

**Unit 01: Basic Concepts (Macro/Micro)**

**Scarcity**

**The Economic Problem:**

Unlimited wants, limited economic resources

**Factors of Production:**

- Land
- Labor
- Capital
- Entrepreneurship

**Big 3 Questions:**

- What to produce?
- How to produce?
- For whom to produce?

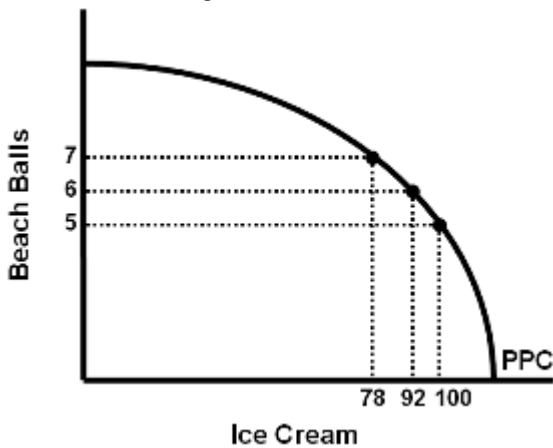
**Opportunity Cost:**

Best forgone alternative

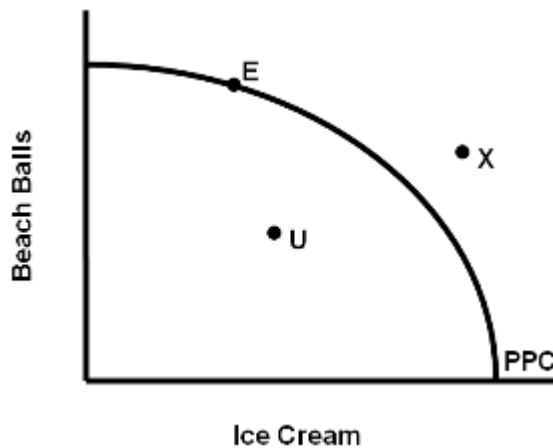
**Production Possibilities Curve:**

Shows the opportunity costs of producing two goods

Law of Increasing Costs



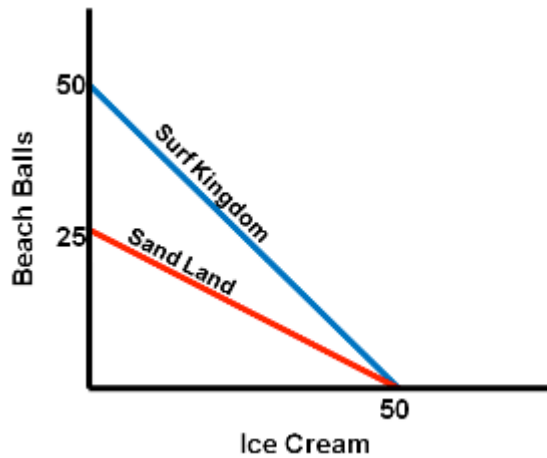
To produce more beach balls, you must give up ever increasing quantities of ice cream cones.



Point E = Full employment & productive efficiency  
 Point U = Unemployed resources  
 Point X = Unattainable in the present

**Absolute Advantage:**

Who can produce more?



Surf Kingdom has the absolute advantage in beach ball production.

	Beach Balls	Ice Cream Cones
Surf Kingdom	50	50
Sand Land	25	50

**Comparative Advantage:**

Who can produce at the lowest opportunity cost?

	Beach Balls	Cost of 1 Beach Ball	Ice Cream Cones	Cost of 1 Ice Cream Cone
Surf Kingdom	50	1 Ice Cream Cone	50	1 Beach Ball
Sand Land	25	2 Ice Cream Cones	50	1/2 Beach Ball

**Surf Kingdom** has the comparative advantage in beach balls and **Sand Land** has the comparative advantage in ice cream.

**Specialization & Trade:**

Whichever country has the comparative advantage will specialize in the production of that good.

**Surf Kingdom** will produce beach balls and import ice cream cones.

	Beach Balls	Cost of 1 Beach Ball	Ice Cream Cones	Cost of 1 Ice Cream Cone
Surf Kingdom	50	1 Ice Cream Cone	50	1 Beach Ball

Trade: Must receive more than 1 ice cream cone for each beach ball (or export less than 1 beach ball for each ice cream cone they import).

Sand Land will specialize in ice cream and import beach balls.

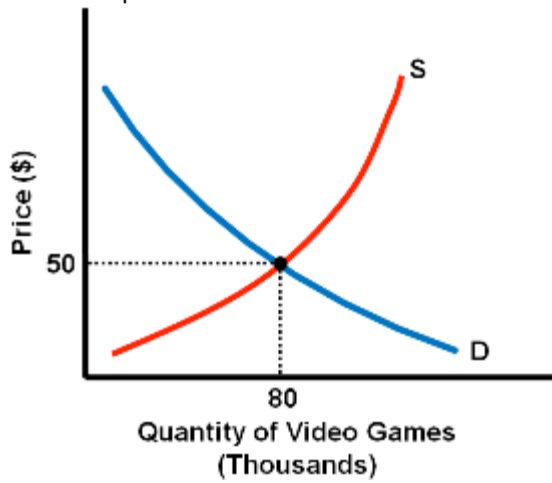
	Beach Balls	Cost of 1 Beach Ball	Ice Cream Cones	Cost of 1 Ice Cream Cone
Sand Land	25	2 Ice Cream Cones	50	½ Beach Ball

Trade: Must receive more than ½ beach ball for each ice cream cone (or export fewer than 2 ice cream cones for each beach ball they import).

