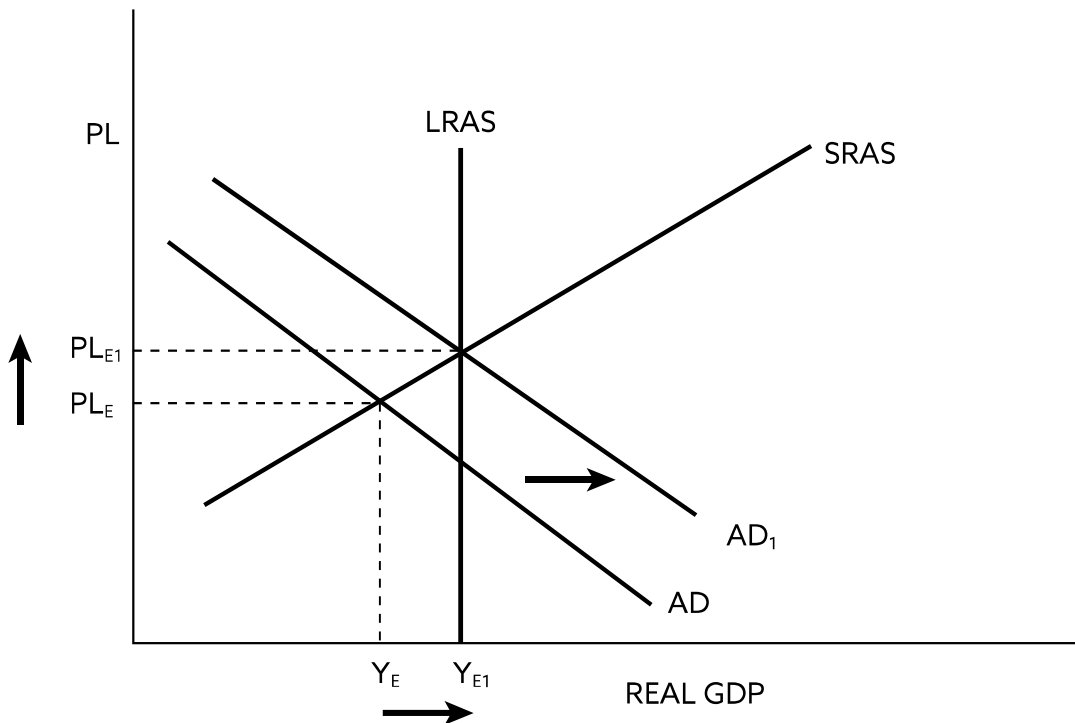
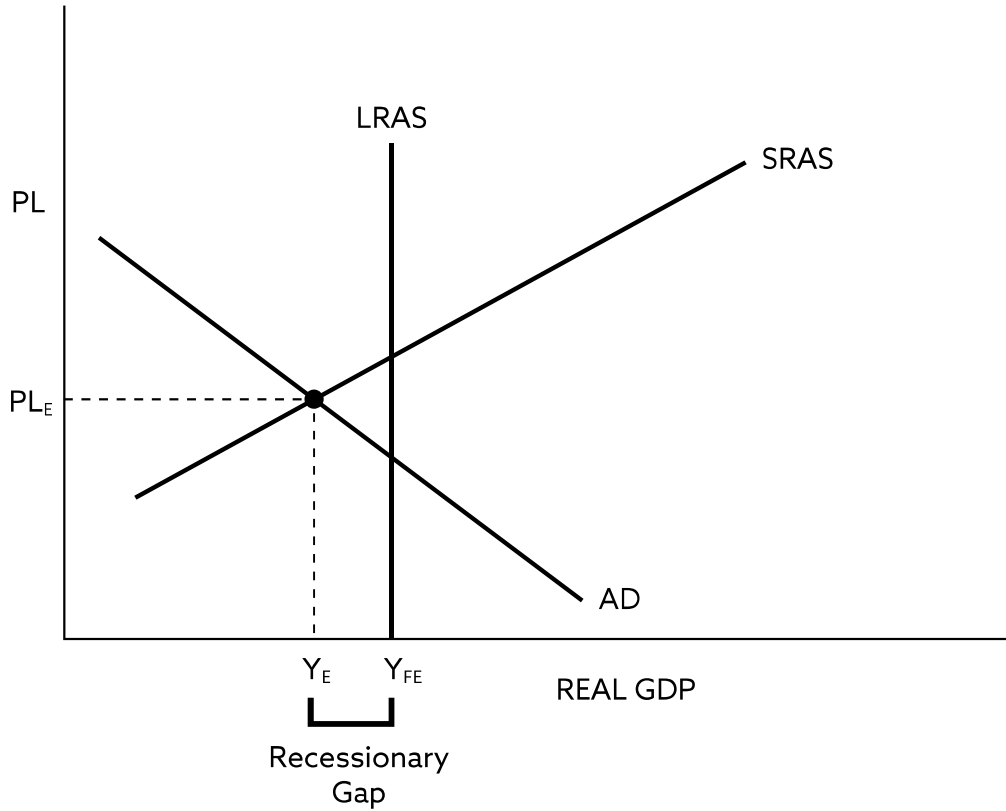
