt with a credit card, VISA pays the store, you pay VISA the price of the shirt plus interest and fees.**



# WHAT BACKS THE MONEY SUPPLY?

There is no gold standard. Money is just an I.O.U. from the government “for all debts, public and private.”

## What makes money effective?

1. Generally Accepted- Buyers and sellers have confidence that it IS legal tender
2. Scarce- Money must not be easily reproduced
3. Portable and Dividable- Money must be easily transported and divided.

The **Purchasing Power** of money is the amount of goods and services an unit of money can buy.

Inflation (increases/decreases) purchasing power.  
Rapid inflation (increases/decreases) acceptability.

# **The Money Market**

## **(Supply and Demand for Money)**

# THE DEMAND FOR MONEY

At any given time, people demand a certain amount on money:

1. **Transaction demand: money demanded for everyday purchases.**
2. **Asset demand: cash money demanded to store value for a rainy day.**

1. What is the price paid for the use of money?

**The Interest Rate OR “i”**

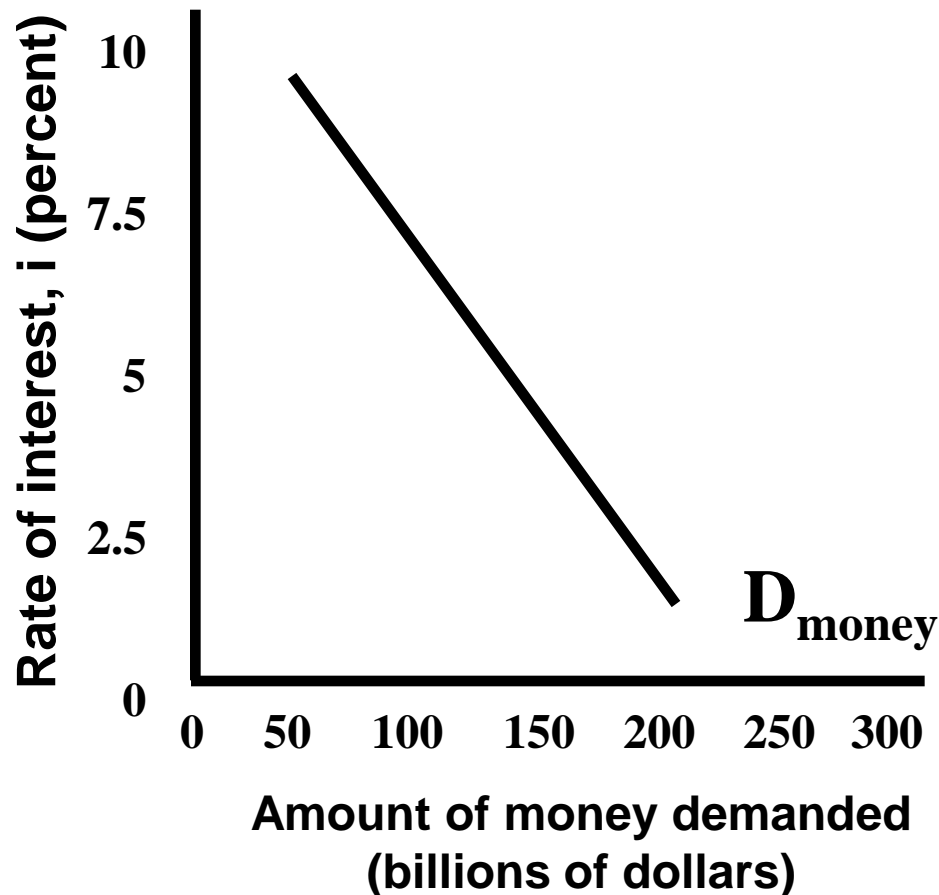
2. What is the relationship between the interest rate and the quantity demand for money?

**Inverse relationship**

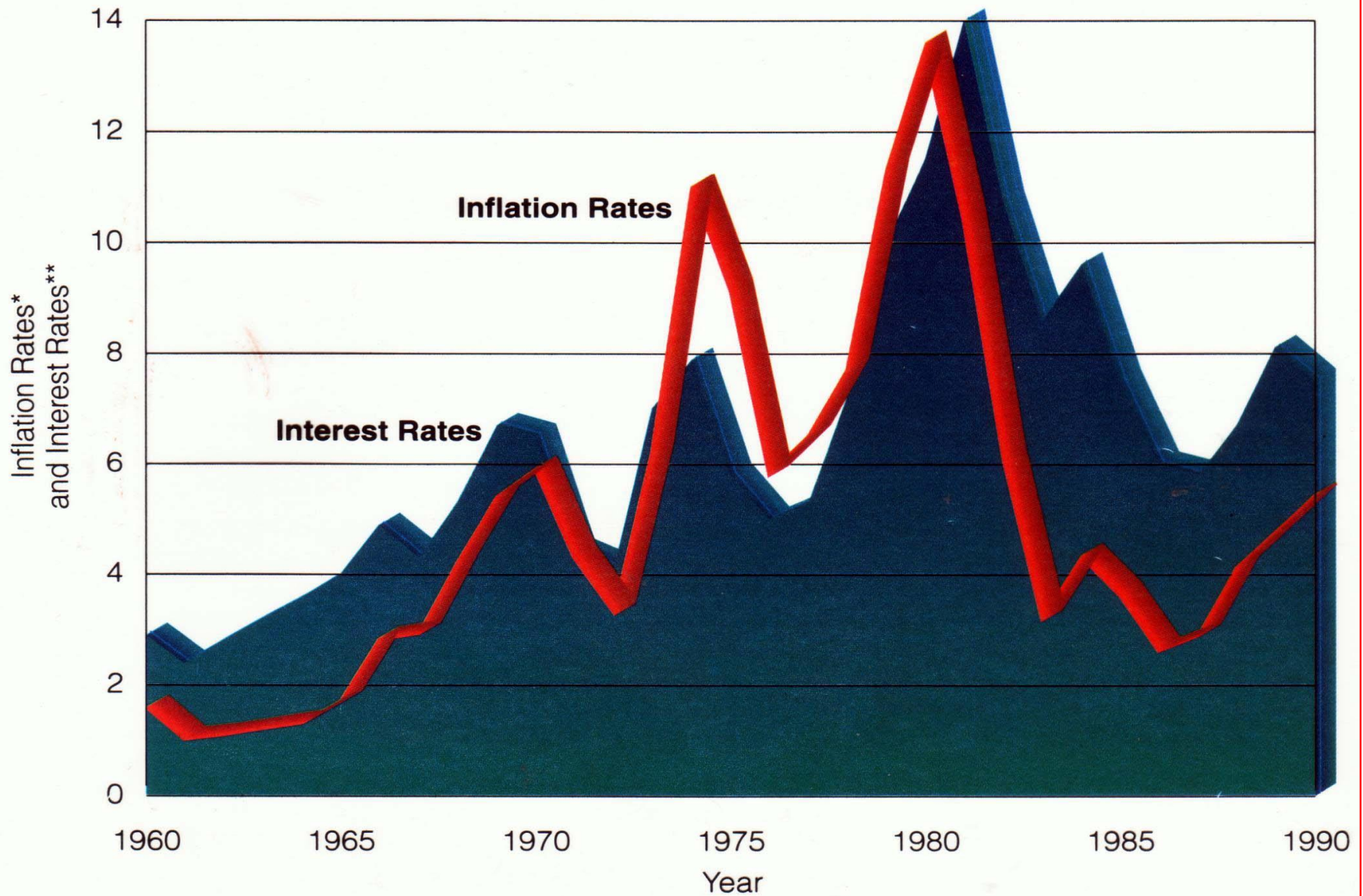
3. Why do people demand less money when interest rates are high?

# THE DEMAND FOR MONEY

- As interest rate increases the quantity demanded for money falls
- People put money into stocks or bonds instead of hold it due to higher opportunity cost.