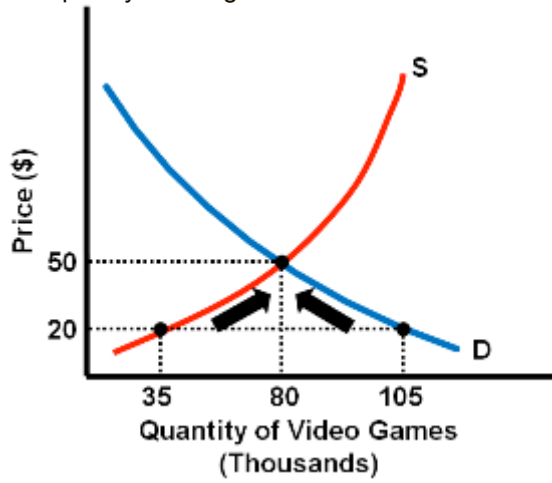
Acceptable terms of trade: 1 beach ball for 1.5 ice cream cones.

**Supply & Demand**

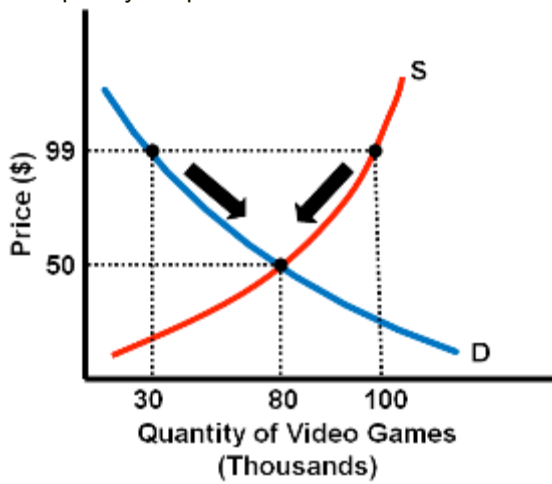
Market Equilibrium



### Temporary Shortage



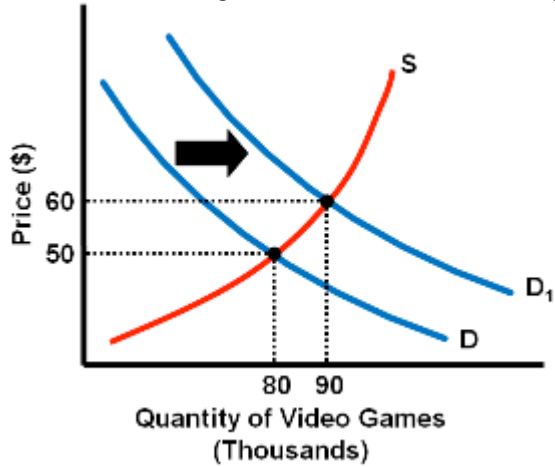
### Temporary Surplus



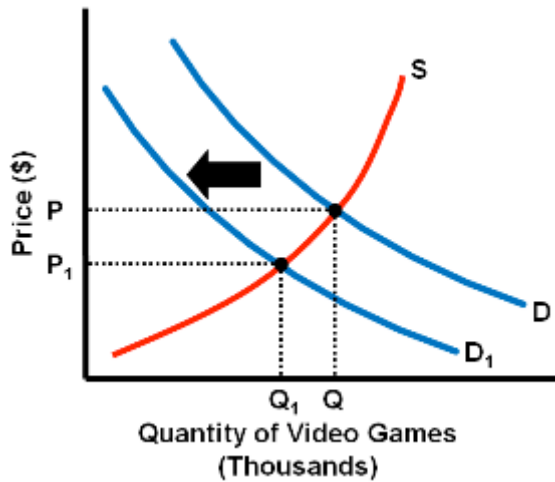
### Demand Shifters:

- Tastes
- Income (Normal/Inferior Goods)
- Number of Buyers
- Future Price Expectations
- Prices of Substitutes
- Prices of Complements

Demand Shifts Right: Price Increases, Quantity Increases



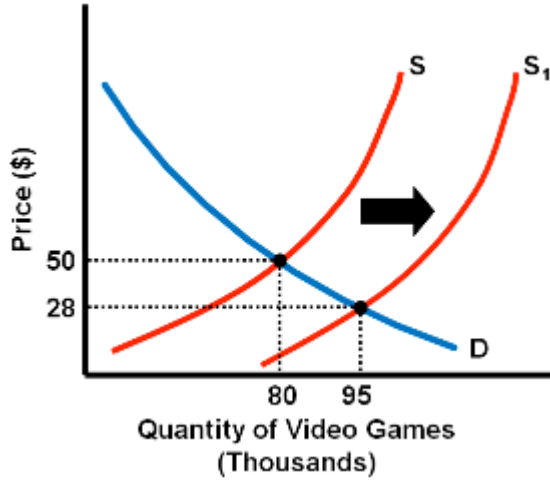
Demand Shifts Left: Price Decreases, Quantity Decreases



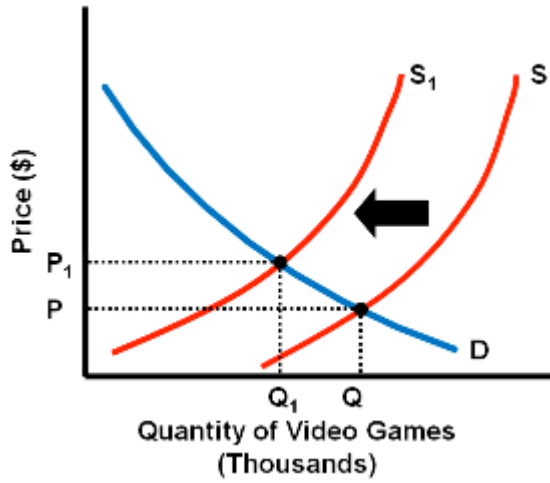
**Supply Shifters:**

- Resource Costs
- Actions of the Government (Taxes/Subsidies)
- Number of Sellers
- Productivity
- Future Price Expectations
- Prices of Goods that Use Same Resources

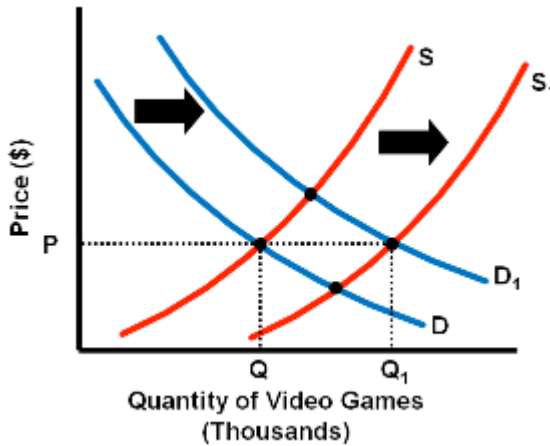
Supply Shifts Right: Price Decreases, Quantity Increases