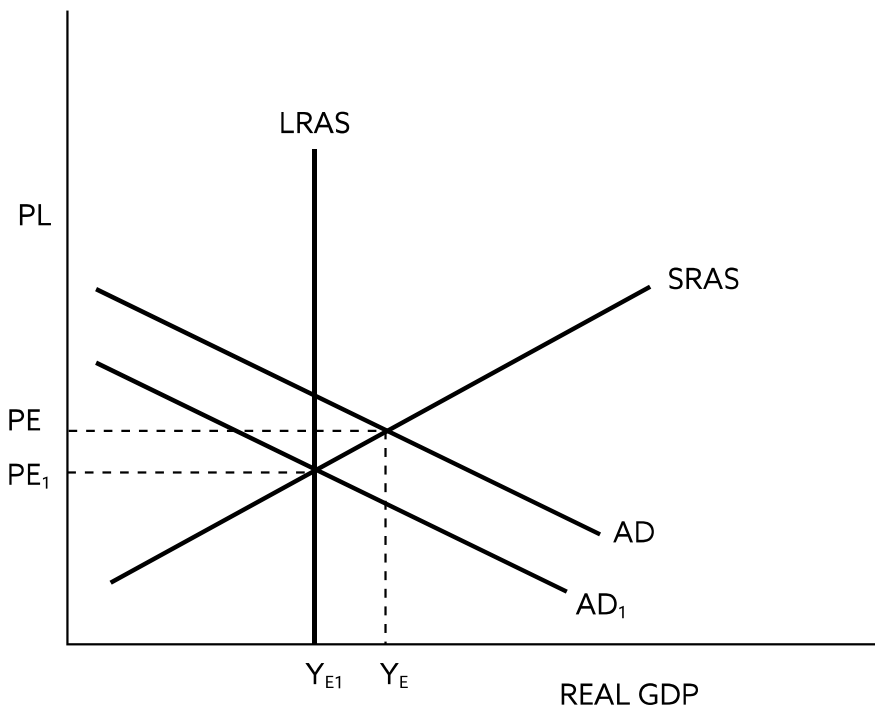
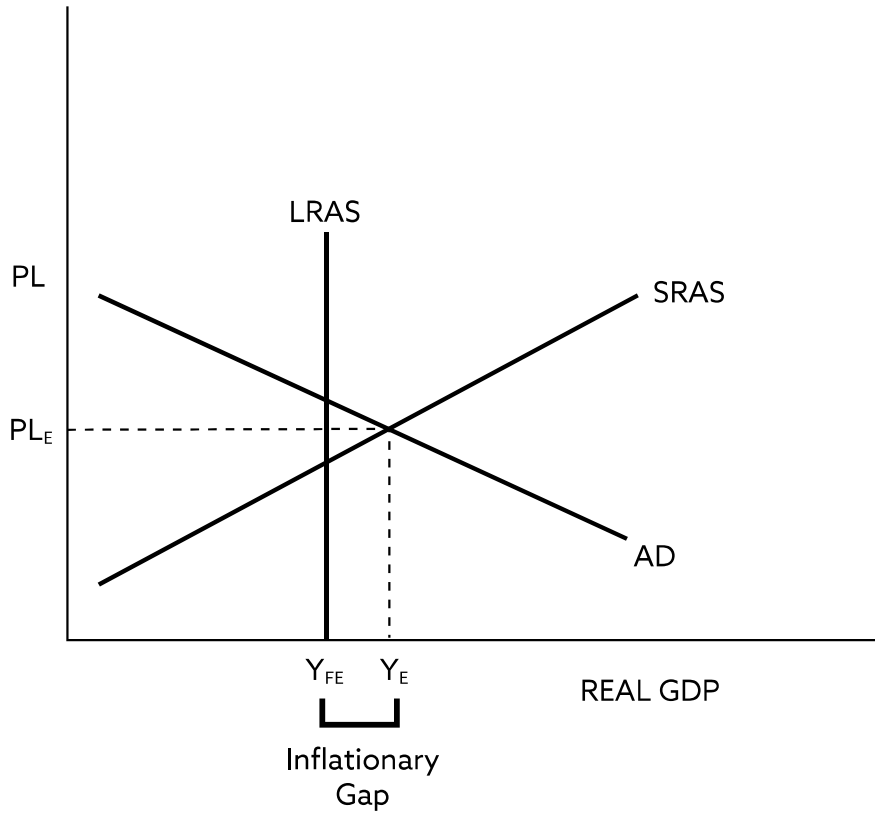


