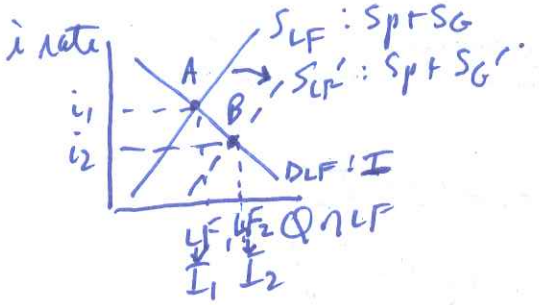
Econ 102
Summer 2014
Quiz #4

Name ANNOTATED KEY

Please write all answers neatly and legibly.

1. (3 points) Suppose the loanable funds market is initially in equilibrium. Holding everything else constant, if the government increases the size of its surplus what do you predict will happen to the equilibrium interest rate and the equilibrium level of private investment spending? Explain your answer verbally and also provide a graph of the loanable funds market to support your analysis. Make sure your graph is completely and fully labeled.

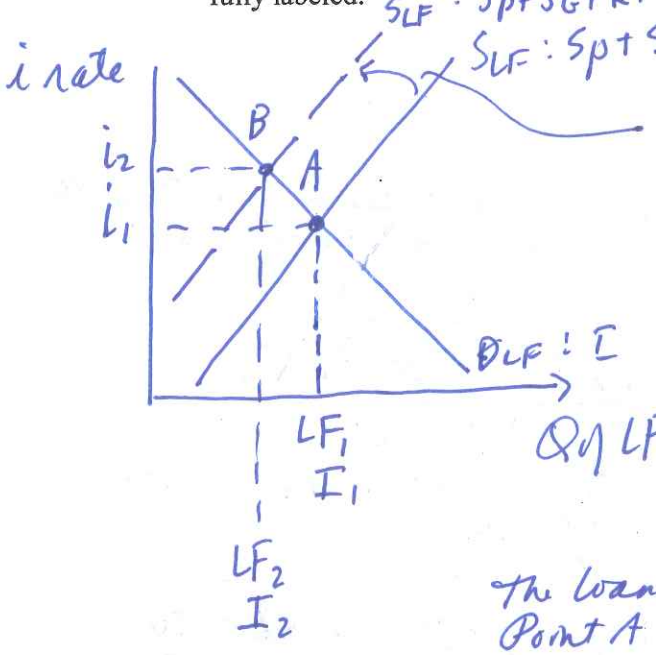


$S_G < S_G'$ since surplus ↑

Predict:
interest rate will ↓ from i_1 to i_2
investment will ↑ from I_1 to I_2

Supply of loanable funds curve will shift to right (S_{LF} to S_{LF}') when the government increases the size of its surplus. Equilibrium in the loanable funds market will change from point A to point B: interest rate will fall from i_1 to i_2 and investment spending will increase from I_1 to I_2.

2. (2 points) Suppose the loanable funds market is initially in equilibrium. Holding everything else constant, what will happen to the equilibrium interest rate and the equilibrium level of private savings if the country runs a trade surplus? Explain your answer verbally and also provide a graph of the loanable funds market to support your analysis. Make sure your graph is completely and fully labeled.



S_{LF} will shift left with trade surplus

When the country runs a trade surplus ($X > M$) this implies that capital inflows are negative (if $X - M > 0$ then $M - X < 0$). The supply of loanable funds curve will shift from S_{LF} to S_{LF}'. Equilibrium in the loanable funds market will change from Point A to Point B: interest rate will increase from i_1 to i_2; private investment spending will decrease from I_1 to I_2; private savings will increase due to the higher interest rate.

3. Suppose that an economy can be described with the following information:
$Sp = -20 + .2(Y - T)$
$T = 10$
$G = 20$
$I = 20$
$X - M = -20$
where Sp is private savings, Y is real GDP, T is autonomous taxes, G is government spending, I is private investment spending, and (X – M) is net exports. Assume there are no government transfers.

a. (1 point) From this information we know that the government is currently operating with a Budget Deficit and that the economy has a trade Deficit.

$G = 20, T = 10 \Rightarrow G - T = 20 - 10 = 10$: govt spending > govt revenue $\Rightarrow$ Budget Deficit. $X - M = -20 \Rightarrow$ Imports > Exports $\Rightarrow$ Trade Deficit

b. (1 point) What is this economy's consumption function with respect to Y?

$C = a + b(Y - T)$ since $TR = 0$

$Sp = -a + (1-b)(Y - T) \Rightarrow Sp = -20 + .2(Y - T)$

So, $\boxed{C = 20 + .8(Y - T)} \Rightarrow C = 20 + .8[Y - 10]$

$C = 20 + .8Y - 8$

$\boxed{C = 12 + .8Y}$ ← C function with respect to Y

C function with respect to disposable income

c. (2 points) What is the equilibrium level of output in this economy given the above information? For full credit show your work.

In equilibrium, $Y = AE$

$Ye = C + I + G + (X - M)$

$Ye = 12 + .8Ye + 20 + 20 + (-20)$

$.2Ye = 32$

$\boxed{Ye = 160}$

$160.$
$.2\overline{)32.0}$
2
12

!!

d. (1 point) What will be the change in GDP if the government of this economy increases its spending to 40 while holding everything else constant? For full credit show your work.

$G = 20$ initially $\Rightarrow$ now $G' = 40$

$\Delta Y = \left(\frac{1}{1-b}\right)(\Delta G)$

$\Delta Y = \left(\frac{1}{.2}\right)(20)$

$\boxed{\Delta Y = 5(20) = 100}$

Or, $Ye' = AE'$

$Ye' = 12 + .8Ye' + 40 + 20 + (-20)$

$.2Ye' = 52$

$Ye' = 260$

$\boxed{\Delta y = Ye' - Ye = 260 - 160 = 100}$

If you read question as G↑ by 40:
$G = 20$ initially $\Rightarrow$ now $G' = 60$

$\Delta Y = \left(\frac{1}{1-b}\right)\Delta G$

$\Delta Y = \left(\frac{1}{.2}\right)(40)$

$\boxed{\Delta Y = 5(40) = 200}$

Or, $Ye' = AE'$

$Ye' = 12 + .8Ye' + 60 + 20 + (-20)$

$.2Ye' = 72$

$Ye' = 360$

$\boxed{\Delta Y = Ye' - Ye = 360 - 160 = 200}$