Supply Shifts Left: Price Increases, Quantity Decreases

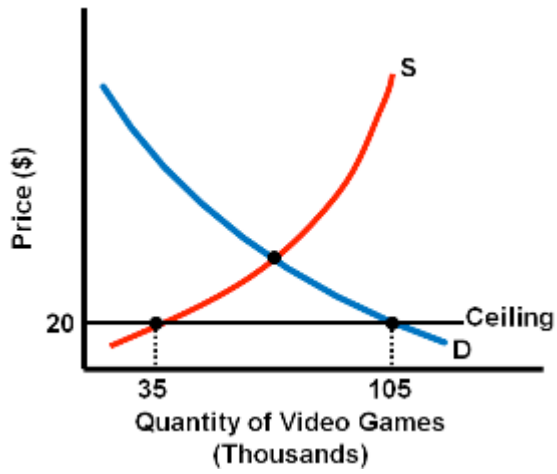


Dual Shifts: Demand & Supply Increase: Price Indeterminate, Quantity Increases



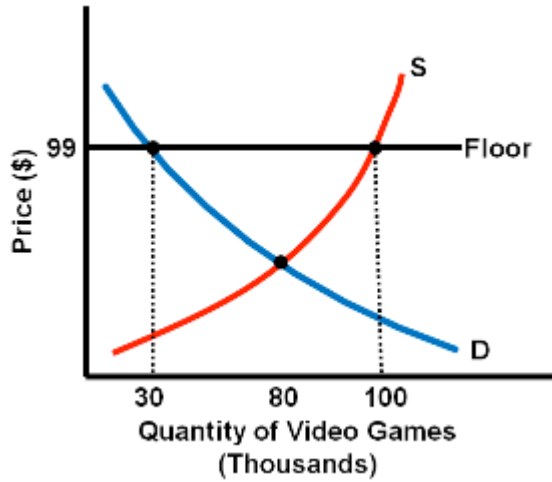
**Price Ceiling:**

Maximum legal price below equilibrium that leads to shortages



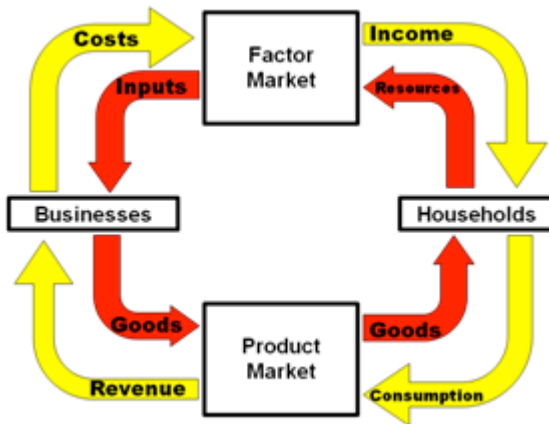
**Price Floor:**

Minimum legal price above equilibrium that leads to surpluses



## Unit 02: Macroeconomic Performance (Macro)

### Circular Flow Model



### Gross Domestic Product

Sum of expenditures of all goods produced (or income earned) within a nation's borders in one year.

$$\text{GDP} = C + I_g + G + X_n$$

C = Consumption

I<sub>g</sub> = Gross Investment

G = Government Purchases

X<sub>n</sub> = Exports - Imports

### Real Gross Domestic Product

Nominal GDP adjusted for price level changes. Increases in Real GDP over time show economic growth.

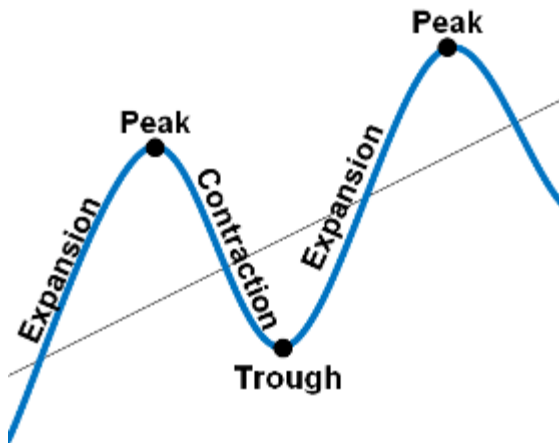
$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Price Index (Hundredths)}}$$

### Macroeconomic Instability

#### Business Cycle:

Upturns and downturns of the economy.





**Unemployment:**

An unemployed person is someone that is actively seeking employment. The labor force is comprised of people that are currently employed and those that are unemployed.

**Types of Unemployment:**

- Frictional (Between jobs)
- Structural (Skills no longer needed)
- Cyclical (Due to recession)

$$\text{Unemployment Rate} = \frac{\# \text{ Unemployed}}{\# \text{ Labor Force}} \times 100$$

**Natural Rate of Unemployment:**

Full employment = Frictional + Structural unemployment

**Inflation:**

- Prices rise (money has less purchasing power)
- Measured with the Consumer Price Index (CPI)

$$\text{Inflation Rate} = \frac{\text{New CPI} - \text{Old CPI}}{\text{Old CPI}} \times 100$$

**Types of Inflation:**

- Demand Pull: Caused by an increase of aggregate demand
- Cost Push: Caused by a decrease of aggregate supply

**Effects of Inflation:**

- Helps debtors that borrow at fixed rates
- Hurts creditors and people on fixed income