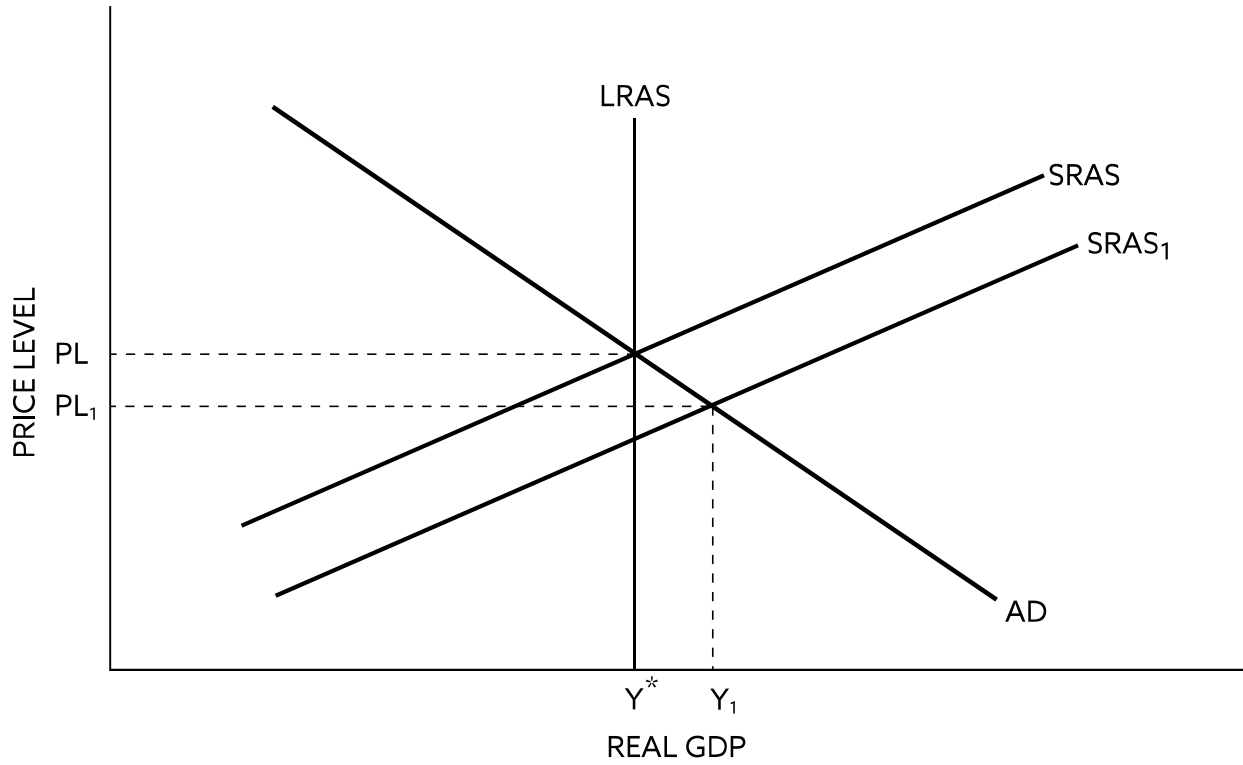
# Expansionary Graphs



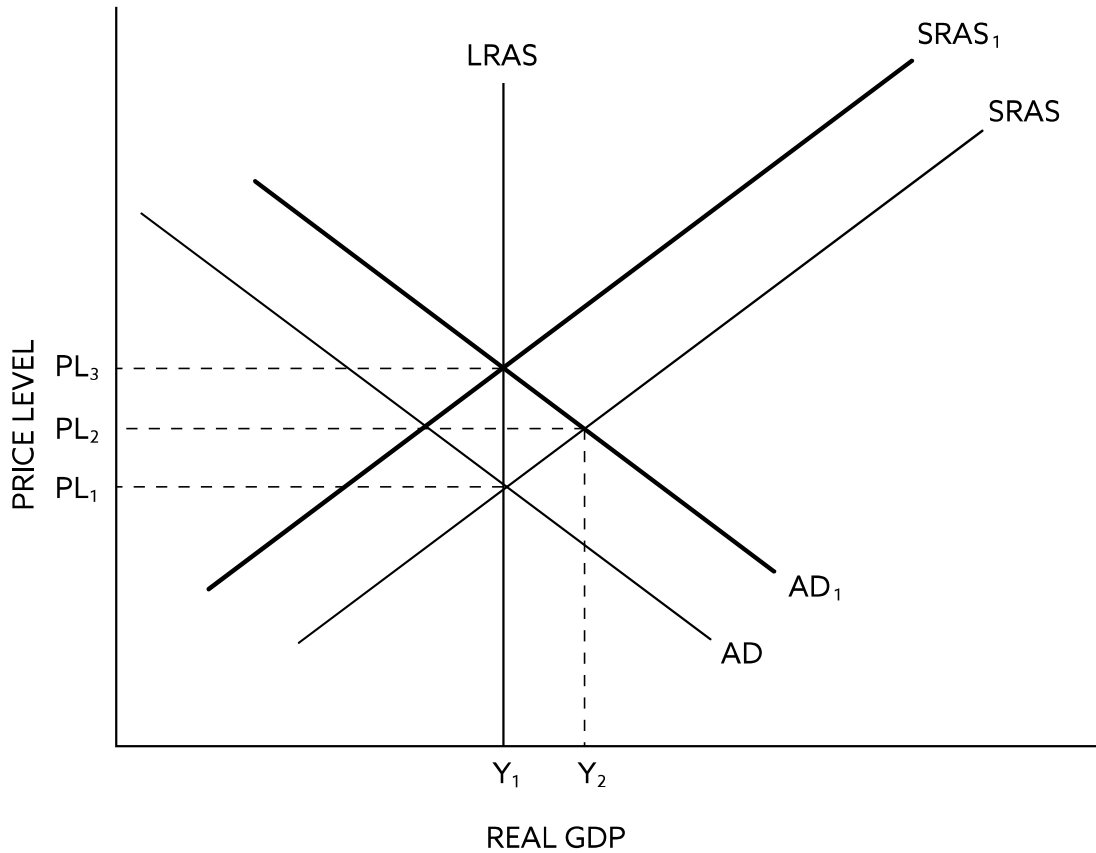
# Contractionary Graphs



# Increasing Aggregate Supply



# Long Run Adjustment of Aggregate Supply



## Money Growth and Inflation

$$MV = PQ$$

M = the money supply

V = the velocity of money (the number of times an average dollar bill is spent)

P = the average price level

Q = real value of all final goods and services (rGDP)

