

1. (25 points). An economy with no foreign sector and fixed interest rates is represented below.

$$C = 500 + .6Y_d \quad I = 600 \quad G = 400 \quad T = 900$$

Calculate the following:

Equilibrium gross domestic product 2400

Equilibrium personal savings 100

Change in taxes required to achieve full employment GDP of 2000. increase by 266 2/3

(Along with your specific numerical response, clearly indicate whether taxes must *increase* or *decline*)

Carefully depict equilibrium national income on a graph below:

Calculations (required):

$$Y = C + I + G \rightarrow Y = 500 + .6(Y - 900) + 600 + 400$$

$$\rightarrow Y = 500 + .6Y - 540 + 600 + 400$$

$$\rightarrow Y = 960 + .6Y$$

$$\rightarrow .4Y = 960 \rightarrow Y = 2400$$

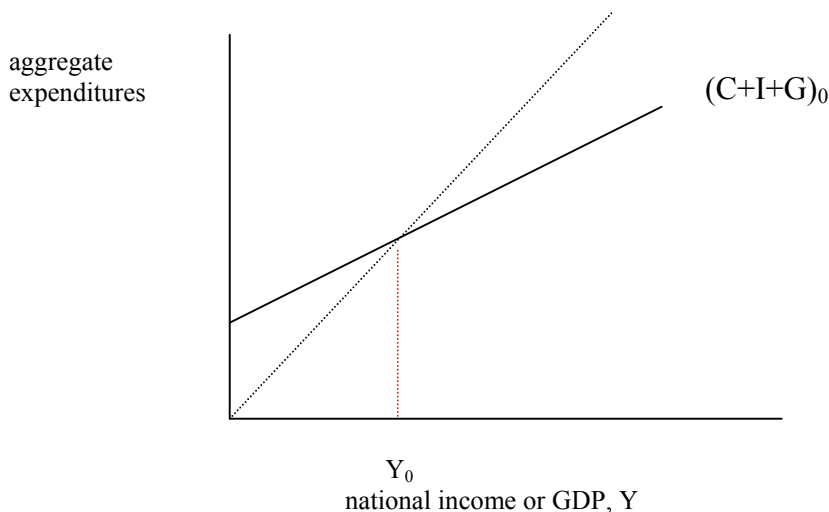
$$\text{savings} = Y - T - C = 2400 - 900 - (500 + .6(2400 - 900)) = 1500 - 1400 = 100$$

$$\text{change in } Y = \text{change in } T \times (-\text{MPC}/1 - \text{slope of AE})$$

$$-400 = \text{change in } T \times (-.6/(1-.6))$$

$$-400 = \text{change in } T \times -1.5$$

$$\text{change in } T = 266 \frac{2}{3}, \text{ an increase in taxes of } 266 \frac{2}{3}$$



**2. (63 points)** The next U.S. President has proposed substantial income tax reductions and substantial increases in transfer payments.

Below, you will use model #3 (of an open economy in the short run with flexible interest rates and fixed prices) to analyze the short run effects on equilibrium values of important variables in the economy if the proposals are implemented.

Eight variables are listed below and on the next page. For each variable, indicate whether it will *increase*, *decrease*, or remain *unchanged* if the proposals are implemented. **Explain each forecast carefully**, using information from class consistent with model #3; your score depends ENTIRELY upon the thoroughness and accuracy of your explanations.

Trade deficit                     increase     decrease     unchanged

policies cause higher C → higher AE → higher Y → higher Md → higher r → \$ appreciate → trade deficit rise

Budget surplus                     increase     decrease     unchanged

budget surplus = tax revenue – government spending  
since tax revenue will fall and spending will rise, the surplus will shrink (or disappear)

Personal savings                     increase     decrease     unchanged

policies cause higher disposable income → higher savings

Investment                     increase     decrease     unchanged

policies cause higher  $C \rightarrow$  higher  $AE \rightarrow$  higher  $Y \rightarrow$  higher  $M_d \rightarrow$  higher  $r \rightarrow$  more expensive to borrow  $\rightarrow$  investment falls

External debt                      x   increase           decrease           unchanged

policies cause higher  $C \rightarrow$  higher  $AE \rightarrow$  higher  $Y \rightarrow$  higher  $M_d \rightarrow$  higher  $r \rightarrow$  \$ appreciate  $\rightarrow$  trade deficit rise  $\rightarrow$  foreigners have a surplus of dollars to lend back to us  $\rightarrow$  higher external debt

