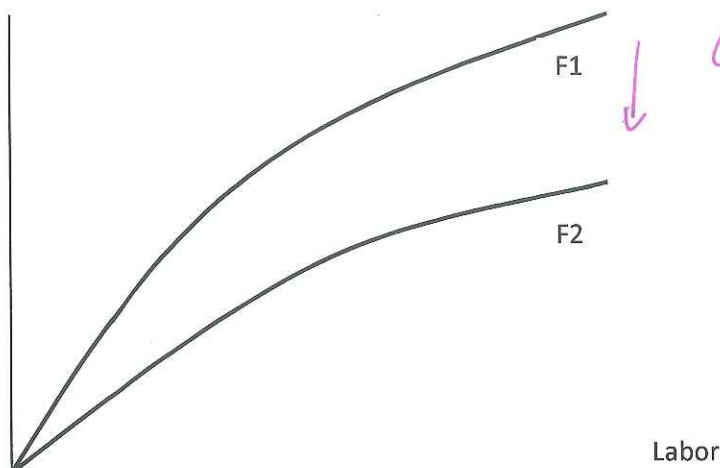


Real GDP



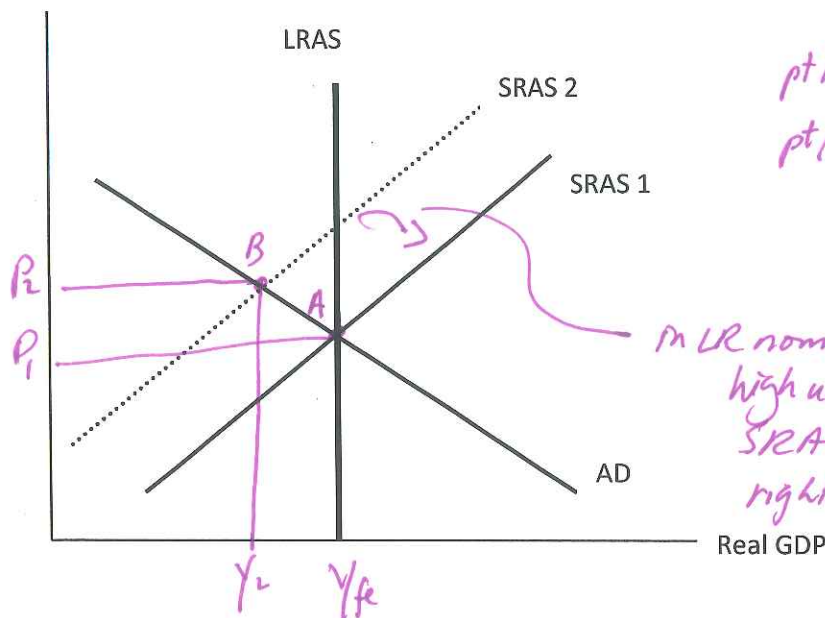
Could be due to ↓ in technology and/or ↓ in capital and/or ↓ in human capital

1. In the above diagram, the aggregate production function of Iraq shifts from F1 to F2. Which of the following could cause such a shift in the aggregate production function?

a.) A decrease in physical capital or human capital

b.) A decrease in the labor force due to the war → *this would cause movement along F1 - no shift*

Aggregate price level



*pt A: initial LR equilibrium
 pt B: Short-run equilibrium
 ⇒ P ↑ from P1 to P2
 ⇒ Y ↓ from Yfe to Y2*

In LR nom wages will ↓ due to high unemployment at Y2 ⇒ SRAS2 will shift to the right

2. In the above diagram, LRAS is the long run aggregate supply curve, SRAS 1 and SRAS 2 are the short run aggregate supply curves, and AD is the aggregate demand curve. The initial short run aggregate supply curve is SRAS 1. Suppose there is a negative supply shock due to an increase in the price of oil. Which of the following will happen to bring the economy back to a long-run macroeconomic equilibrium?

a.) Consumers and firms will change their expectations so that the AD will shift to the right in the short run. *No reason to expect this.*

b.) There will be an increase in consumers' wealth so that the AD will shift to the right in the short run. *No reason for this.*

c.) There will be a decrease in nominal wages so that the SRAS will shift to the right.

d.) There will be an increase in nominal wages so that the SRAS will shift to the right.