## Debt vs. Deficit

### Budget deficit

- government spending  $>$  tax revenues

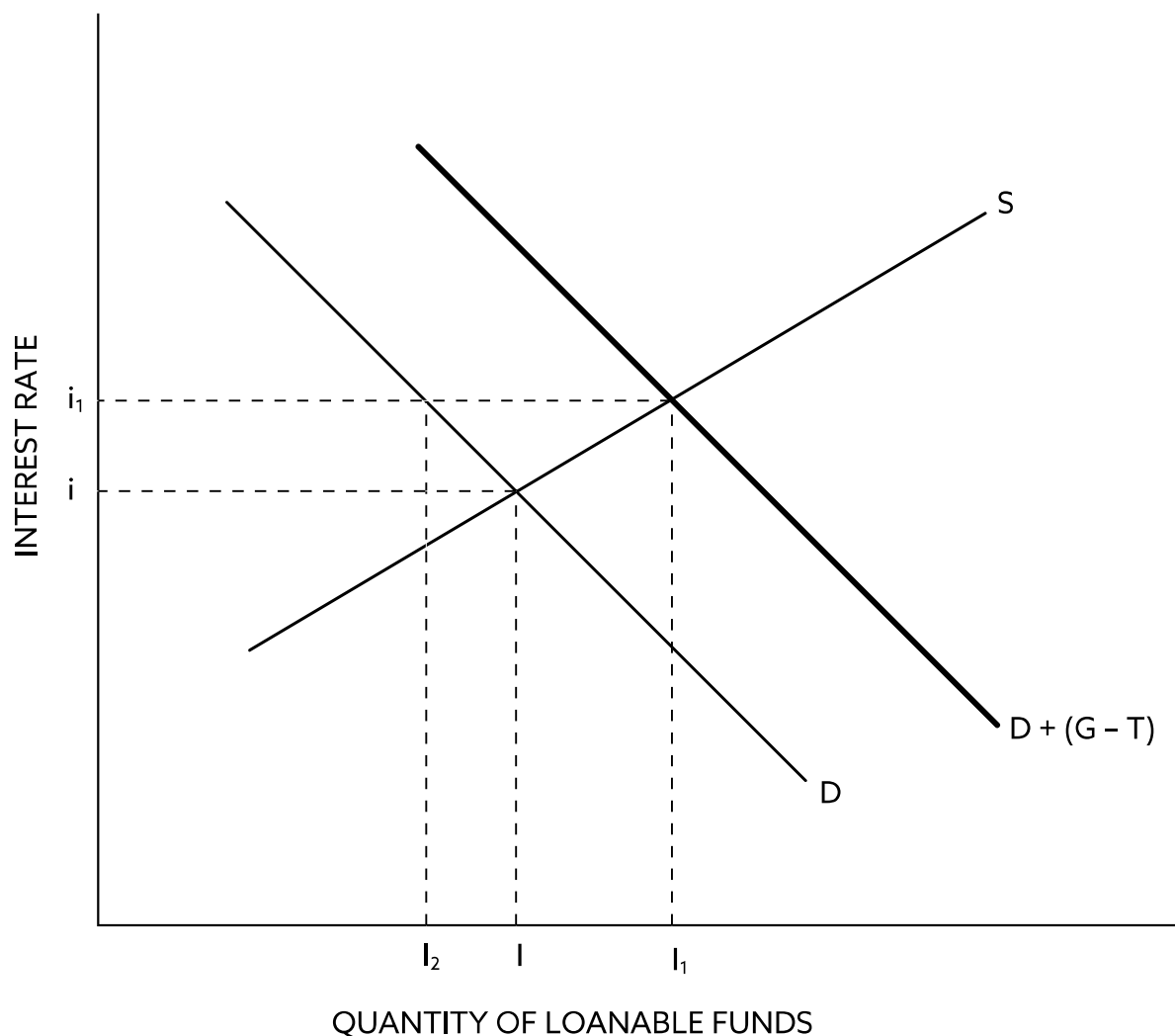
### Budget surplus

- government spending  $<$  tax revenues

### National or Public Debt

- total of all past Federal deficits and surpluses

## Loanable Funds Market



- $I$  and  $i$  are the initial equilibrium values.
- $D$  = private sector demand for funds (investment).  
 $D + (G - T)$  = private + government demand for funds.
- $I_1$  and  $i_1$  are the new equilibrium values.
- $I_2$  = new level of private investment.
- $I_1 - I_2$  = government demand for funds ( $G - T$ ).