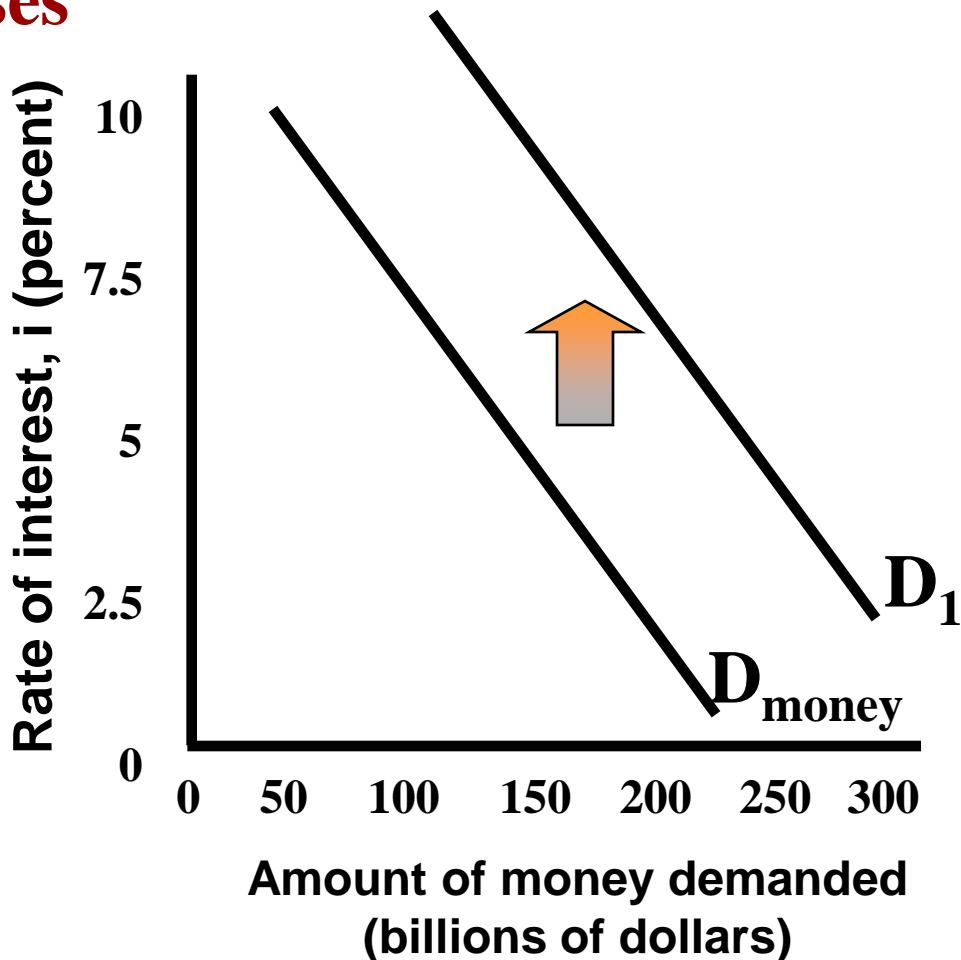


# Inflation and the Interest Rate



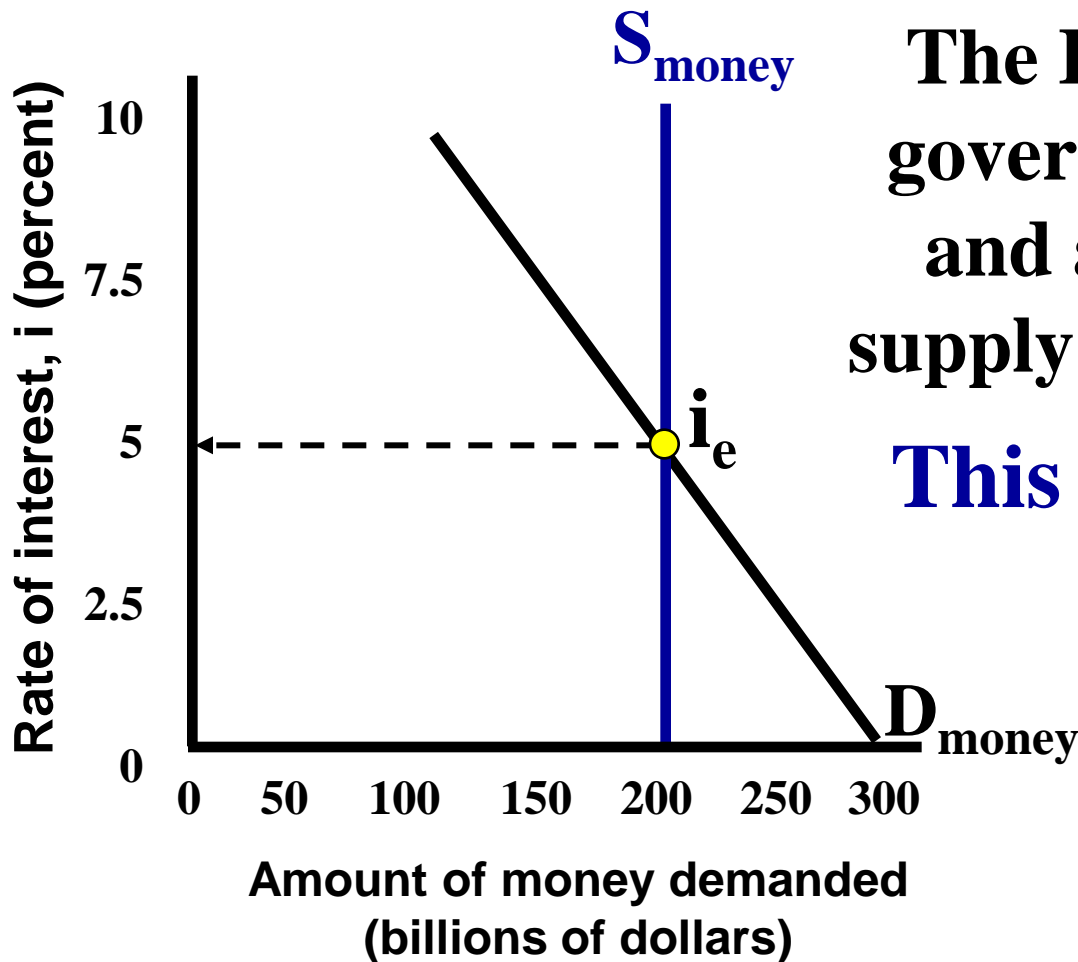
# Why are Price Level and interest rates directly related?

- When Price Level increases, people need more money.
- The demand for money increases. So...
- $i$  increases



# THE SUPPLY OF MONEY

In the U.S. the Money Supply is set by the Board of Governors of the Federal Reserve System (FED)