The story is always about nominal wage adjustment

decrease

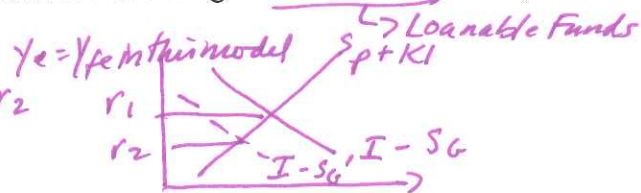
3. Suppose an economy is in long run equilibrium. According to the Classical Model, a decrease in the government deficit will

a.) Have no effect on the level of real GDP.

b.) Have no effect on the interest rate.

c.) (a) and (b) are both true statements.

d.) (a) and (b) are both false statements.



4. The assumption that markets clear in the classical model means that:

a.) The price in every market is fixed, and the demand and supply curves in each market will shift so that the quantities supplied and demanded are equal at that particular price. *prices are flexible*

b.) Subsidies are paid by the government to producers and consumers so that the quantity demanded and supplied are equal. *No reliance on subsidies here - this is a "junk" answer*

c.) International trade is not allowed. *KI are explicitly modelled*

d.) The prices in all markets adjust so that quantities supplied and demanded are equal in each market. ✓

5. Consider the loanable funds market of an economy. Suppose there is an increase in the level of transfer payments made by the government, holding everything else constant. This will result in

a.) an increase in the equilibrium interest rate and a decrease in the equilibrium level of private investment.

b.) an increase in the equilibrium interest rate and the equilibrium level of private investment. ✓

c.) a decrease in the equilibrium interest rate and an increase in the equilibrium level of private investment.

d.) a decrease in the equilibrium interest rate and the equilibrium level of private investment. ✓

#5

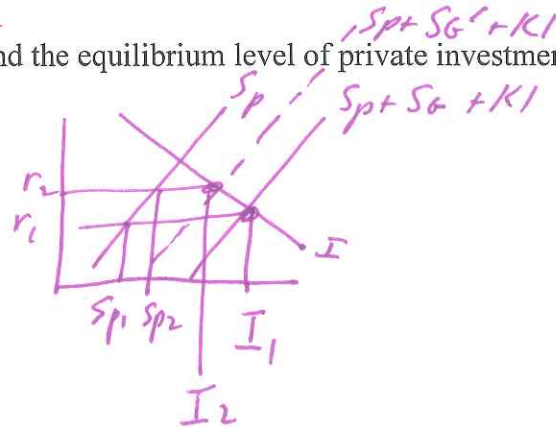
$$S_G = (T - TR) - G$$

$$TR \uparrow \Rightarrow T - TR \downarrow \Rightarrow S_G \downarrow \text{ to } S_G'$$

$$r \uparrow \Rightarrow S_p \uparrow \text{ from } S_{p1} \text{ to } S_{p2}$$

$$C \downarrow$$

$$I \downarrow \text{ from } I_1 \text{ to } I_2$$



Answer the following two questions using the information from the chart below:

Real GDP or Output	\$5,000,000
Consumer Spending	\$1,500,000
Total Taxes	\$500,000
Transfer Payments	\$375,000
Government Spending	\$500,000

$$Y = C + S_p + (T - TR)$$

$$5,000,000 = 1,500,000 + S_p + 500,000 - 375,000$$

$$5,000,000 - 1,625,000 = S_p$$

$$3,375,000 = S_p$$

6. What is the amount of private saving in this closed economy? →

- a.) \$3,500,000
- b.) \$3,375,000
- c.) \$3,000,000
- d.) \$3,125,000

$$NS = S_p + S_g$$

$$NS = 3,375,000 + S_g$$

$$S_g = (T - TR) - G$$

7. What is the amount of national saving in this closed economy? →

- a.) \$3,375,000
- b.) \$2,999,125
- c.) \$3,500,000
- d.) \$3,000,000

$$S_g = 125,000 - 500,000$$

$$S_g = -375,000$$

$$NS = 3,375,000 + (-375,000)$$

$$NS = 3,000,000$$

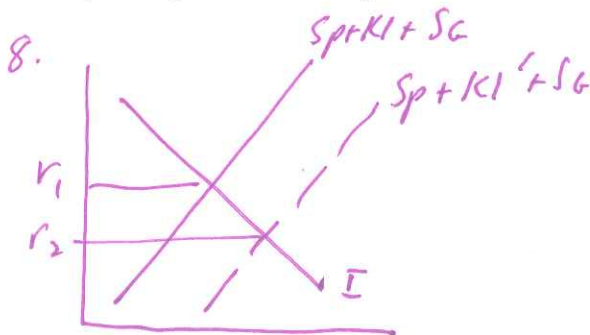
8. Consider the loanable funds market for an economy. Suppose there is an increase in capital inflow (an increase in the difference between imports and exports), holding everything else constant. This increase in the level of capital inflows will cause