**Fisher Equation:**

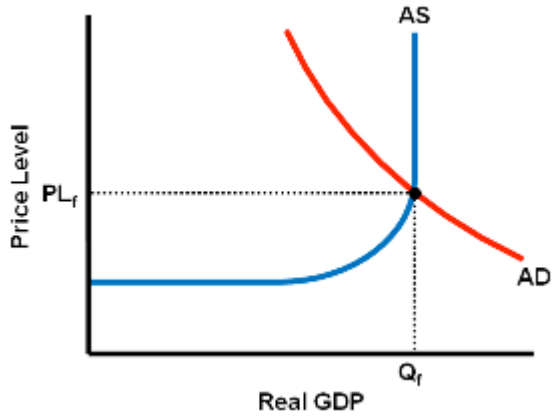
Find real or nominal changes in interest rates based on the rate of inflation.

$$\text{Real I.R.} = \text{Nominal I.R.} - \text{Inflation Rate}$$

## Unit 03: AD/AS & Fiscal Policy

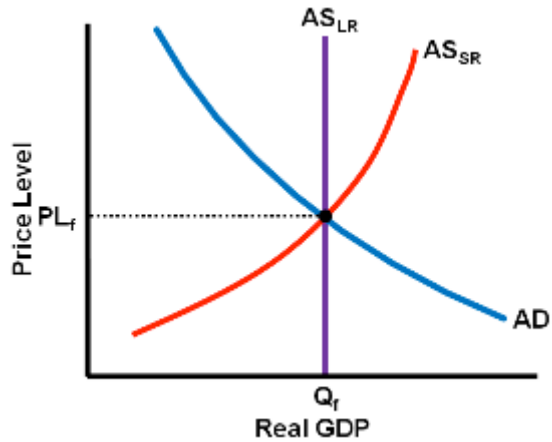
### Aggregate Supply & Demand

#### Full-Employment Equilibrium (3-Segmented AS)



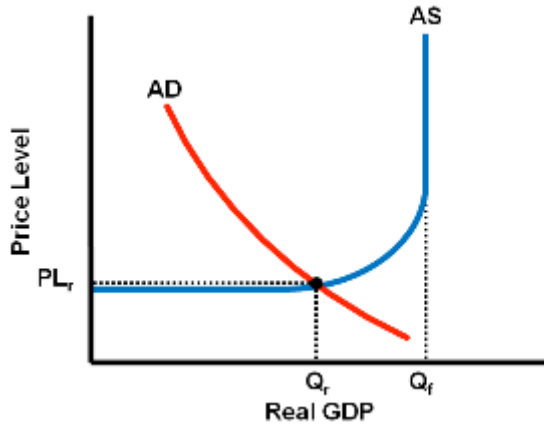
3-Segmented AS Curve:  
Horizontal Range = Keynesian Range  
Upward Sloping Range = Intermediate Range  
Vertical Range = Classical Range

#### Full-Employment Equilibrium (SR and LR AS)



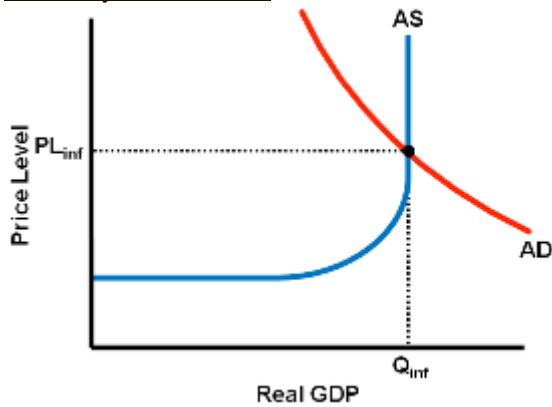
AD, SRAS, and LRAS intersect at the same point to show full employment.

### Economy in Recession



AD intersects the AS curve in the Keynesian range which is before the full-employment level of output.

### Economy with Inflation

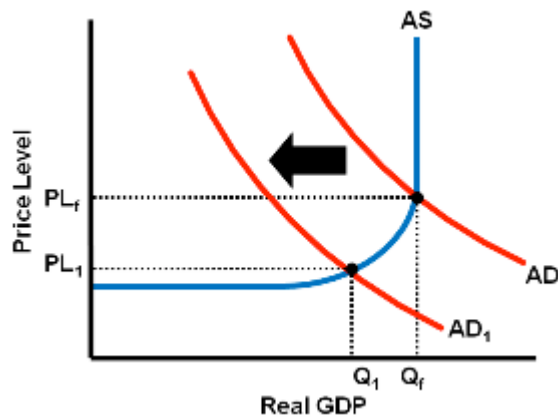


AD intersects AS in the classical range.

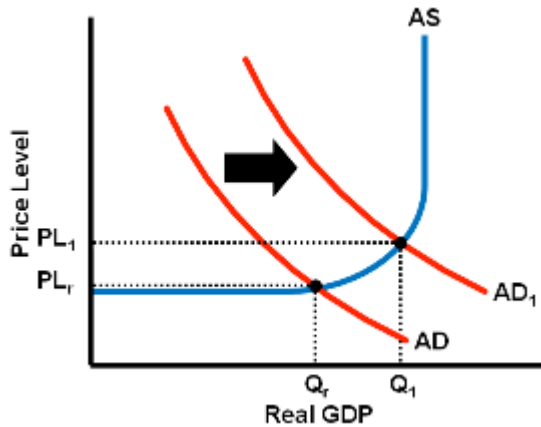
### **AD Shifters:**

- Consumption (Change in Disposable Income)
- Gross Investment
- Government Purchases
- Net Exports

AD Shifts Left: Price level Decreases, Output Decreases, Unemployment Increases



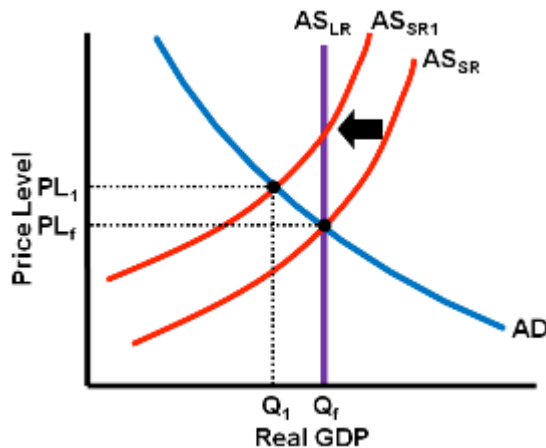
AD Shifts Right: Price level Increases, Output Increases, Unemployment Decreases



**AS Shifters:**

- Resource Prices
- Productivity
- Actions of Government (Taxes & Subsidies)
- Inflationary Expectations

SRAS Shifts Left (Negative Supply Shock): Price level Increases, Output Decreases, Unemployment Increases



**Fiscal Policy**

**Expansionary Fiscal Policy (AD Shifts Right):**

- An **increase in government spending** results in an increase in AD, increase in price level, increase in output, and decrease in unemployment.
- A **decrease in personal income taxes** results in an increase in disposable income, increase in consumption, increase in AD, increase in price level, increase in output, and decrease in unemployment.