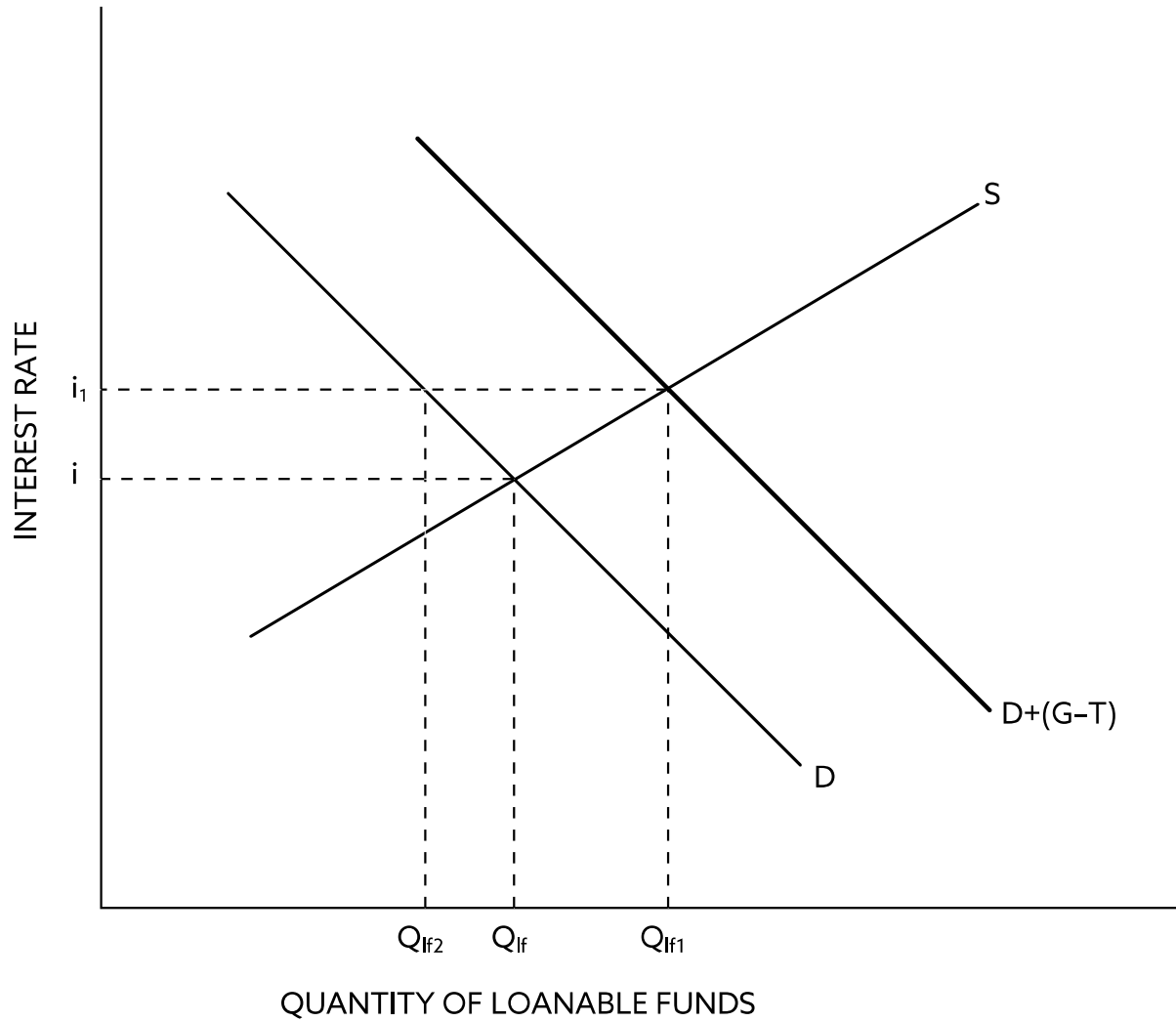
## The Crowding Out Effect

1. When the government borrows money, it increases the demand for money.
2. When aggregate demand increases – the price level rises, raising interest rates
3. When the interest rate rises, some investment spending will be “crowded out.” (It’s harder to borrow money)

### Less likely in a recession

- Not much investment for government to crowd out.
- If govt debt is used to fund capital improvements – better transportation, education, etc. and improve investment prospects for businesses, it offsets the crowding-out effect.