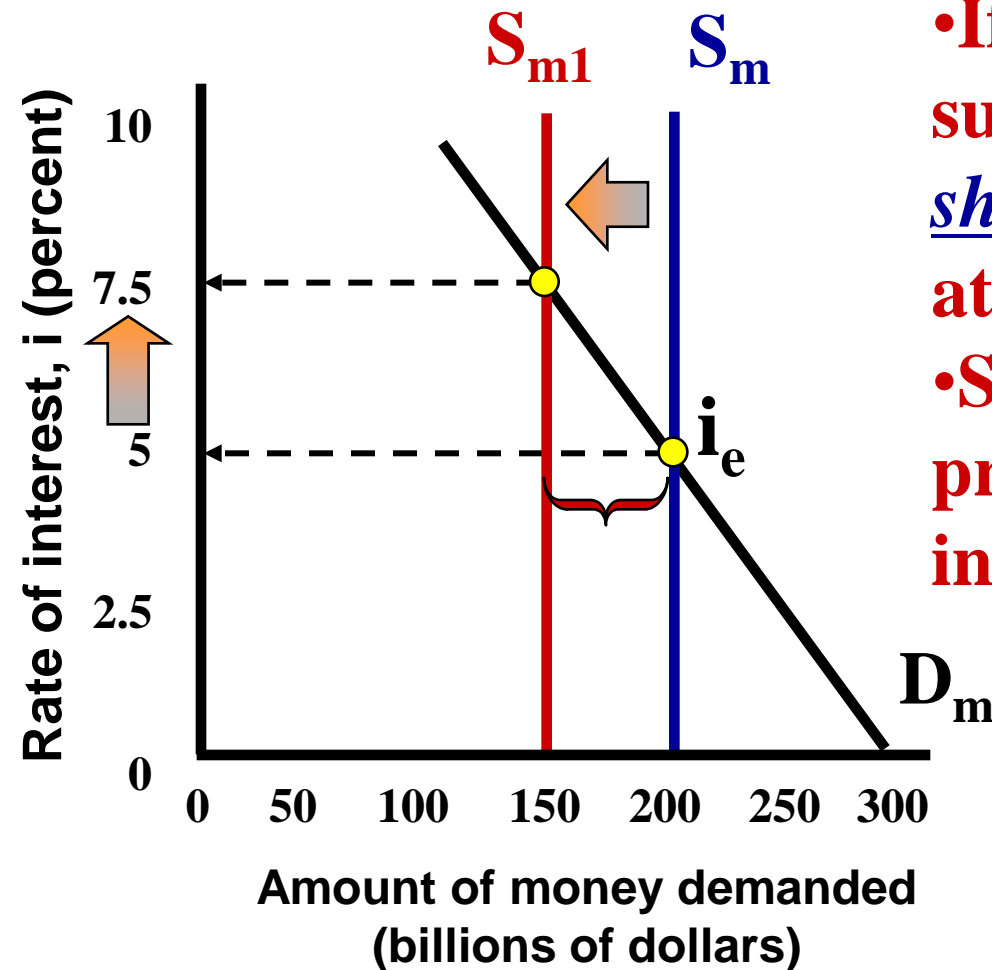


The FED is a nonpartisan government office that sets and adjusting the money supply to adjust the economy

This is called Monetary Policy.



# Decreasing the Money Supply

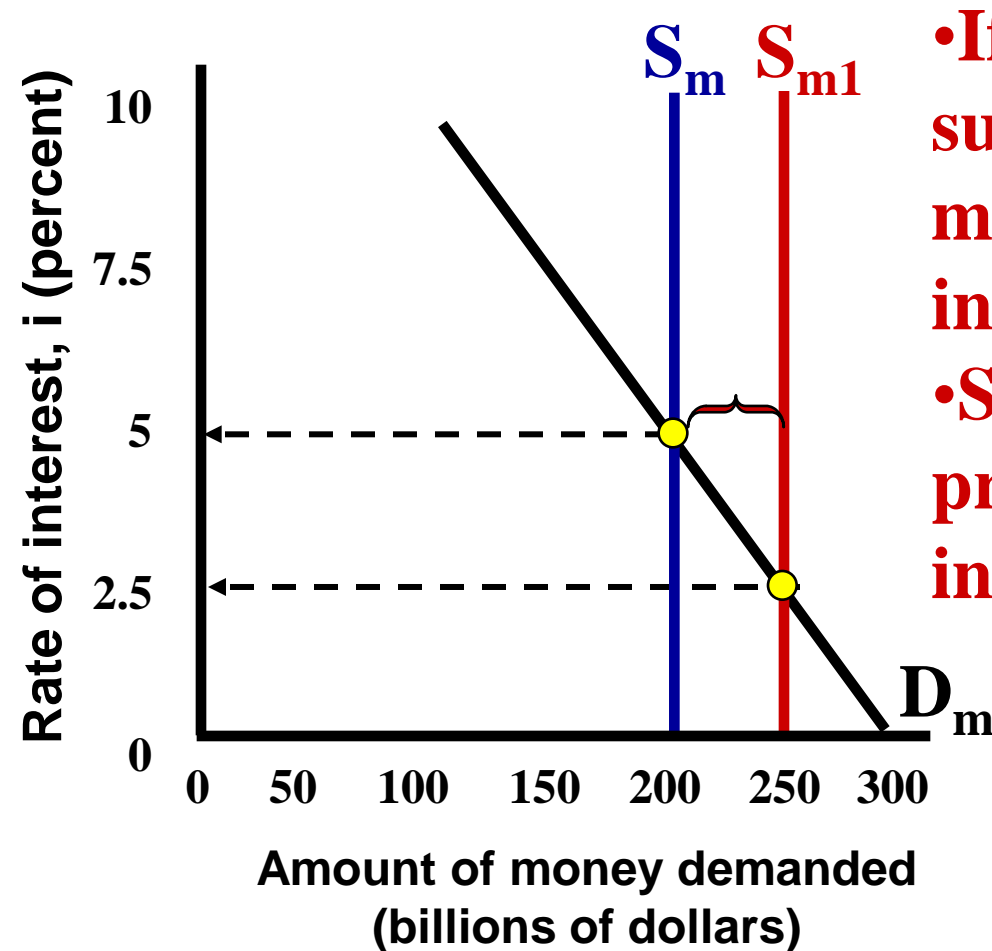


- If there is a decrease in supply, a temporary shortage of money will occur at 5% interest.
- Shortage drives up the price to acquire money (the interest rate).

How does this affect AD?

Decreased money supply → Increased interest rate → Decreased investment → Decreased AD

# Increasing the Money Supply



- If there is an increase in supply, a temporary surplus of money will occur at 5% interest.
- Surplus drives down the price to acquire money (the interest rate).

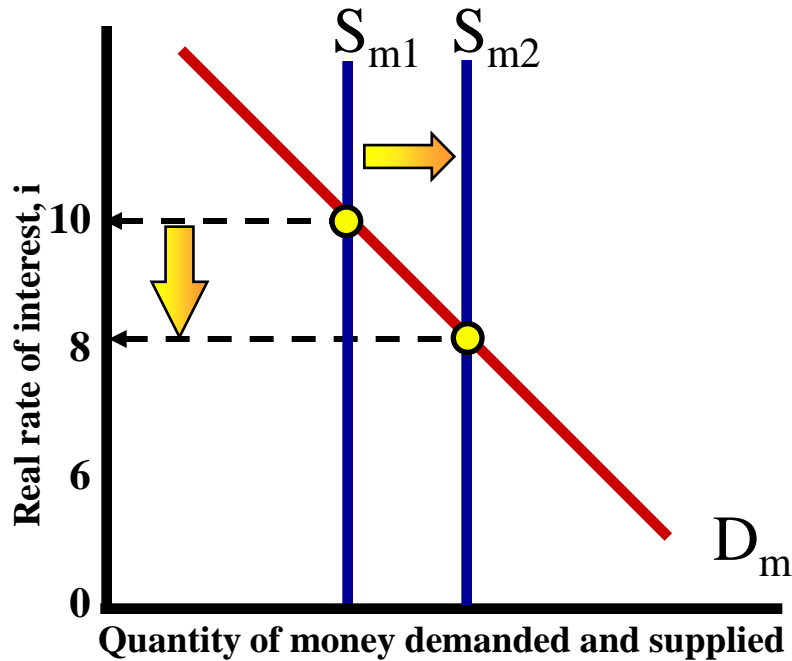
How does this affect AD?

Increase money supply → Decreases interest rate → Increases investment → Increases AD

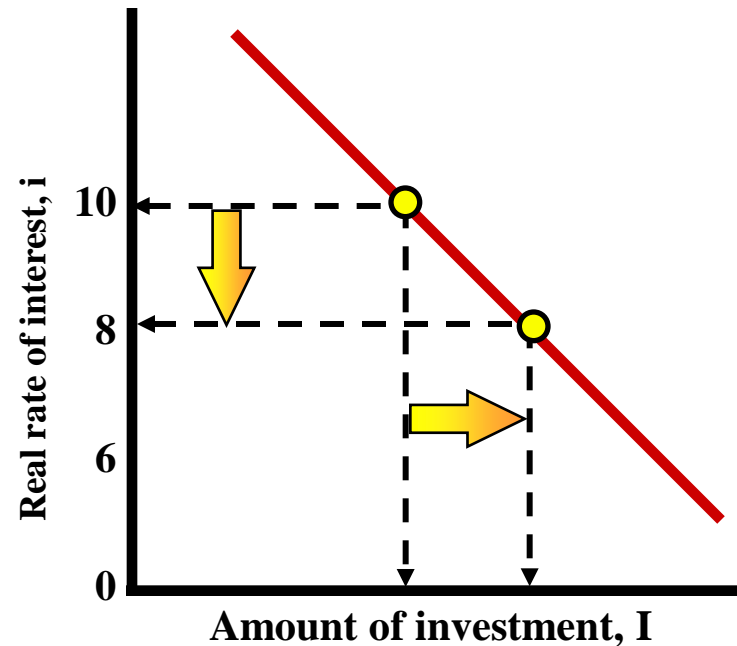
# **Showing the Effects of Monetary Policy Graphically**