**Contractionary Fiscal Policy (AD Shifts Left):**

- A **decrease in government spending** results in a decrease in AD, decrease in price level, decrease in output, and increase in unemployment.
- An **increase in personal income taxes** results in a decrease in disposable income, decrease in consumption, decrease in AD, decrease in price level, decrease in output, and increase in unemployment.

**Spending Multiplier:** Used to calculate changes in output due to changes in autonomous spending.

First, we must recall the marginal propensities to consume and save:

$$\text{MPC} + \text{MPS} = 1$$

Here is the formula for the simple spending multiplier:

$$\text{Multiplier} = \frac{1}{\text{MPS}} \text{ or } \frac{1}{1-\text{MPC}}$$

When there is a change in taxes we can use this tax multiplier formula:

$$\text{Tax Multiplier} = \frac{\text{MPC}}{\text{MPS}}$$

Finally, to calculate the change in output:

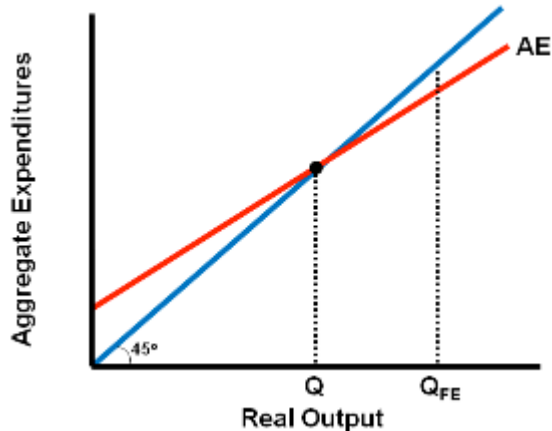
$$\text{Change in Real GDP} = \text{Change in Spending} \times \text{Multiplier}$$

Also, do not forget that an equal increase in government spending and taxes will still increase output.

$$\text{Balanced Budget Multiplier} = 1$$

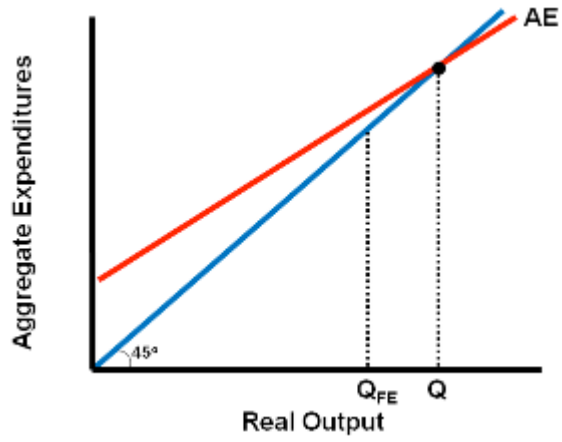
## Aggregate Expenditures Model

Economy Experiencing a Recessionary Gap



AE intersects the 45 degree line before the full-employment level of output.

Economy Experiencing an Inflationary Gap



AE intersects the 45 degree line beyond the full-employment level of output.

## Unit 04: Monetary Policy (Macro)

### Money and Banking

The "M"s	Contents
M1	Currency + Checkable Deposits + Traveler's Checks
M2	M1 + Savings + Small Time Deposits
M3	M2 + Large Time Deposits + Institutional Money Market Funds

#### Banks:

- Assets = Liabilities + Net Worth
- Checkable deposits subject to reserve requirement
- Create money by lending from excess reserves

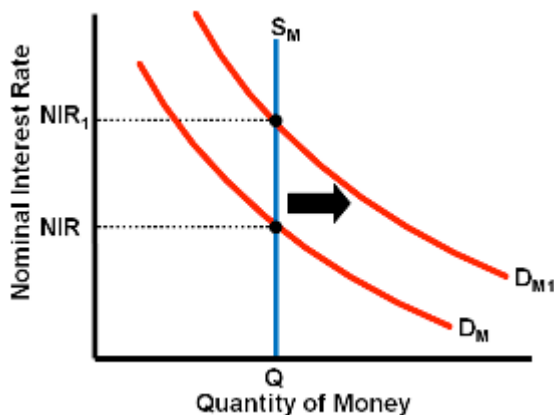
**Money Multiplier:** Calculate total change in money supply from change in demand deposits

$$\text{Money Multiplier} = \frac{1}{\text{Reserve Ratio}}$$

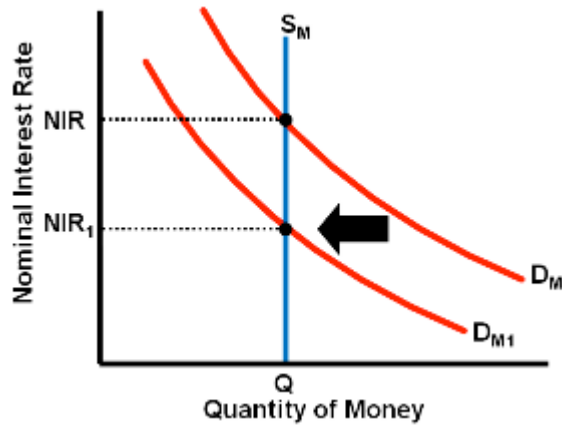
Change in Money Supply = Excess Reserves X Money Multiplier