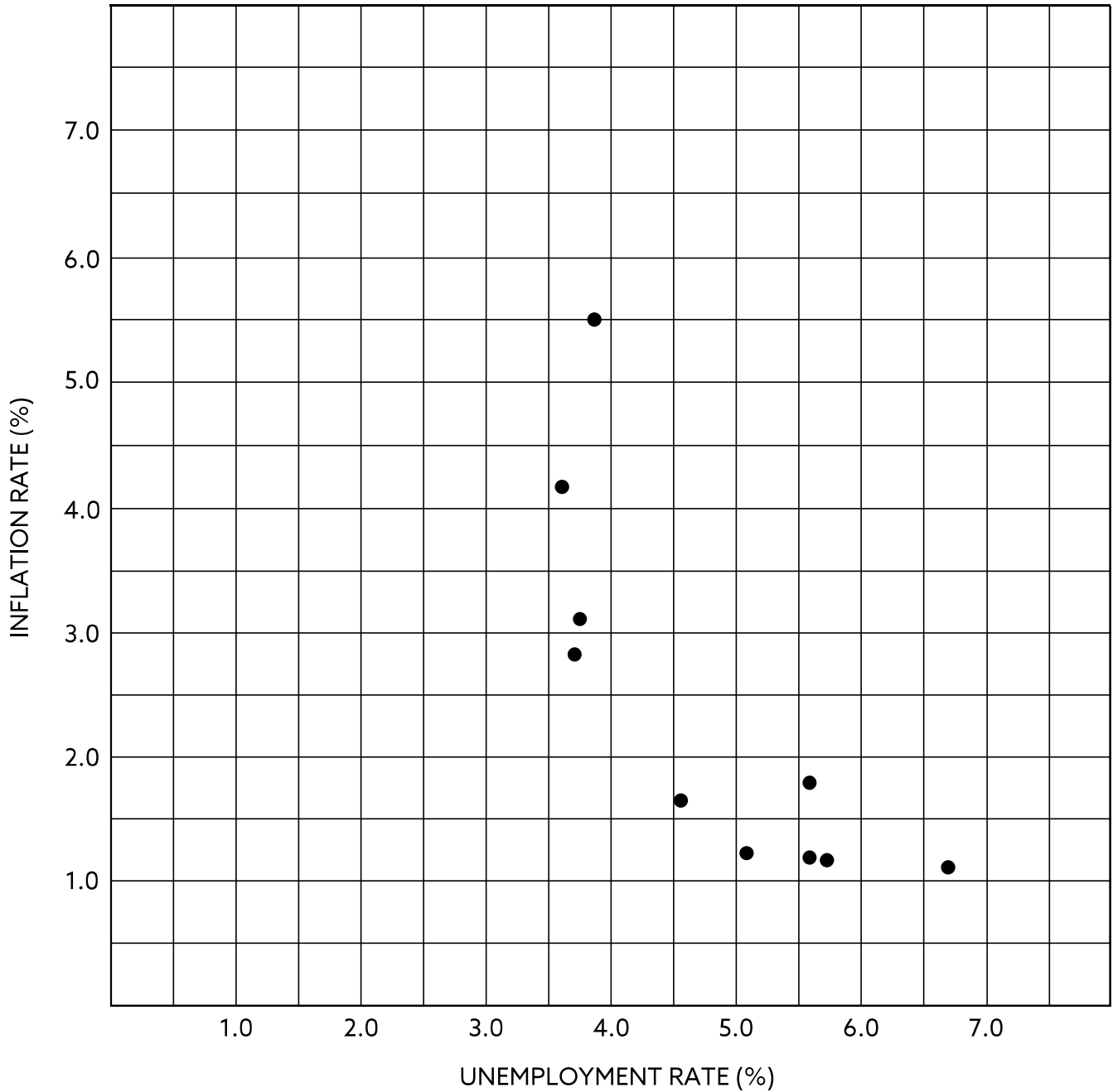
# Loanable Funds Market



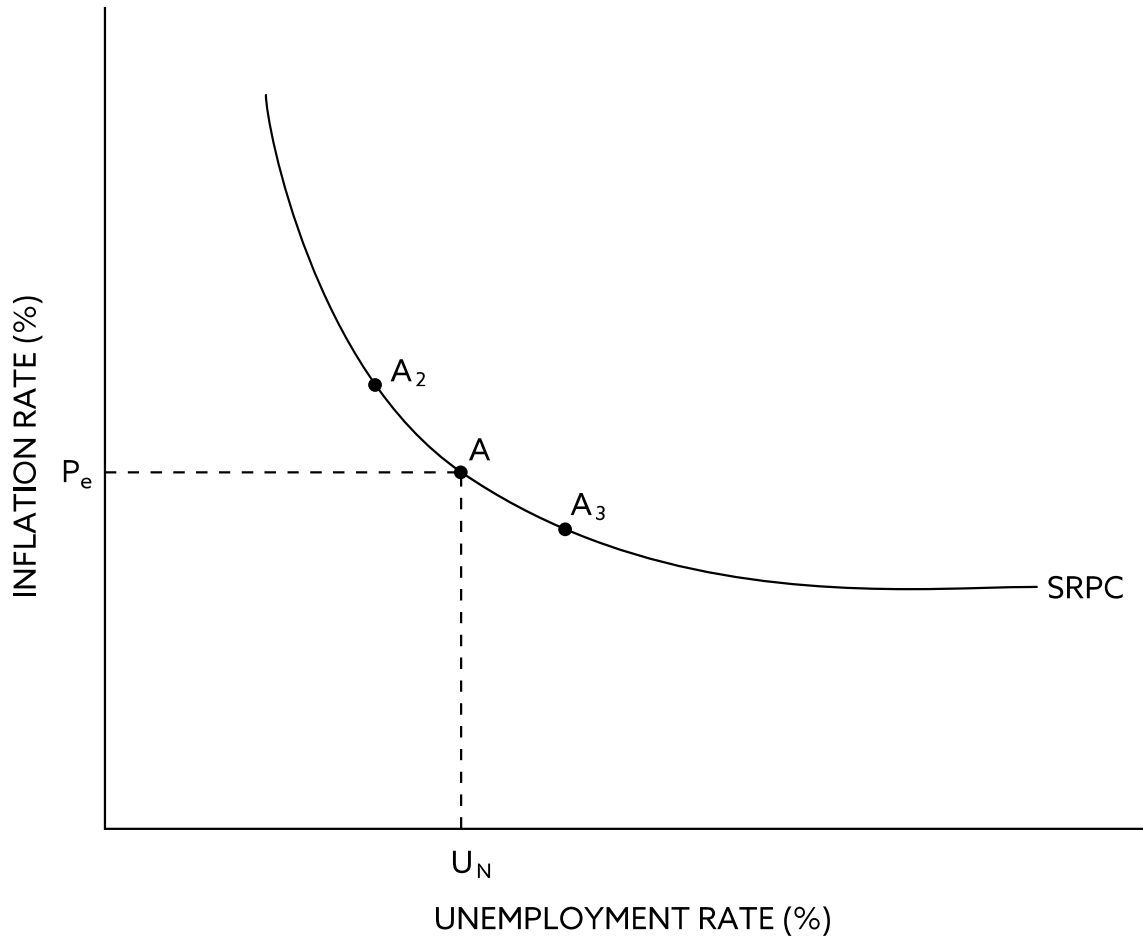
## Data for a Phillips Curve

| Unemployment rate (%) | Inflation rate (%) |
|-----------------------|--------------------|
| 5.54                  | 1.7                |
| 6.69                  | 1.1                |
| 5.57                  | 1.2                |
| 5.64                  | 1.2                |
| 5.16                  | 1.3                |
| 4.51                  | 1.6                |
| 3.79                  | 2.9                |
| 3.84                  | 3.1                |
| 3.56                  | 4.2                |
| 3.49                  | 5.5                |