- a.) the equilibrium interest rate to increase, while the equilibrium level of private investment decreases. ~~X~~
- b.) the equilibrium interest rate and the equilibrium level of private investment to increase. ~~X~~
- c.) the equilibrium interest rate to decrease, while the equilibrium level of private investment increases. ✓
- d.) the equilibrium interest rate to decrease, while the equilibrium level of private investment will increase only if the government is running a balanced budget. If the government does not run a balanced budget, then the equilibrium level of investment will decrease. *Junk answer here*

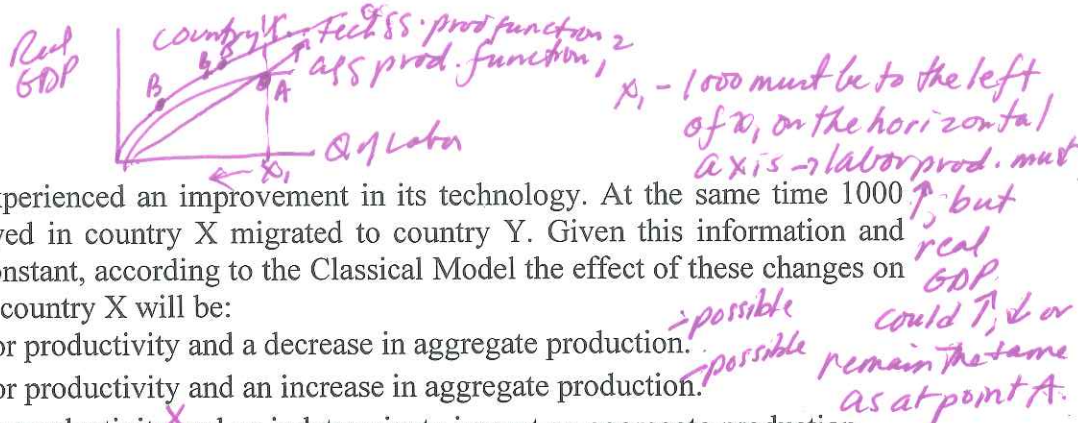
a, b, have interest rate

9. Which of the following would not cause a shift to the short run aggregate supply curve?

- a.) A sudden shortage of oil *causes SRAS to shift*
- b.) Technological advancements which result in large increases in productivity *causes SRAS to shift*
- c.) Huge increases in government purchasing associated with a war such as WWII *causes AD to shift*
- d.) A huge storm destroys most of a nation's food crops *causes SRAS to shift due to impact on commodity prices*



$KI' > KI \Rightarrow r \downarrow$ from r_1 to r_2
 $I \uparrow, S_p \downarrow, C \uparrow$



10. In 1999 country X experienced an improvement in its technology. At the same time 1000 lawyers that were employed in country X migrated to country Y. Given this information and holding everything else constant, according to the Classical Model the effect of these changes on the aggregate economy in country X will be:

- a) An increase in labor productivity and a decrease in aggregate production.
- b) An increase in labor productivity and an increase in aggregate production.
- c) A decrease in labor productivity and an indeterminate impact on aggregate production.
- d) An increase in labor productivity and an indeterminate impact on aggregate production.

Use the table below to answer the next **two** questions (assume this question is about a **closed economy**):

Real interest rate (percent per year)	Planned Investment (billions of 2003 dollars)	Private saving (billions of 2003 dollars)	Net taxes (billions of 2003 dollars)	Government purchases (billions of 2003 dollars)	Budget Deficit = $G - (T - M) = -10$	$S_g = (T - M) - G$	$S_p + S_g$
3	60	30	30	20	10	40	
4	50	40	30	20		50	
5	40	50	30	20		60	
→ 6	30	60	30	20		70	
7	20	70	30	20		80	

11. When the real interest rate is 6 percent, then the

- a) total supply of loanable funds is equal to \$60 billion and the government budget surplus is \$20 billion.
- b) total supply of loanable funds is equal to \$70 billion and the government budget deficit is \$10 billion.
- c) total supply of loanable funds is equal to \$70 billion and the government budget surplus is \$10 billion.
- d) total supply of loanable funds is equal to \$60 billion and the government budget deficit is \$20 billion.

12. The equilibrium interest rate for this closed economy is

- a) 4 %
- b) 5 %
- c) 6 %
- d) 3 %

$$r_c \Rightarrow I = NS$$

$$I = S_p + S_g$$

$$50 = 50 \text{ at } r = 4\%$$

Use the information given below to answer the next question.