Change in Checkable Deposits = Initial Deposit X Multiplier

**Money Market:** Demand for Money Shifts Right: I.R. Increase, Quantity Constant, Bond Prices Decrease



Money Market: Demand for Money Shifts Left: I.R. Decrease, Quantity Constant, Bond Prices Increase



## Monetary Policy

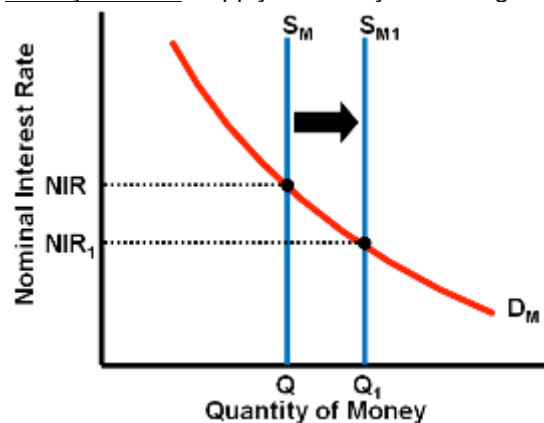
Tools of the Fed:

- Open Market Operations** (Buy/sell bonds) to target the Federal Funds Rate (Bank-to-bank interest rate on overnight loans)
- Discount Rate** (Fed-to-bank interest rate on overnight loans)
- Reserve Ratio** (Percentage of demand deposits that banks must keep as reserves)

### Expansionary Policy (During Recession):

- Buy Bonds
- Decrease Discount Rate
- Lower Reserve Ratio

Money Market: Supply of Money Shifts Right: I.R. Decrease, Quantity Increase





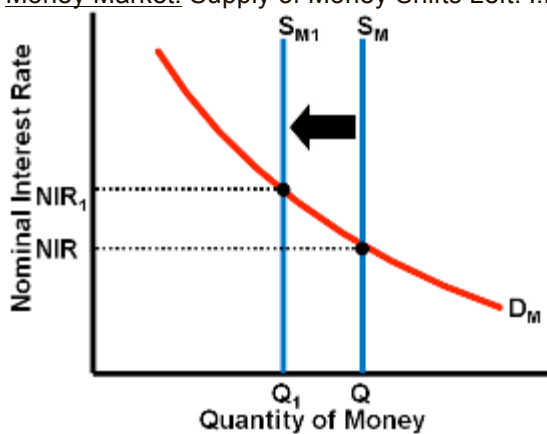
Keynesian Transmission Mechanism (Easy Money):

Inc. MS, Dec. I.R.,  
Inc. C & Ig, Inc. AD,  
Inc. PL, Inc. RGDP,  
Dec. Unemployment

**Contractionary Policy (To Fight Inflation):**

- Sell Bonds
- Increase Discount Rate
- Raise Reserve Ratio

Money Market: Supply of Money Shifts Left: I.R. Increase, Quantity Decrease



Keynesian Transmission Mechanism (Tight Money):

Dec. MS, Inc. I.R.,  
Dec. C & Ig, Dec. AD,  
Dec. PL, Dec. RGDP,  
Inc. Unemployment

## Unit 05: Policy Theories & Growth (Macro)

### Economic Policies, Theories, and Growth

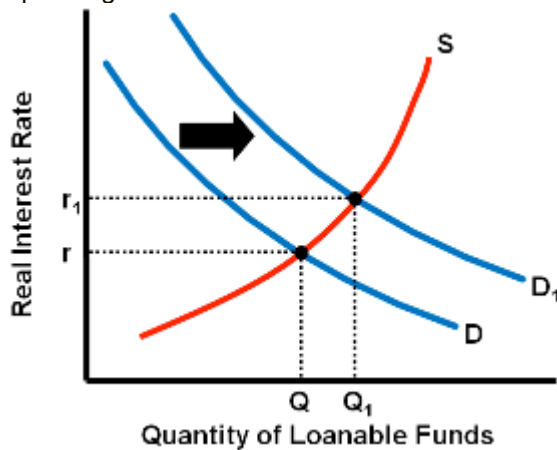
#### Loanable Funds Market:

- Supply and demand determine real interest rate
- Equilibrium real interest rate affected by fiscal policies and changes in household savings

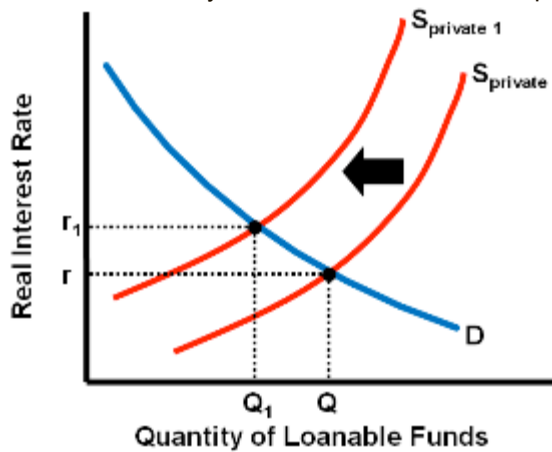
#### Crowding Out Effect:

- Higher R.I.R. caused by expansionary fiscal policy reduces ("crowds out") private spending

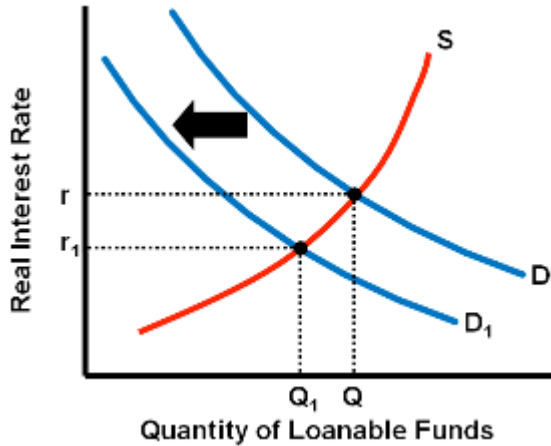
**Loanable Funds Market:** Expansionary Fiscal Policy Shifts Demand Right (Gov't Issues Treasury Bonds): R.I.R. Increase, Quantity Increase, Private Consumption and Investment Spending Decrease