## **The Keynesian 3 Step Transmission**

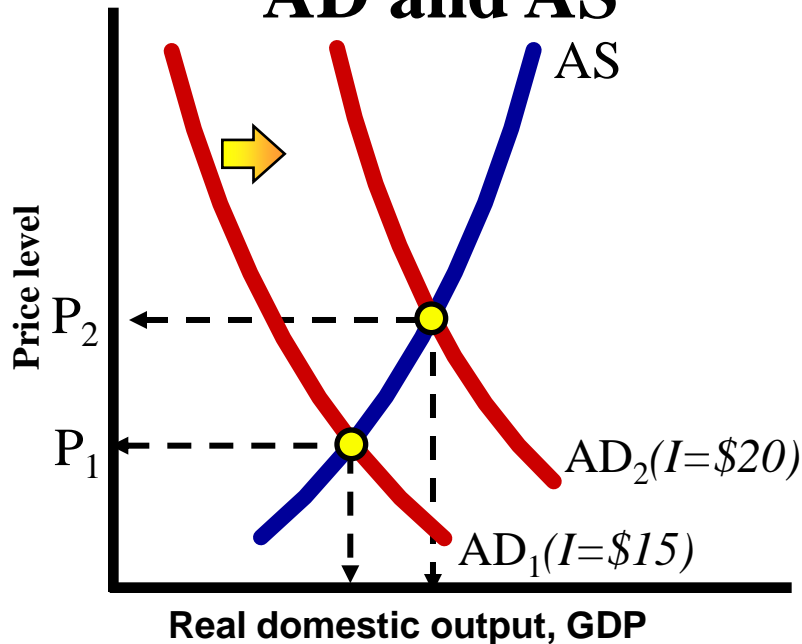
# S&D of Money



# Investment Demand



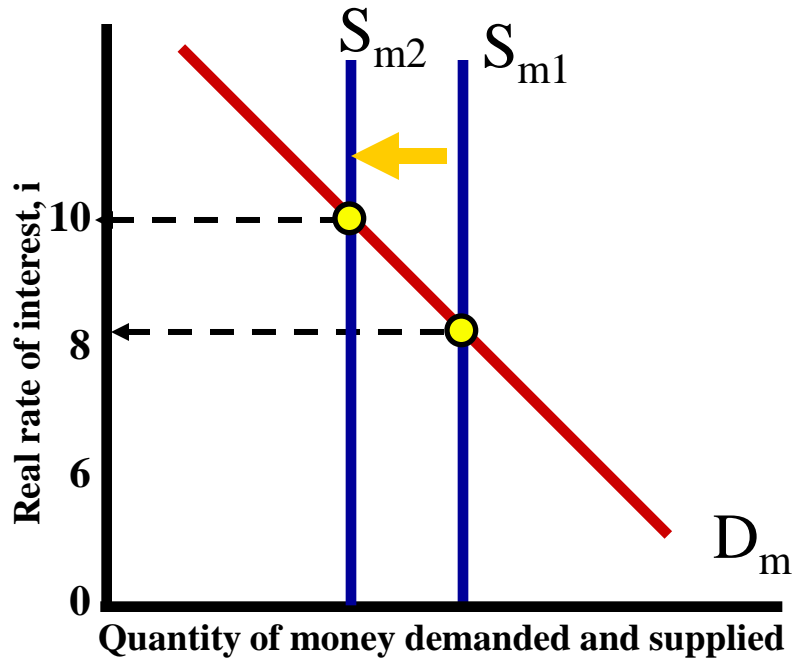
# AD and AS



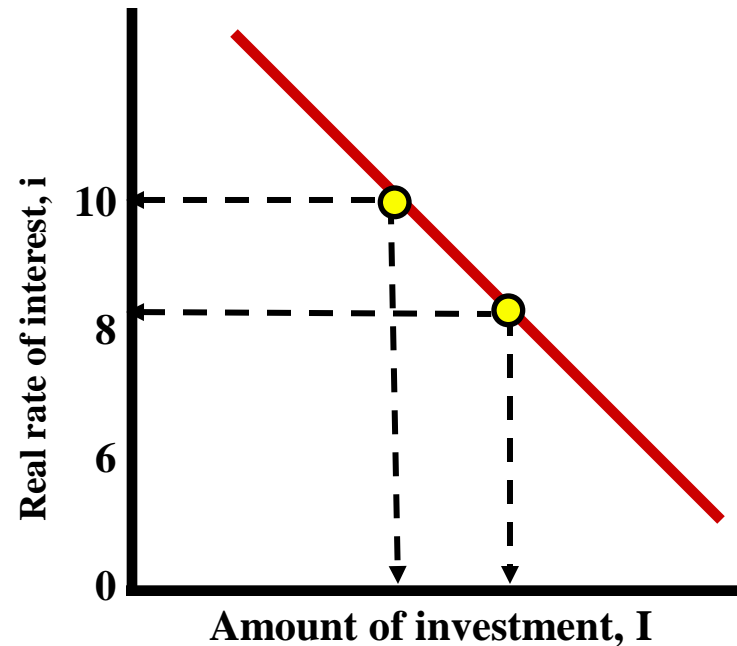
**If the Money Supply Increases to Stimulate the Economy...**

- **Interest Rate Decreases**
- **Investment Increases**
- **AD & GDP Increases with slight inflation**