13. The company Kelly Kakes annually uses \$20 million worth of sugar, flour, butter, and eggs (assume all four of these ingredients are produced in the same year that the cakes are produced) to produce its cakes. Annual wages and salaries at Kelly Kakes for the year equal \$30 million; Kelly Kakes' only other annual expense is \$10 million in interest that it pays on its bonds. The annual profit for the owner of Kelly Kakes is \$5 million. The portion of GDP attributable to Kelly Kakes is

- a) Indeterminate because we cannot calculate Kelly Kakes' contribution to GDP without information about the value added by Kelly Kakes or the rate of inflation in the economy.
- b) \$5.
- c) \$45.
- d) \$20.

wages + interest + rent + profit = GDP
 $30 + 10 + 0 + 5 = 45$

Use the information given below to answer the next question.

14. In Country X, a **closed economy**, the government decides to increase the level of taxes it collects. Assume that individuals in Country X always save a fraction of their net income, which is their income after they pay their taxes and transfers (i.e., this implies that individuals in Country X use their income for consumption spending, private savings, and to pay their net taxes). Furthermore, in Country X annual investment is currently greater than annual depreciation. Given this information and holding everything else constant, the impact of the increase in taxes according to the Classical Model will be:

- a) A decrease in investment in the current period, a decrease in interest rates, and a decrease in capital in the next period.
- b) An increase in investment in the current period, an increase in interest rates, and an increase in capital in the next period.
- c) A decrease in investment in the current period, an increase in interest rates, and an increase in capital in the next period.
- d) An increase in investment in the current period, a decrease in interest rates, and an increase in capital in the next period.

↑ in T ⇒ SG ↑ ⇒ interest rates ↓ ⇒ I ↑

If I ↑ this period we have more capital next period

Use the information given below to answer the next question.

The market supply and demand for labor in Baraboo are represented by the following equations:

Labor Supply: $L_s = w - 10$

Labor Demand: $L_D = 40 - w$

(where w is the real wage and L_s and L_D are in millions of workers)

Baraboo's aggregate production function is $Y = \sqrt{K * L}$.

w = 10 = 40 - w
 $2w = 50$
 $w = 25$

L = 15

*Y = \sqrt{15 * 15} = 15*

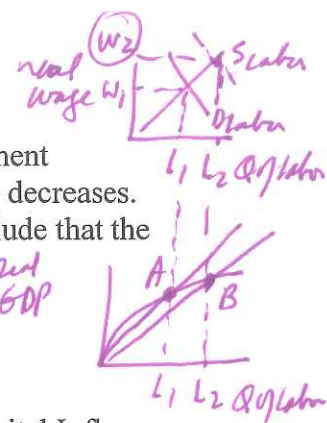
15. If the level of capital (K) is \$15 million, what is the labor productivity of the average worker in Baraboo?

- a) \$1 per unit of labor
- b) \$.33 per unit of labor

labor prod = \frac{Y}{L} = \frac{15}{15} = \\$1/Labor

16. Consider a labor market and an aggregate production function. After the government institutes a new policy we observe that the real wage increases and labor productivity decreases. You are told the policy change shifted only one of the labor market curves: you conclude that the policy shifted the _____ curve.

- a) Labor supply
- b) Labor demand



Here all the graphs!

17. If National Savings equals \$120 billion and Investment is \$ 140 billion, then Capital Inflow is positive.

- a. true
- b. false

$$NS = Sp + Sg$$

$$NS + KI = I \text{ in equilibrium}$$

$$120 + KI = 140$$

$$KI = 20 > 0!$$

18. Consider an open economy. In this economy net exports equal zero and the government is currently operating with a budget deficit. In this scenario, investment is less than private savings.

- a. true
- b. false

$$\text{Net exports} = 0 \Rightarrow KI = 0 \Rightarrow NS = I$$

$$Sp + Sg = I$$

$Sg < 0$ if gov runs a deficit
So $Sp > I$

19. Consider a country with a closed economy. Suppose the government then decides to increase its spending. Holding everything else constant, which of the following statements is **NOT** true given this increase in government spending?

- a. The equilibrium interest rate will be higher. *True*
- b. Private saving will decrease. *Not true*
- c. The equilibrium level of investment will decrease. *True*
- d. National saving will decrease. *True*

$G \uparrow \Rightarrow (T - TR) - G$ will be smaller
or $G - (T - TR) = \text{govt def. will be larger}$
 \rightarrow interest rates will \uparrow