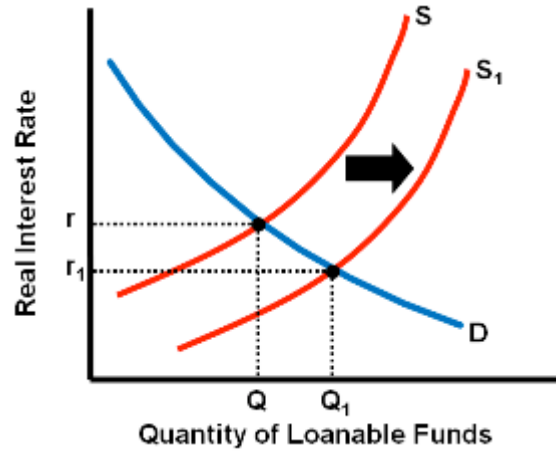
**Loanable Funds Market:** Expansionary Fiscal Policy Shifts Supply of Private Funds Left: R.I.R. Increase, Quantity Increase, Private Consumption and Investment Spending Decrease



**Loanable Funds Market:** Contractionary Fiscal Policy Shifts Demand Left: R.I.R. Decrease, Quantity Decrease, Private Consumption and Investment Spending Increase

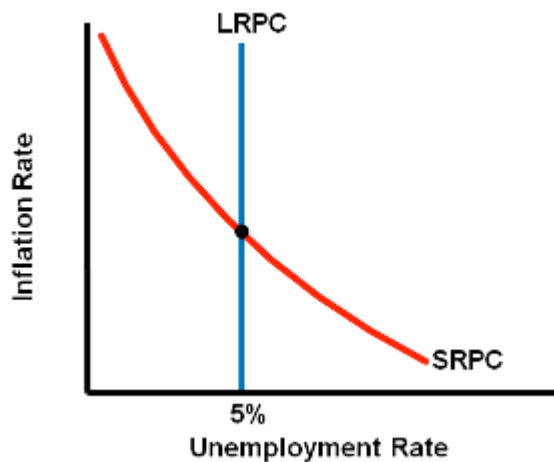


**Loanable Funds Market:** Households Increase Savings: Supply Shifts Right: R.I.R. Decrease, Quantity Increase, Private Consumption and Investment Spending Increase

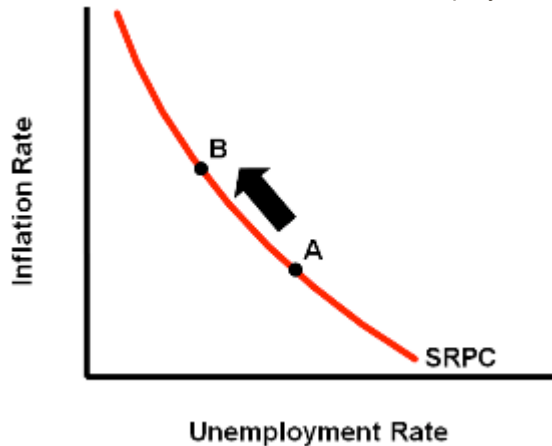


**Phillips Curve:**

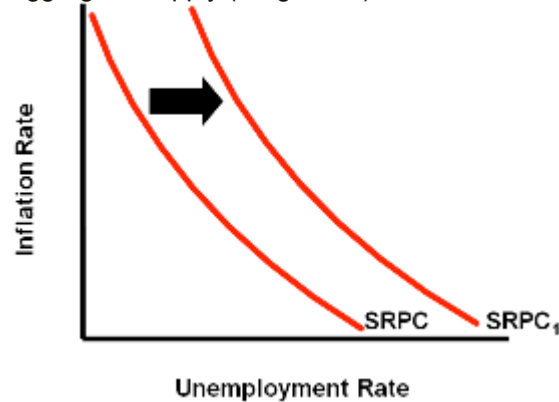
- Shows the short-run tradeoff between inflation and unemployment
- No long-run tradeoff, LRPC vertical at the natural rate of unemployment



**Short-Run Phillips Curve:** Point-To-Point Movement Caused By Rightward Shift of Aggregate Demand: Price Level Increase, Unemployment Decrease



**Short-Run Phillips Curve:** SRPC Shifts Right: Caused By Leftward Shift of Short-Run Aggregate Supply (Stagflation): Price Level Increase, Unemployment Increase



**Equation of Exchange:**

- "M" is Money Stock and "V" is Velocity
- "P" is Price Level and "Q" is Output ( $P \times Q = \text{Nominal GDP}$ )
- Monetary Rule: Fed should increase money supply by a fixed expected growth rate

$$M V = P Q$$

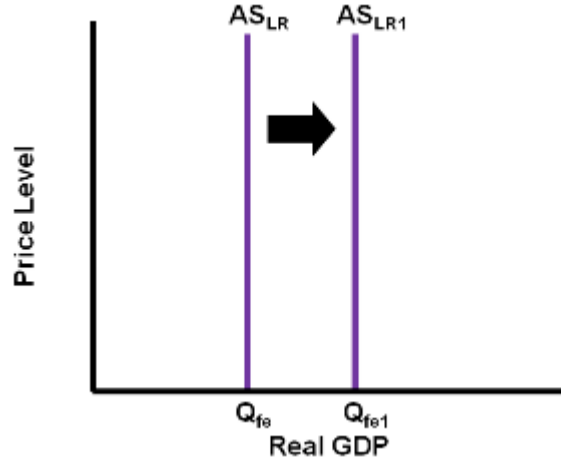
**Rational Expectations:**

- Fiscal and monetary policies have no effect on real output

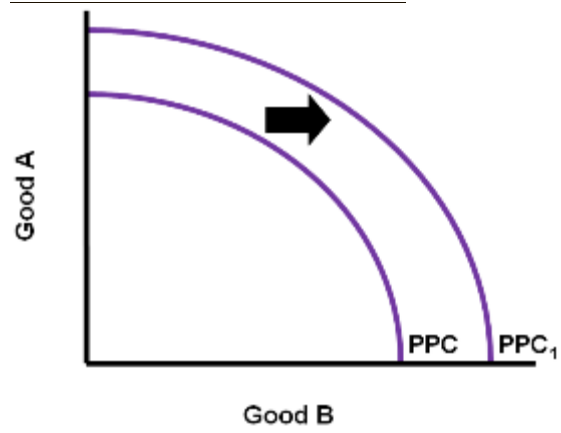
**Economic Growth:**

- Growth of Capital Stock
- More Economic Resources
- Better Economic Resources
- Increased Productivity
- New Technology
- Better Education