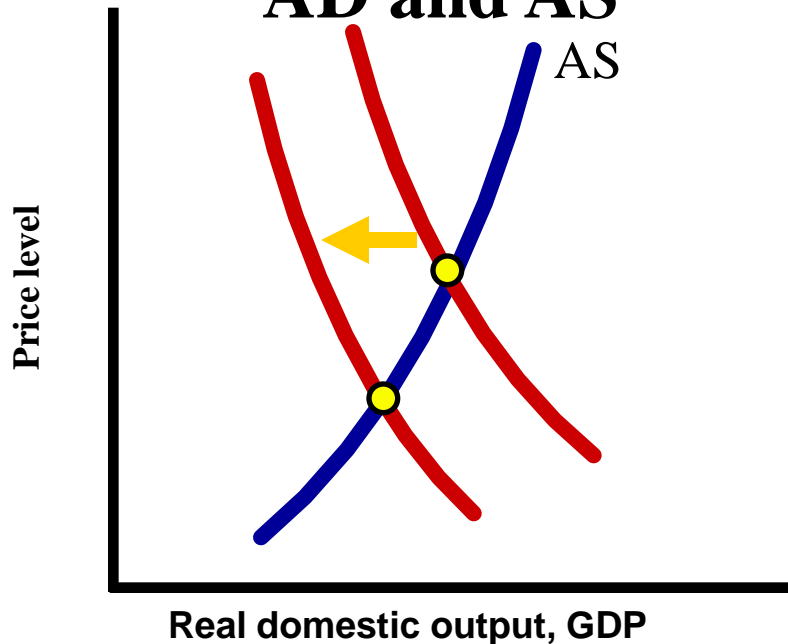
# S&D of Money



# Investment Demand



# AD and AS



**If the Money Supply Decreases to contract the Economy...**

- **Interest Rate increase**
- **Investment decrease**
- **AD & GDP decrease**

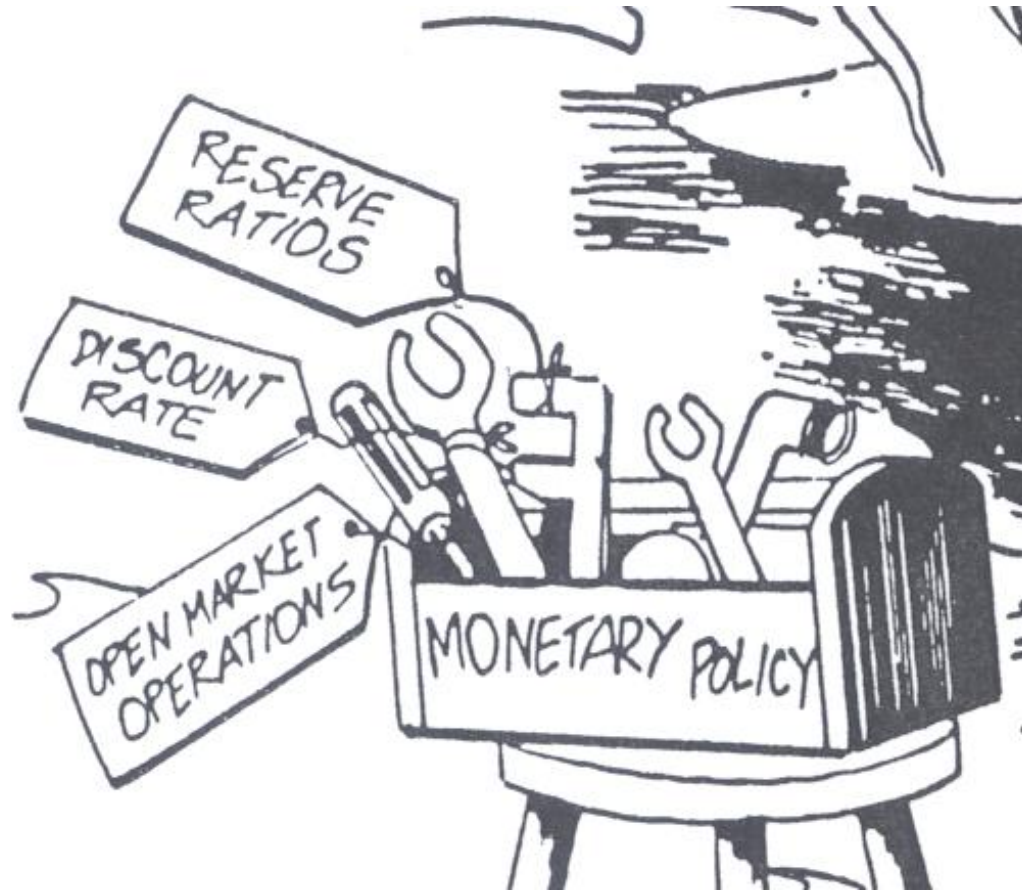
# **THE FED**

## **Monetary Policy**

# How the Government Stabilizes the Economy



# How the FED Stabilizes the Economy





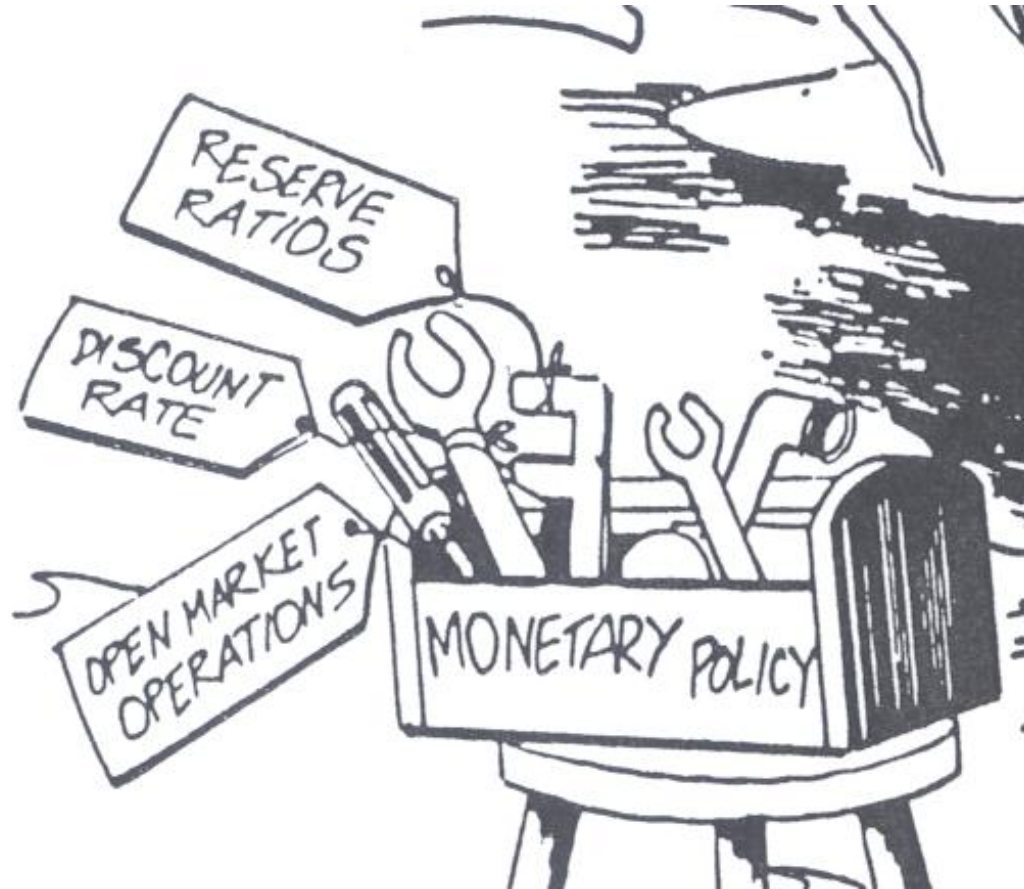
# **THE FEDERAL RESERVE AND THE BANKING SYSTEM**

**The FED regulates the economy by adjusting the money supply by ...**

- 1. Setting Reserve Requirements (Ratios)**
- 2. Lending Money to Banks & Thrifts**
  - Discount Rate**
- 3. Open Market Operations**
  - Buying and selling Bonds**

**The FED is now chaired by Ben Bernanke**

# Tools to adjust the Money Supply



# The Reserve Requirement

The Reserve Requirement or “reserve ratio” is the percent of deposits that banks must hold in reserve (The percent they can NOT loan out).

**Example: Reserve ratio = .10 or 10%**

- You deposit \$1000 in the bank
- The bank must hold \$100. It lends \$900 out to Bob.
- Bob deposits the \$900 in his bank.
- Bob’s bank must hold \$90. It loans out \$810 to Jill.
- Jill deposits \$810 in her bank.

**SO FAR, an increase of \$1000 has cause the CREATION of another \$1710 (Bob’s \$900 + Jill’s \$810)**

**This demonstrates the MONEY  
MULTIPLIER**

# THE MONEY MULTIPLIER

- An increase in bank deposits results in a larger increase in money and checkable deposits.
- As banks loan out their excess reserves, the loan becomes deposits for another bank that will loan out their excess reserves.

$$\text{Monetary Multiplier} = \frac{1}{\text{Reserve Requirement (ratio)}}$$

## Example:

- If the reserve requirements is .20 and the money supply increases by 2 Billion dollars. How much the money supply actually increase?