Use the following Model to answer the next **two** questions:

$$Y = C + Sp + T - TR$$

$$Sg = T - TR - G$$

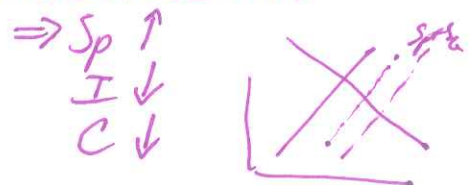
$$NS = Sp + Sg$$

$$NS = Y - C - G$$

$$KI = M - X$$

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

In equilibrium, leakages=injections



Where Y = real GDP

- C = consumption spending
- Sp = private saving
- T = taxes
- TR = transfers
- T - TR = net taxes
- Sg = government saving
- G = government spending
- KI = capital inflows
- M = Imports

X = exports
I = investment

$$\begin{aligned} T &= 300 \\ I &= 55 \\ K1 &= 15 \\ C &= 220 \\ Y &= 450 \end{aligned}$$

$$\begin{aligned} I &= S_p + S_g + K1 \text{ in equilibrium} \\ 55 &= NS + 15 \\ 40 &= NS = S_p \text{ since } S_g = 0 \text{ (Balanced Budget)} \end{aligned}$$

Furthermore, suppose the government runs a balanced budget (that is, $G - T + TR = 0$) and collects \$300 in tax revenue. Firms spend \$55 on new capital and capital inflow equals \$15. Income equals \$450 and \$220 of that income is spent on consumption. Furthermore, leakages equal injections in this economy.

20. What is the level of private saving in this economy?

- \$55 since private saving must equal investment in order for the loanable funds market to be in equilibrium.
- \$70 since businesses are spending \$55 of their own money plus \$15 provided via the foreign sector (i.e., capital inflows).
- \$40 since businesses are demanding \$55 worth of loanable funds and the foreign sector is supplying only \$15 worth of loanable funds.
- \$25 since the total demand for loanable funds is \$40 and there are \$15 of loanable funds being supplied through capital inflows.

21. What is the level of government transfers in this economy?

- \$0
- \$90
- \$110
- \$125

$$\begin{aligned} Y &= C + S_p + (T - TR) \\ 450 &= 220 + 40 + 300 - TR \\ 450 &= 560 \\ TR &= 110 \end{aligned}$$

Use the following information to answer the next two questions:

Consider the market for loanable funds in a closed economy. The business demand for funds is given by $r = 12 - (1/2)I$, where I is investment (measured in millions of dollars) and r is the interest rate (measured as a percentage).

The private savings function is: $r = S_p$, where S_p is private savings (measured in millions of dollars).

Assume that the government's deficit changes from \$0 to \$6 million. (Note: $\text{deficit} = G - (T - Tr)$)

22. How much business investment is crowded out as a result of this increase in government deficit?

- \$0
- \$2 million
- \$4 million
- \$6 million

$$\begin{aligned} 12 - \frac{1}{2}I &= S_p \\ &\text{in equilibrium w/ closed economy + balanced budget} \\ I_1 &= S_p \\ 12 - \frac{1}{2}I_1 &= I_1 \\ 12 &= \frac{3}{2}I_1 \\ 2 \cdot 4 &= I_1 \\ 8 &= I_1 \end{aligned}$$

$$\begin{aligned} S_g &= -6 \Rightarrow S_p + S_g = r - 6 \Rightarrow I = NS \text{ if closed economy} \\ \text{rewrite } r &= 12 - \frac{1}{2}I \Rightarrow 24 - 2r = r - 6 \\ \frac{1}{2}I &= 12 - r \\ I &= 24 - 2r \\ 30 &= 3r \\ 10 &= r \\ \text{if } r &= 10 \Rightarrow I_2 = 24 - 2(10) = 4 \\ I_1 - I_2 &= 4 \end{aligned}$$

23. How much does consumption change?

- a. decrease by \$2 million
- b. increase by \$4 million
- c. decrease by \$4 million
- d. can't determine

*At $r = 10 \Rightarrow Sp_2 = \10 million
 At $r = 8 \Rightarrow Sp_1 = 8$ million
 so as $Sp \uparrow$ by \$2 million, $C \downarrow$
 by \$2 million*

24. There are 100 households in the economy. Half of these households save according to $r = 2 + Sp/10$ while the other half of the households save according to $r = 5 + Sp/5$ where each of these equations expresses the saving function for one household. What is the market private savings function?

- a. $r = 2 + Sp/500$ for $2 < r < 5$ and $r = 5 + Sp/250$ for $r > 5$ *X*
- b. $r = 2 + Sp/500$ for $2 < r < 5$ and $r = 3 + Sp/750$ for $r > 5$
- c. $r = 100 + 5Sp$ for $2 < r < 5$ and $r = 250 + 10Sp$ for $r > 5$
- d. $r = 3.5 + 3Sp/500$ *X*

25. Holding all else constant, an increase in the savings rate will shift

- a) The supply curve in the loanable funds market
- b) The demand curve in the loanable funds market *X*

people save more at every interest rate

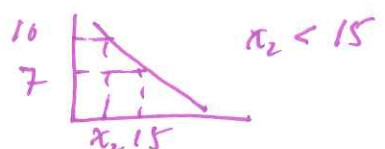
26. How will a government budget deficit affect the equilibrium real interest rate, as determined in the loanable funds market?