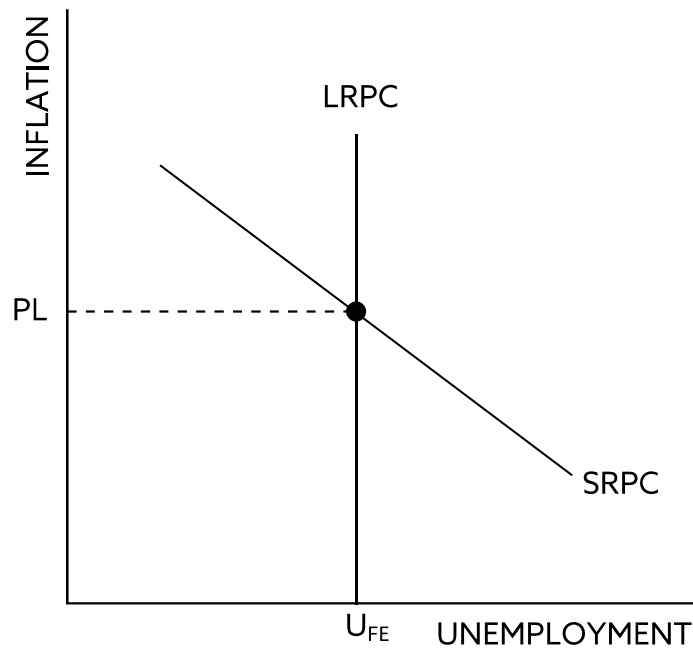
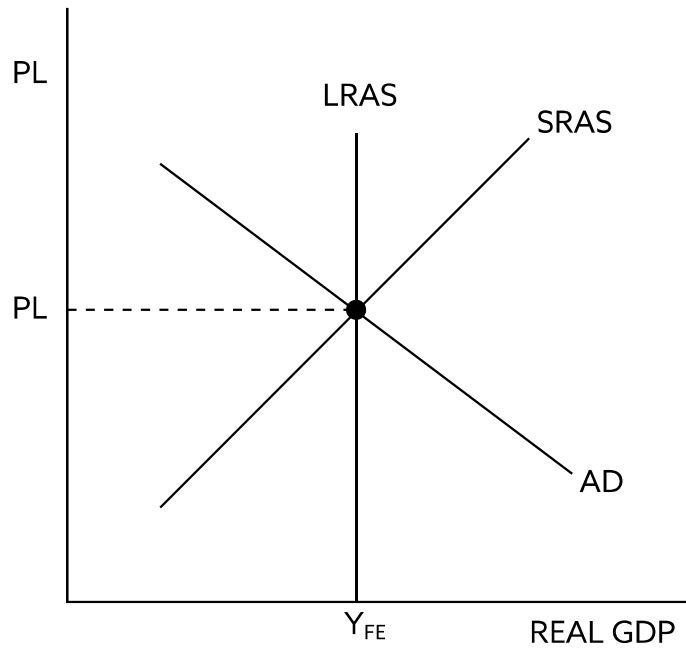
# Bell Ringer Phillips Curve