# Adjusting the Reserve Requirement

1. If there is a recession, what should the FED do to the reserve requirement? (Explain the steps)
2. If there is inflation, what should the FED do to the reserve requirement? (Explain the steps)

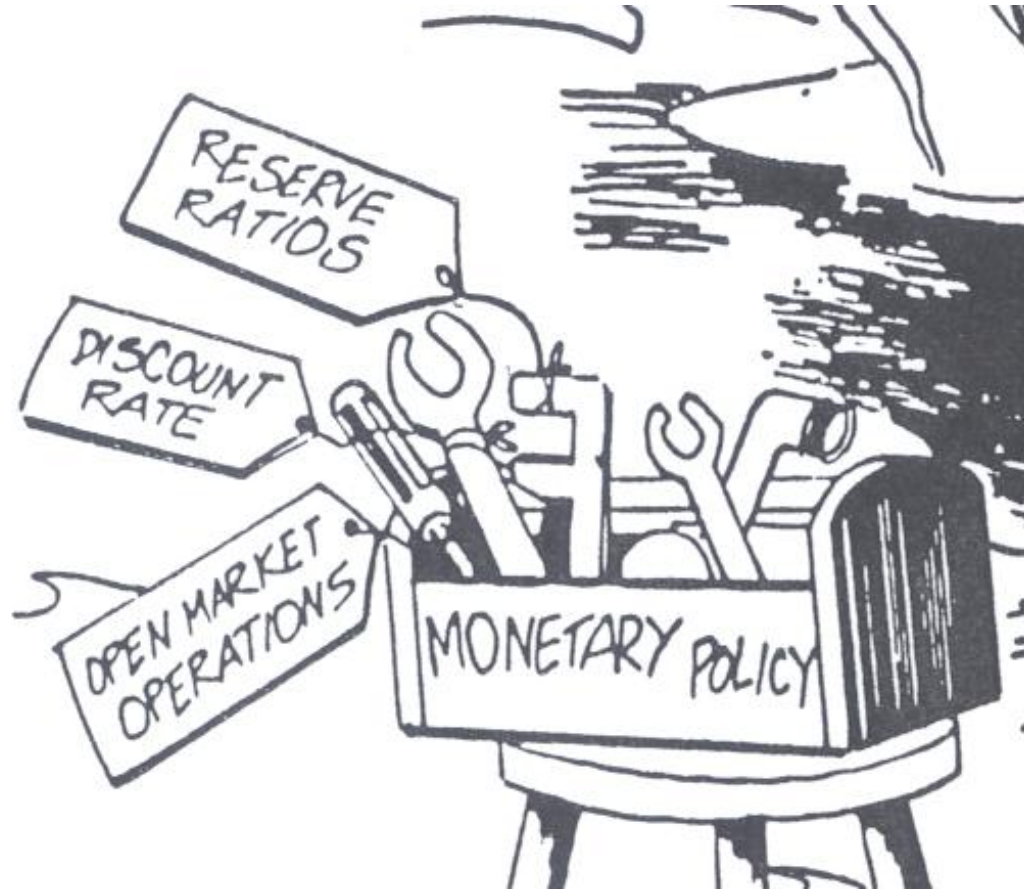
## Raising the Reserve Ratio

- Banks must hold more reserves
- Banks create less money as they decrease lending
- Money supply decreases

## Lowering the Reserve Ratio

- Banks may hold less reserves
- Banks create more money as they increase lending
- Money supply increases

# Tools to adjust the Money Supply



# The Discount Rate

**The Discount Rate is the interest rate that the FED charges commercial banks.**

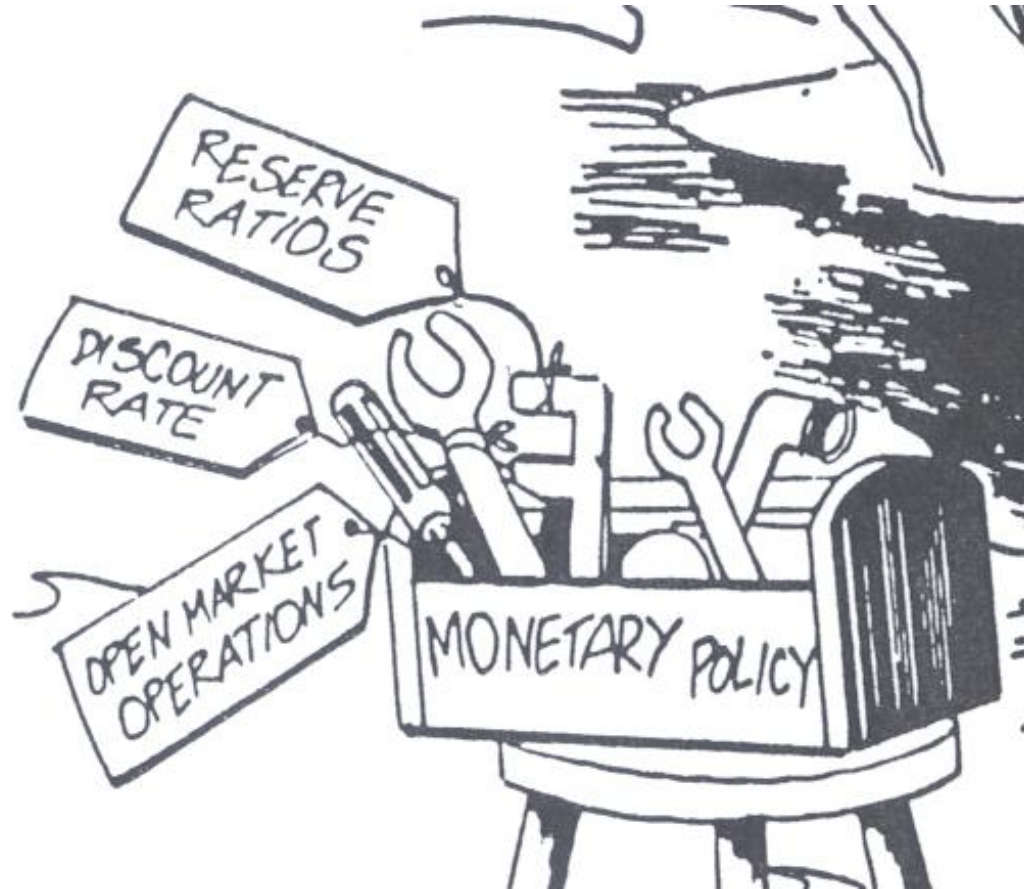
**Example:**

**•If Banks of America needs \$10 million, they borrow it from the U.S. Treasury (which the FED controls) but they must pay it bank with 3% interest.**

**To increase the Money supply, the FED should DECREASE the Discount Rate (Easy Money Policy).**

**To decrease the Money supply, the FED should INCREASE the Discount Rate (Tight Money Policy).**

# Tools to adjust the Money Supply



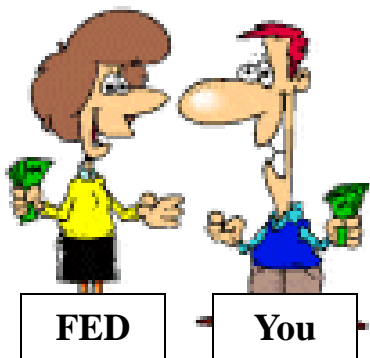


# Open market Operations

- **Open Market Operations** is when the **FED** buys or sells government bonds (securities).
- This is the most widely used monetary policy and the most often tested.

To increase the Money supply, the FED should BUY government securities.

To decrease the Money supply, the FED should SELL government securities.



**How are you going to remember?**

**When the government sells bonds, you give them money. This decreases the money supply.**

# Practice

**Don't forget the Money Multiplier!!!!**

- 1. If the reserve requirement is .5 and the FED sells \$10 million of bonds, what will happen to the money supply?**
- 2. If the reserve requirement is .1 and the FED buys \$10 million bonds, what will happen to the money supply?**

# **Real and Nominal Interest Rates**

# Nominal vs. Real Interest Rates

## Example:

- You lend out \$100 with 20% interest.
- Prices are expected to increase 15%
- In a year you get paid back \$120.
- **What is the nominal and what is the real interest rate?**
- The Nominal interest rate is 20%
- The Real interest rate was only 5%
- In reality, you get paid back an amount with less purchasing power.

**Nominal Interest Rates**- the percentage increase in money that the borrower pays including inflation.

**Nominal = real interest rate + expected inflation**

**Real Interest Rates**-The percentage increase in purchasing power that a borrower pays. (adjusted for inflation)

**Real = nominal interest rate - expected inflation**

# Nominal vs. Real Interest Rates

## Example #2:

- You lend out \$100 with 10% interest.
- Prices are expected to increase 20%
- In a year you get paid back \$110.
- **What is the nominal and what is the real interest rate?**
- The Nominal interest rate is 10%
- The Real interest rate was only -10%
- In reality, you get paid back an amount with less purchasing power.