- a) The equilibrium real interest rate will increase, relative to the balanced budget case
- b) The equilibrium real interest rate will decrease, relative to the balanced budget case



27. Consider the demand for loanable funds by businesses in France. If the real interest rate is 7%, the quantity of funds demanded is \$15 million. If the real interest rate increases to 10%, then the quantity of funds demanded will be

- a) More than \$15 million *X*
- b) Less than \$15 million



28. Due to a newspaper report on global warming, businesses expect that their profits will be lower in the immediate future. How will this event affect the loanable funds market?

- a) In equilibrium, the real interest rate will increase and the quantity of loanable funds will decrease
- b) In equilibrium, the real interest rate will decrease and the quantity of loanable funds will decrease.

↓ in Business Confidence shifts investment demand curve to left

Interest Rate
 24. Rate

Interest Rate
 7

Interest Rate
 5

Interest Rate
 5

Interest Rate
 2

50 units

50 units

50 units

50 units

10 Q of LF

500 Q of LF

10

500

long explanation!

same as this: $r = 2 + \frac{1}{500} Sp$

eliminates (c) & (d)

$r = 2 + \frac{Sp}{500}$ $r = 5 + \frac{Sp}{250}$

$\frac{Sp}{500} = r - 2$ $\frac{Sp}{250} = r - 5$

$Sp = 500r - 1000$ $Sp = 250r - 1250$

$750r = Sp + 2250$

$r = \frac{Sp + 2250}{750}$

8

$Sp_{market} = 750r - 2250$

Use the information below to answer the following two questions.

The following table provides equations for supply and demand in the 2010 South Korean loanable funds market. In the equations that are given r is the real interest rate expressed as a percentage (i.e. if the real interest rate is 10%, then the value of r in the equation would be 10). Q_{LF} is the quantity of loanable funds (either savings S or investment I).

Supply of loanable funds (savings S)	$Q_{LF} = 25r + 200$
Demand for loanable funds (investment I)	$Q_{LF} = 500 - 25r$

29. Assume that South Korea is a closed economy. Solve for the equilibrium real interest rate (r^*) and the equilibrium quantity of loanable funds traded (Q_{LF}^*).

- a) $r^* = 6\%$; $Q_{LF}^* = 350$
- b) $r^* = 8\%$; $Q_{LF}^* = 400$
- c) $r^* = 10\%$; $Q_{LF}^* = 225$
- d) $r^* = 12\%$; $Q_{LF}^* = 200$

$25r + 200 = 500 - 25r$
 $50r = 300$
 $r = 6\% \Rightarrow$ Answer (a) ! can stop here
 if $r = 6 \Rightarrow Q_{LF} = 150 + 200 = 350$
 or $Q_{LF} = 500 - 25(6) = 350 \checkmark$

30. Now assume that South Korea is an open economy and its net exports (NX) are expressed by the equation $NX = 75 - 25r$. Solve for the equilibrium real interest rate (r^*) and the equilibrium level of net exports (NX^*) under this assumption.

- a) $r^* = 7\%$; $NX^* = -100$
- b) $r^* = 6\%$; $NX^* = -75$
- c) $r^* = 5\%$; $NX^* = -50$
- d) $r^* = 4\%$; $NX^* = -25$

$NS + KI \Rightarrow KI = -(NX) = -(75 - 25r)$
 $KI = 25r - 75$
 $NS + KI = (25r + 200) + (25r - 75) = 50r + 125$
 $NS + KI = I \Rightarrow 50r + 125 = 500 - 25r$
 $75r = 375 \Rightarrow r = 5\%$

31. Interpret the demand curve in the loanable funds market as a collection of business investment projects that may or may not receive funding in equilibrium. There are many firms, and each firm owns an investment project with some certain rate of return that is known ahead of time. If the loanable funds market is in equilibrium, we can say that

- a) All investment projects receive funding, with all firms borrowing at the equilibrium real interest rate *Not all projects get funded*
- b) Only the most productive investment projects receive funding, with a firm borrowing at the equilibrium real interest rate provided that the rate of return on their project exceeds the equilibrium real interest rate \checkmark
- c) Only the least costly investment projects receive funding, with a firm borrowing at the equilibrium real interest rate provided that the rate of return on their project is less than the equilibrium real interest rate *more*
- d) All investment projects receive funding, with all firms borrowing at a real interest rate equal to the rate of return of their project \checkmark

to the equilibrium interest rate

The following table lists aggregate statistics (in billions of \$US) for Spain from 2008-2009. Assume that Spain is a small open economy.