Unemployment rate                           increase      x   decrease           unchanged

policies cause higher  $C \rightarrow$  higher  $AE \rightarrow$  higher  $Y \rightarrow$  lower cyclical unemployment

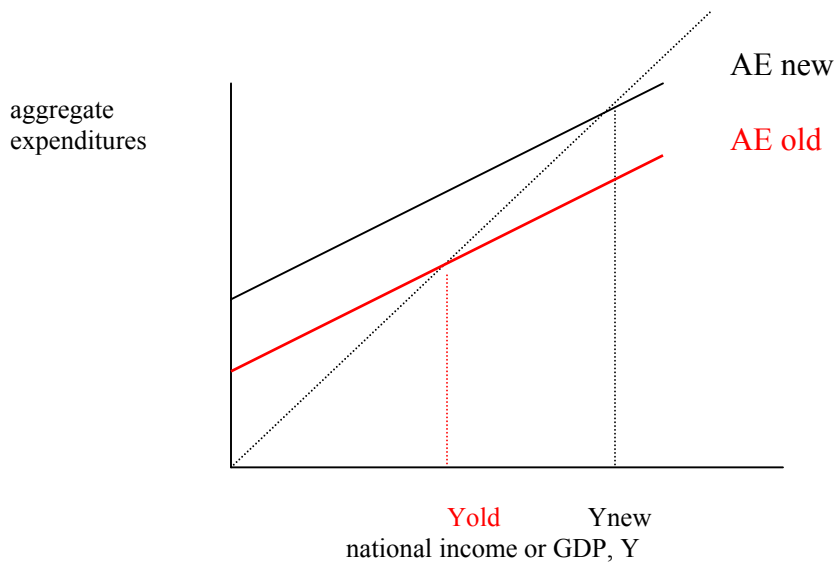
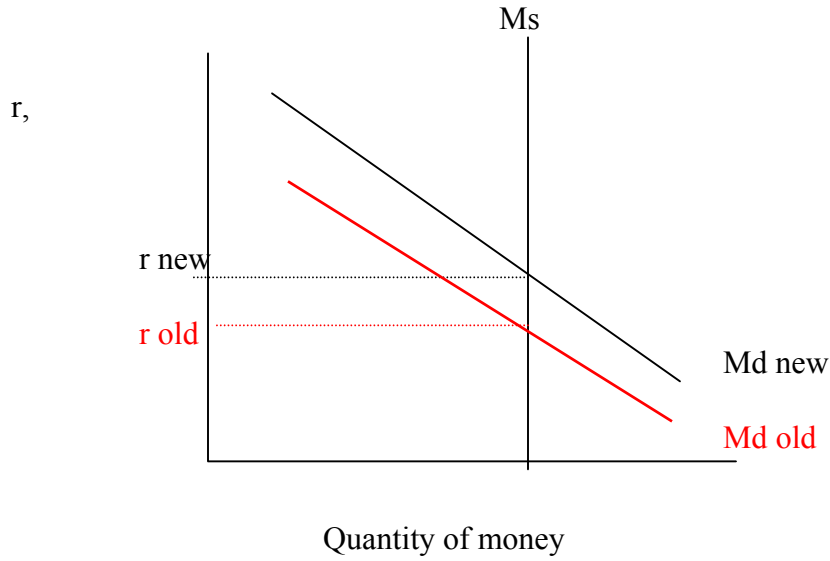
Consumption                      x   increase           decrease           unchanged

policies increase disposable income  $\rightarrow$  higher consumption

National Income                      x   increase           decrease           unchanged

policies cause higher  $C \rightarrow$  higher  $AE \rightarrow$  higher  $Y$

2. (finished) Use two completely-labeled graphs to illustrate the effects if the new President's tax and spending proposals are implemented on equilibrium GDP and average interest rates.



3. (12 points) Name three methods that the Fed employ to increase short run average interest rates. Describe each method in 1 sentence each.

raise required reserve ratio—an increase in the minimum legal ratio of reserves to deposits that banks must hold

raise discount rate—an increase in the interest rate that the Fed charges private banks for loans

open market sale of government securities—Fed sells “used” Treasury bonds in secondary markets