**Long-Run Aggregate Supply: LRAS Shifts Right**



**Production Possibilities Curve: PPC Shifts Outward**



## Unit 06: International Sector (Macro)

### International Trade

#### Comparative Advantage (from Unit 1):

- Lower relative opportunity cost
- Specialization
- Both countries must benefit from the trade

	Beach Balls	Cost of 1 Beach Ball	Ice Cream Cones	Cost of 1 Ice Cream Cone
Surf Kingdom	50	1 Ice Cream Cone	50	1 Beach Ball
Sand Land	25	2 Ice Cream Cones	50	½ Beach Ball

**Acceptable Terms of Trade:** 1 beach ball for 1.5 ice cream cones.

### Balance of Payments

A transaction recorded as a debit to the current account can be returned as a credit to the capital account and vice versa.

#### Current Account:

- Exports and imports
- Transfers (Money sent to family)

#### Capital Account:

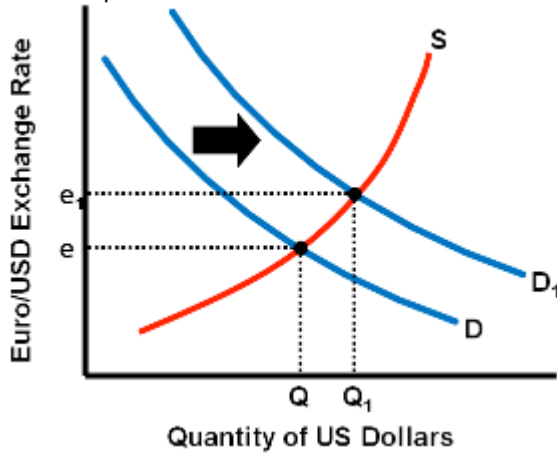
- Real assets (Property)
- Real assets (Property)
- Financial assets (Stocks, bonds)

### Foreign Exchange Market

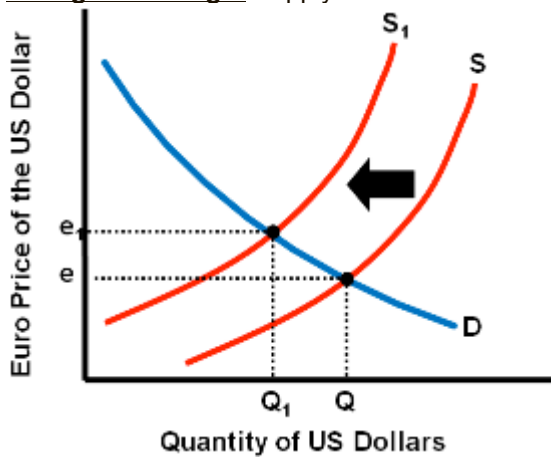
#### Currency Appreciates:

- Increase in tastes
- Higher interest rates
- Lower price level
- Decrease in income (Recession)

**Foreign Exchange:** Higher Real Interest Rates US: Demand Shifts Right: Dollar Appreciates, Euro Depreciates



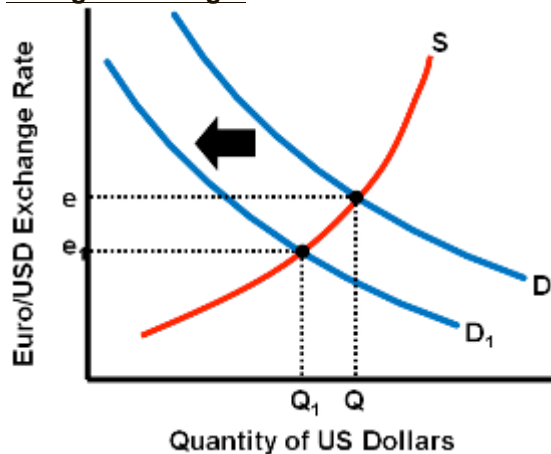
**Foreign Exchange:** Supply Shifts Left: US Recession: Dollar Appreciates, Euro Depreciates



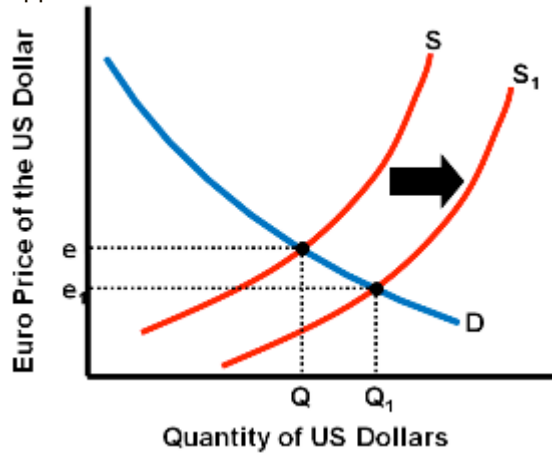
**Currency Depreciates:**

- Decrease in tastes
- Lower interest rates
- Higher price level
- Increase in income (Increased growth rate)

**Foreign Exchange:** Demand Shifts Left: US Inflation: Dollar Depreciates, Euro Appreciates



**Foreign Exchange:** Supply Shifts Right: Lower Real Interest Rates US: Dollar Depreciates, Euro Appreciates



**Key AP Macro Graphs:**

- PPC (Unit 1)
- AD/AS Model (Unit 3)
- Money Market (Unit 4)
- Loanable Funds Market (Unit 5)
- Phillips Curve (Unit 5)
- Foreign Exchange Market (Unit 6)

**For AP Micro Review:** Units 1, 7, 8, 9, & 10

**Good Luck!**