Year	2008	2009
GDP (Y)	150	180
Private Consumption (C)	115	135
Gross Domestic Investment (I)	10	15
Government Purchases of Goods and Services (G)	30	36
Government Savings (S_{public})	B	0
Net Government Taxes after Transfers (T - TR)	20	A
Imports (M)	19	21

In 2009
 $S_{2009} = Y - C - (T - TR)$
 $S_{2009} = 180 - 135 - 36$
 $S_{2009} = 9$
 $150 = 136 + X$
 $14 = X$
 $X - 19 = -5$
 $KI = 5$

Use this table to answer the following two questions.

$Y = C + I + G + (X - M)$
 $150 = 115 + 10 + 30 + X - 19$
 $150 = 155 + X - 19$

32. In the table, entries A and B are missing. Based on the other entries of the table, what are the values of A and B?

- a) A = 36; B = -10
- b) A = -36; B = 10
- c) A = 25; B = -6
- d) A = -25; B = 6

$SG + Sp + KI = I$ in equilibrium
 $B + \dots$ depend.
 $B + Sp + 5 = 10$
 $B + 15 + 5 = 10$
 $B = -10$
 $Sp = Y - C - (T - TR)$
 $Sp = 150 - 115 - 20$
 $Sp = 15$
 2008 Answer must be (a)

33. What is the growth rate of private savings for Spain from 2008 to 2009?

- a) 20%
- b) -20%
- c) 40%
- d) -40%

growth rate of $Sp = \frac{Sp_{2009} - Sp_{2008}}{Sp_{2008}} (100\%)$
 $= \left(\frac{9 - 15}{15} \right) (100\%) = \left(\frac{-6}{15} \right) 100\% = \left(\frac{-2}{5} \right) 100\%$
 $= -40\%$

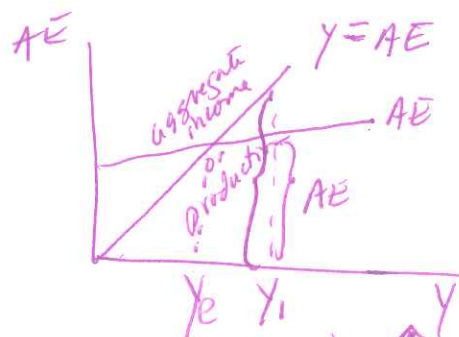
34. In the Keynesian model, cyclical unemployment is caused by

- a. a negative spending shock.
- b. a positive spending shock.

Definitional

35. When aggregate expenditure is less than aggregate income, inventories

- a. decrease.
- b. increase



inventories $\uparrow \Rightarrow$ act as signal to \downarrow production to ward Y_e

But let's find A:
 $SG = 0$ in 2009
 $SG = (T - TR) - G$
 $0 = A - 36$
 $A = 36$
 $Sp_{2008} = 15$
 $Sp_{2009} = 9$

36. In the Classical model, a fiscal policy that increases government spending and leaves taxes unchanged is going to cause (assume income is unchanged)

- a. an increase in both private consumption and private savings. *X They move in opposite directions*
- b. an increase in private saving, but a decrease in private consumption.
- c. only a decrease in private savings. *$Y = C + Sp + (T - TR)$ if $Y \neq (T - TR)$ do not A, then $\downarrow Sp$ implies $\uparrow C$*
- d. a shift to the right of the supply of loanable funds.

↳ if modelled on S&F side it would be leftward shift

37. Consider the following information about the closed country of Myland:

$(G - T) = \$600$

$T = \$400$

$I = \$800 - 4000 i_R$

The equilibrium interest rate, i_R , is 10%

*In equilibrium $I = NS$
 $I = Sp + S_G$
 $G - T = 600$
 $G - 400 = 600$
 $G = 1000$
 $S_G = (T - TR) - G$ but $TR = 0$
 \rightarrow So $S_G = 400 - 1000 = -600$
 $I = 800 - 4000(0.1) = 400$*

(Hint: in this problem, the real interest rate is written as a decimal: e.g., if the real interest rate is 10%, it is written as $i_R = 0.10$).

*$400 = -600 + Sp$
 $1000 = Sp$*

According to the Classical model, leakages in this problem equal

- a. \$1,400 .
- b. \$1,000 .
- c. \$600 .
- d. \$1,800 .