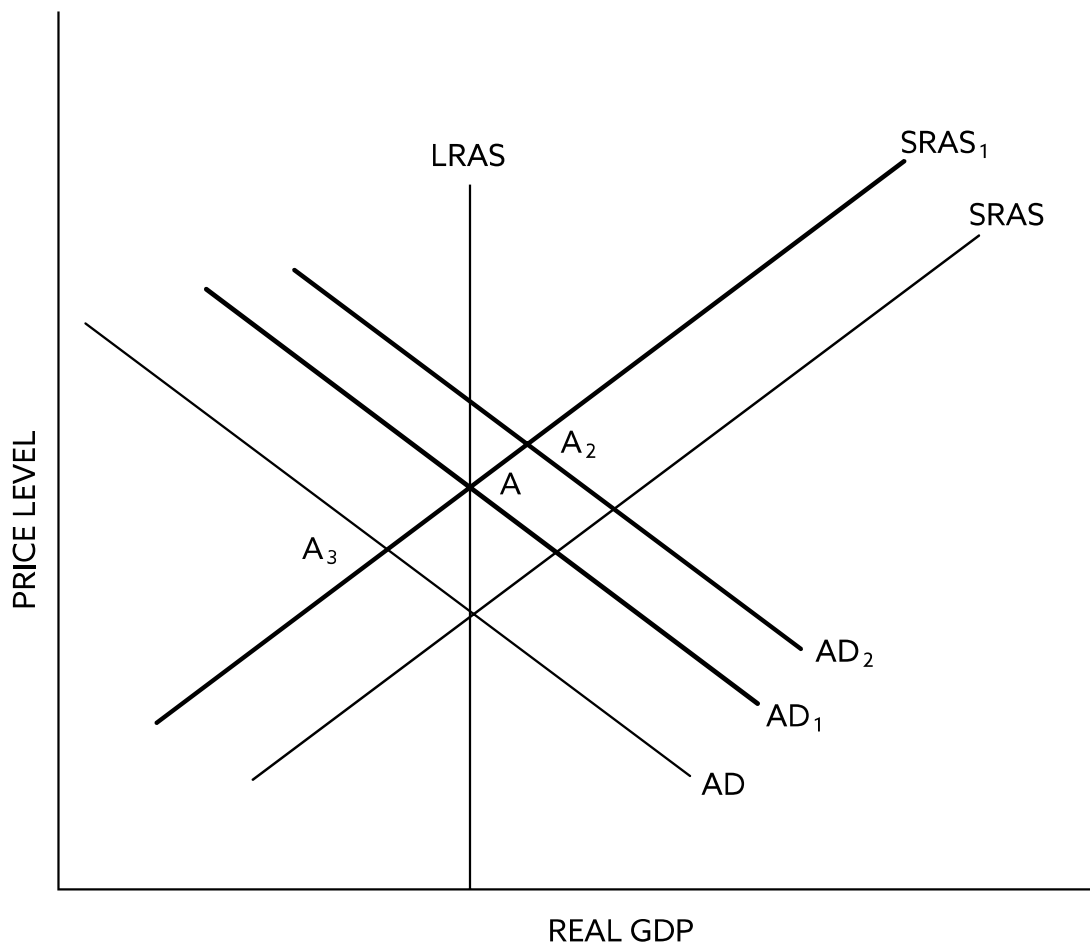
# Short-Run Phillips Curve



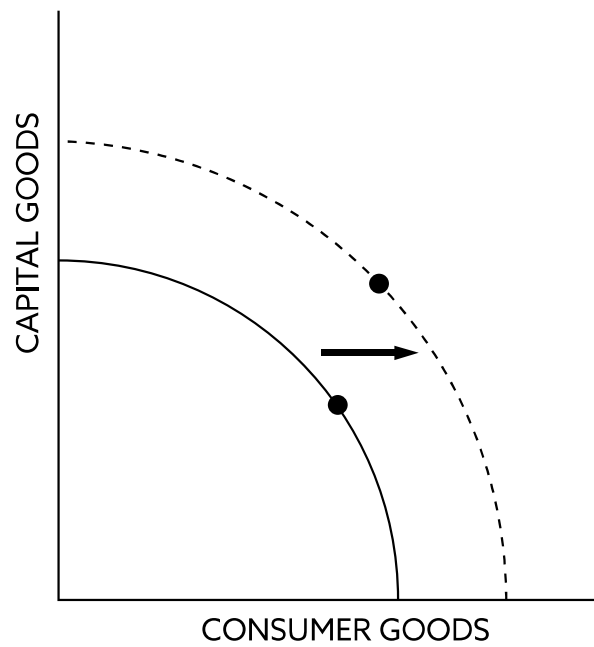
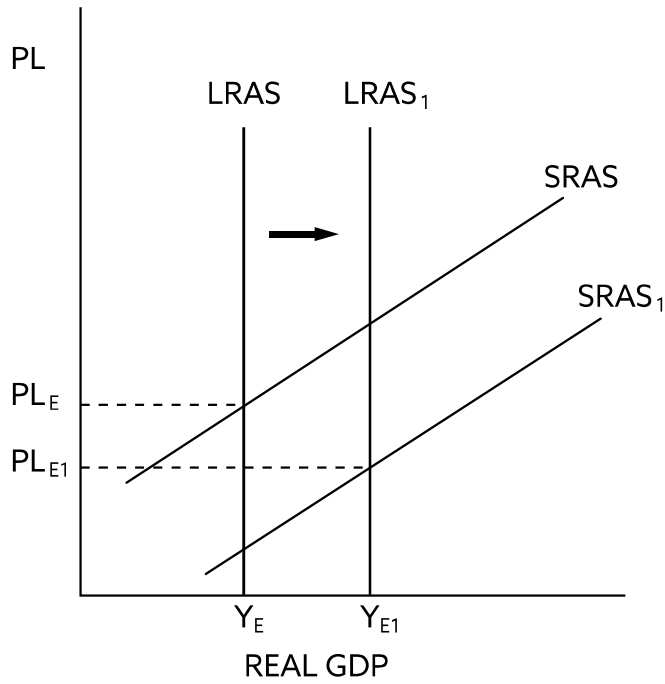
# Comparing the LRAS Curve and the Phillips Curve



# Explaining the Phillips Curve



# Economic Growth



## Sources of Long-Term Growth

1. The quantity and quality of labor
2. The quantity and quality of capital
3. The level of technology

**Increases in any one of these elements will increase real GDP.**

- The growth in the quantity of labor is primarily the result of population growth.
- The quality of labor is affected by improvements in education, training, and health of workers.
- Investment and research and development result in improvements in capital and technological advances.
- Increases in capital or technological advances increase productivity and thus increase real GDP.

# Factors that Contribute to a Nation's Productivity

## Capital per worker

- “Capital” = the tools of production. A country's workforce is more productive if the workforce has more and better tools with which to work.
- Private capital – workers use to produce goods and services.
- Public capital – infrastructure and includes roads, bridges, power lines, and information networks.

## Human capital per worker

- The workforce uses its collective experience and education to produce goods and services.
- Human capital can be acquired through formal schooling, occupational training, or simply accumulated experience at the workplace.

## Natural resources per worker

- Production inputs that come from the world around us.
- Minerals, sources of energy, rivers, forests, and fisheries.
- A country's workforce can be more productive when they have abundant natural resources.

## Technology

- The way that resources are combined to produce output.
  - A country with little technology may see that the best way to farm a crop is with a mule-drawn plow.
  - A country with better technology can also farm that crop but does it with enormous diesel-powered harvesters.

# Economic Growth Graphs