So far we have only been looking at  
**NOMINAL** interest rates

# **Loanable Funds Market**

# Loanable Funds Market

- The private sector supply and demand of loanable money.
- This shows the effect on **REAL INTEREST RATE**
- **Demand-** Inverse relationship between real interest rate and quantity loans demanded
- **Supply-** Direct relationship between real interest rate and quantity loans supplied
- What is the result of deficit spending?
  - Government borrows from private sector
  - Increasing demand for loanable funds
  - Increases the **REAL** interest rate. **SO...**

**This IS the Crowding Out Effect!!**

# The Phillips Curve

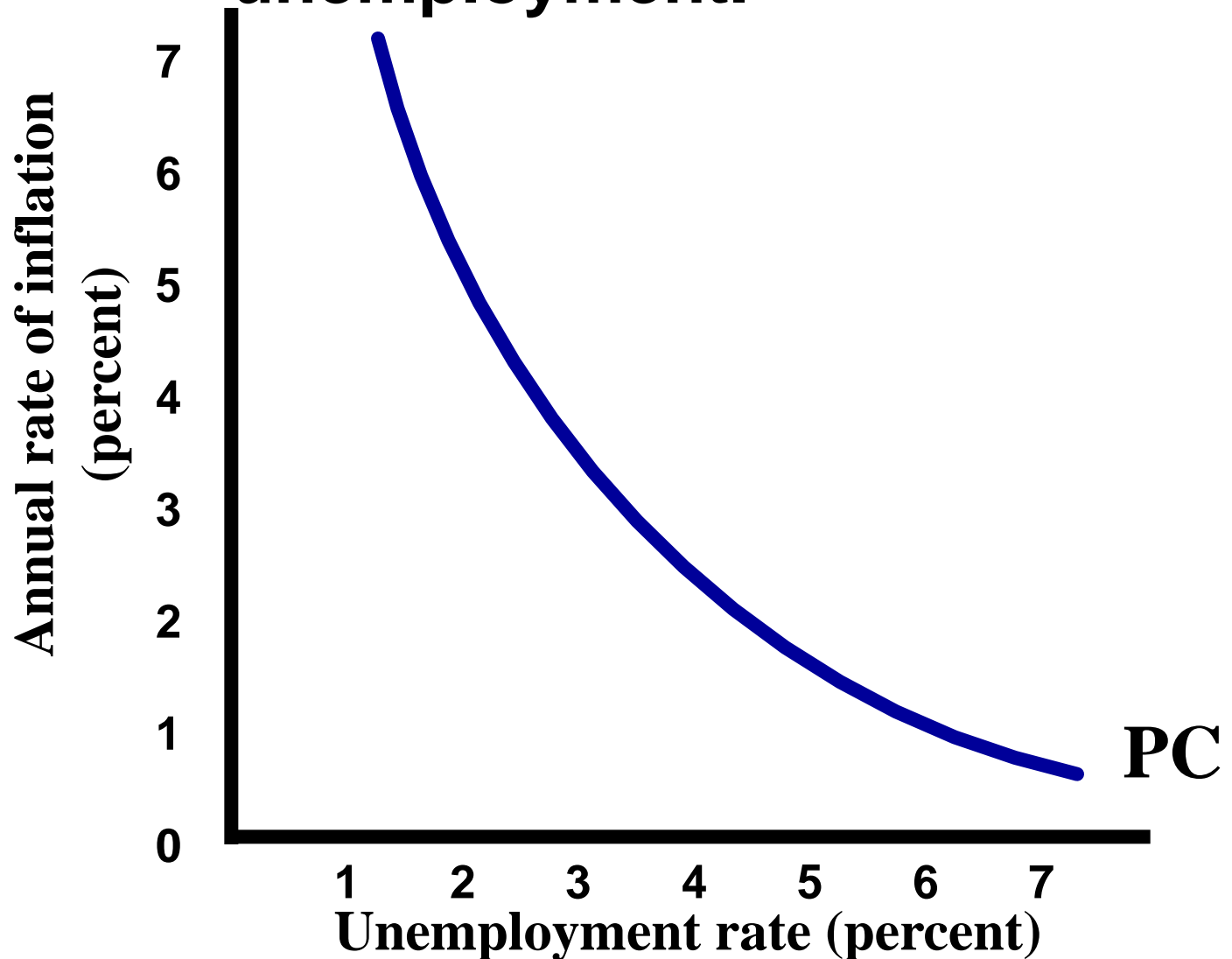
**Shows relationship between inflation  
and unemployment.**

**What happens to inflation and  
unemployment when AD increase?**



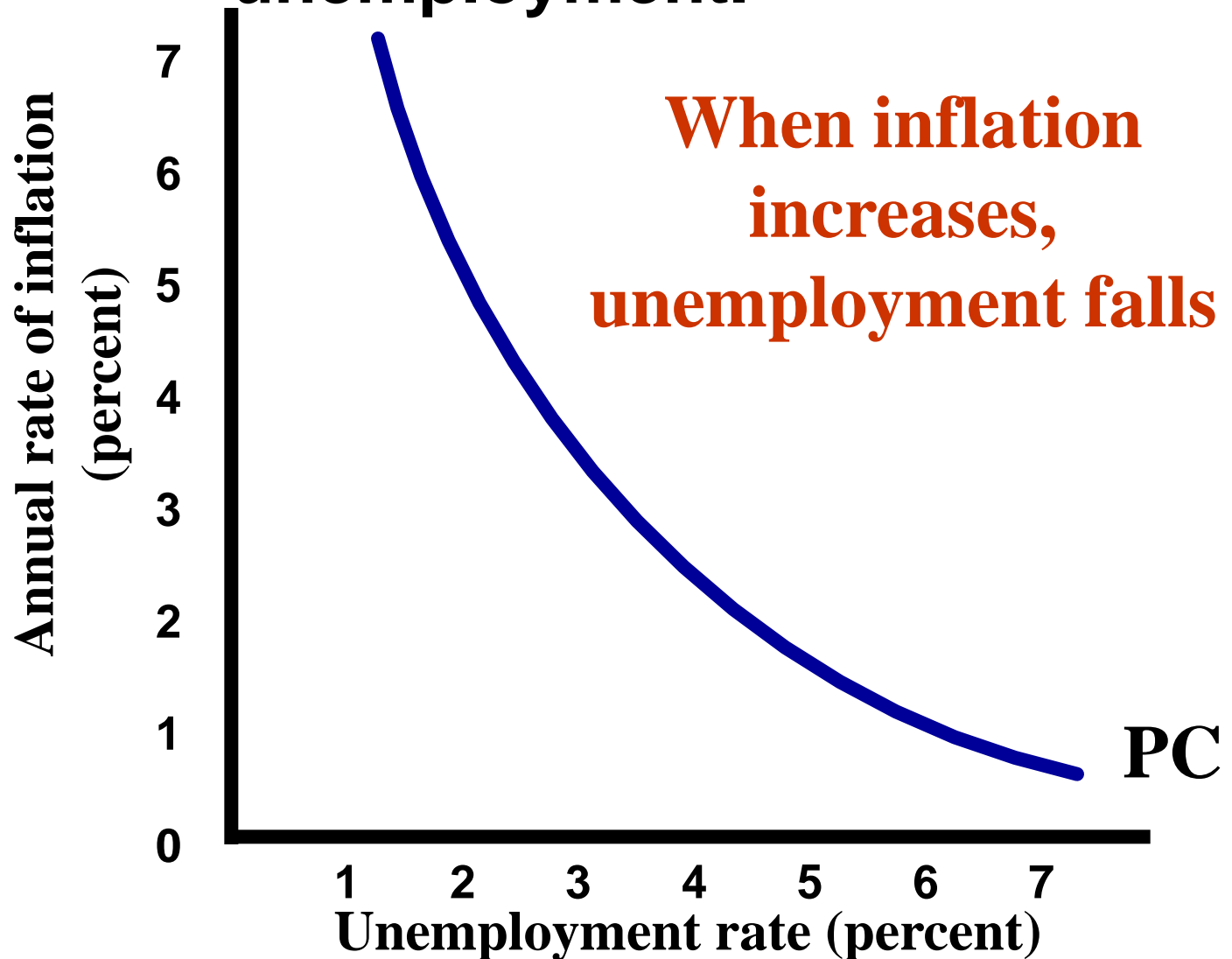
# THE SHORT RUN PHILLIPS CURVE

Inverse relationship between inflation and unemployment.



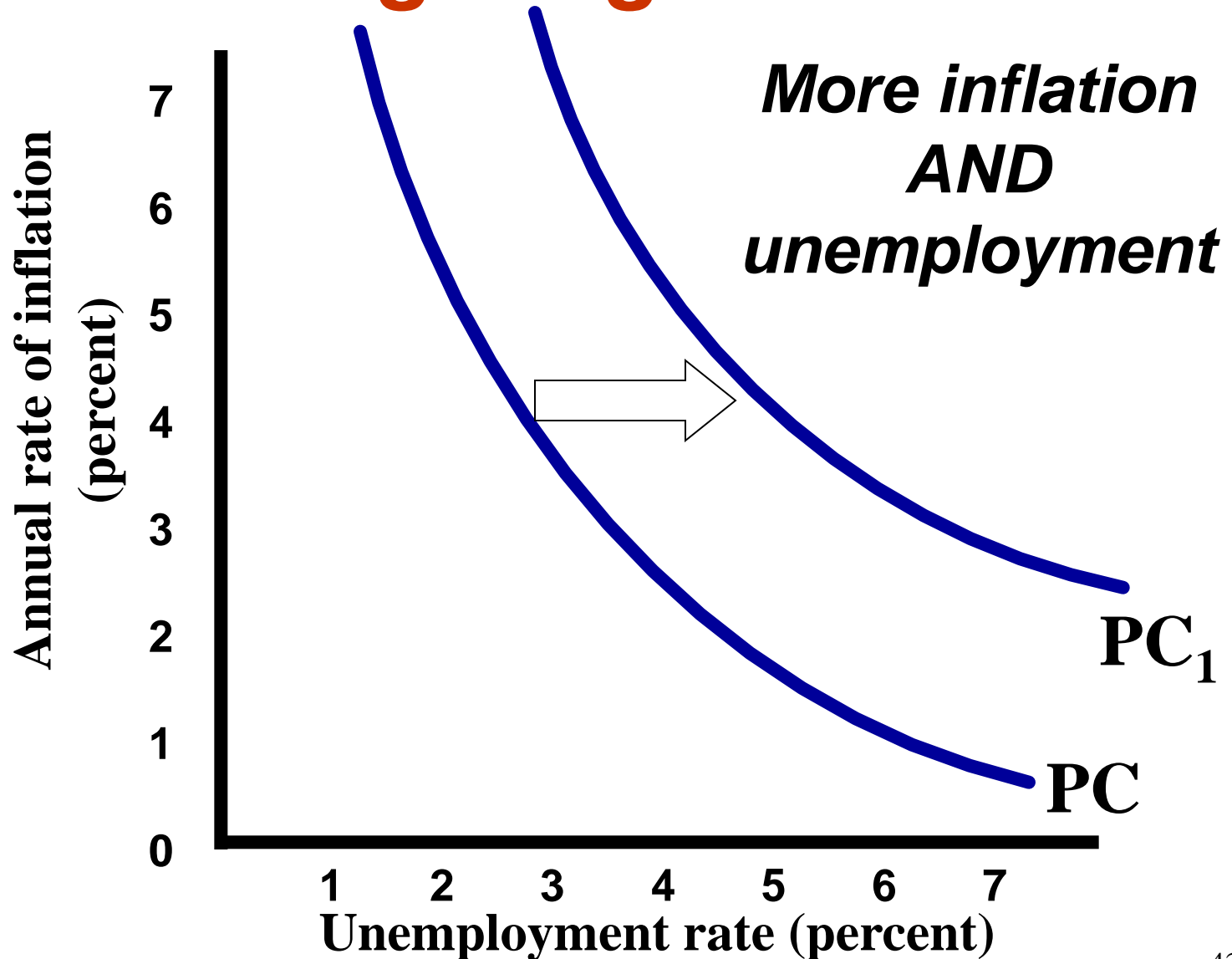
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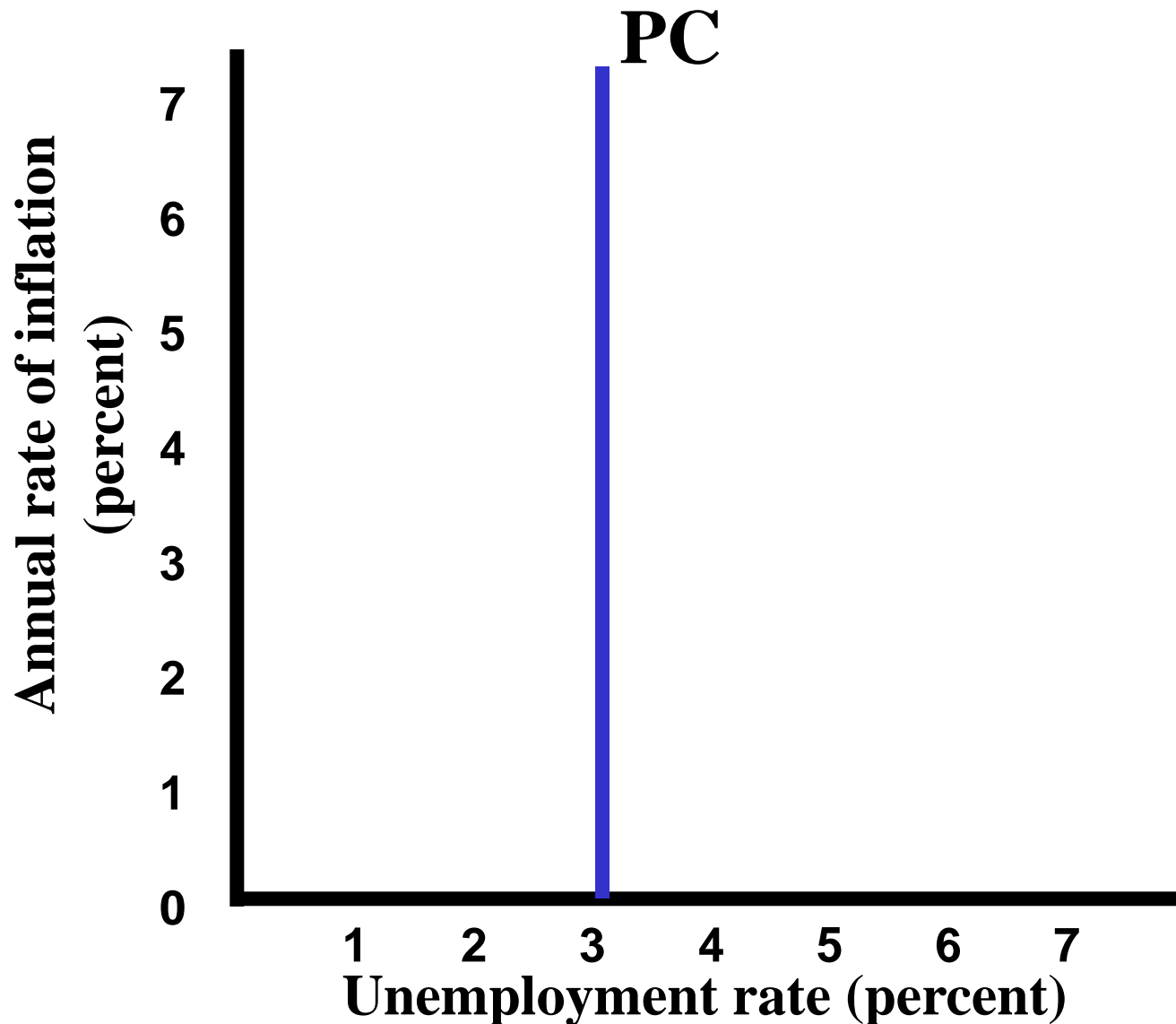
# THE SHORT RUN PHILLIPS CURVE

## *Showing Stagflation*



# THE LONG RUN PHILLIPS CURVE

*NO tradeoff between inflation and unemployment*



# THE LONG RUN PHILLIPS CURVE