*Leakages = $Sp + (T - TR) + IM$
 $Leakages = 1000 + 400 + 0$
 $Leakages = 1400$*

38. Which of the following statements best describes the differences between the Classical and Keynesian models presented in class?

- a. When the economy is in the midst of an economic recession, the Keynesian economist typically will advocate governmental intervention while the Classical economist will advocate patience.
- b. According to the Classical Model, economic fluctuations are due to a disequilibrium in the labor market; in the simple Keynesian Model, when aggregate expenditure is greater than actual production, prices rise to eliminate this disequilibrium.

prices assumed constant in Keynesian Model

39. Deliberate actions by policy makers that cause fiscal policy to be expansionary when the economy contracts are called automatic stabilizers.

- a. True
- b. False

Definitional

Definitional

$$2 = \frac{1}{1-b} \rightarrow b = \frac{1}{2} = .5$$

$$2 - 2b = 1 \rightarrow \frac{-b}{1-b} = -1$$

$$1 = 2b$$

40. Consider an economy using the Keynesian model as presented in class. The value of the autonomous expenditure multiplier $[1/(1-b)]$ in this economy is 2. If government spending increases by \$50 while taxes simultaneously increase by \$50, what will happen to the equilibrium level of GDP?

- a. It will not effectively change the level of output since the increase in government spending which stimulates spending is exactly offset by the increase in taxes which contracts spending.
- b. It will cause the equilibrium level of GDP to increase by less than \$50 because of the multiplier effect.
- c. It will cause the equilibrium level of GDP to increase by more than \$50 because of the multiplier effect.
- d. It will cause the equilibrium level of GDP to increase by exactly \$50 due to the multiplier effect.

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

Use the information below to answer the next two questions:

$$\Delta Y = 2(50) + (-1)(50)$$

$$\Delta Y = 50$$

Y	T	Y-T	C
0	10	-10	16
100	10	90	56
200	10	190	96
300	10	290	136

41. What is the consumption function as a function of aggregate income?

- a. $C=20+.4(Y-T)$
- b. $C=16+.4(Y-T)$
- c. $C=16+.4Y$
- d. $C=24+.4Y$

$$C = a + b(Y-T)$$

$$b = \frac{\Delta C}{\Delta(Y-T)} = \frac{40}{100} = .4$$

$$C = a + .4(Y-T) \Rightarrow 56 = a + .4(90)$$

$$56 = a + 36$$

$$20 = a$$

$$C = 20 + .4(Y-T)$$

42. What is the saving function as a function of disposable income?

- a. $S=-20+.6(Y-T)$
- b. $S=-16+.6(Y-T)$
- c. $S=-16+.6Y$
- d. $S=-24+.6Y$

$$C = 20 + .4(Y-10)$$

$$C = 20 + .4Y - 4$$

$$C = 16 + .4Y$$

$$S_p = -20 + .6(Y-T)$$

$$S_g + I_p = (275 + 1000r) + (-225)$$

$$NS = 50 + 1000r$$

Consider the following information for the next question:

$$G - T = 225$$

$$S = 275 + 1000 i_R$$

$$I = 100 - 250 i_R$$

$$S_g = T - G = -225$$

I = NS in equilibrium

$$100 - 250r = 50 + 1000r$$

$$50 = 1250r$$

$$4\% = \frac{1}{25} = \frac{50}{1250} = r$$

Where $G-T$ denotes the budget deficit, S denotes household savings, I denotes planned investment and i_R denotes the real interest rate. (Hint: in this problem, the real interest rate is written as a decimal: e.g. if the real interest rate is 10%, it is written as $i_R=0.10$)

43. The equilibrium interest rate and quantity of savings in this economy is:

- a. $i_R = 5\%$; $S=325$
- b. $i_R = 6.7\%$; $S=341.7$
- c. $i_R = 4\%$; $S=315$
- d. $i_R = 14\%$; $S=415$

HH

$$NS = .50 + 1000r$$

$$NS = 50 + 1000(.04) = 90$$

$$S_p = 275 + 1000(.04) = 315$$

Use the following information about a closed economy to answer the next two questions.

$$C = 100 + 0.5(Y-T)$$

$$I = 100$$

$$G = 70$$

$$T = 0.2Y$$

Y-T = Disposable Income

$$Y - .2Y = .8Y = \text{Disposable Income}$$

44. What is the value of disposable income for this economy?

- a. $0.5(Y-T)$
- b. $100 + 0.4(Y-T)$
- c. $0.8(Y-T)$
- d. $0.8Y$

In equilibrium

$$Y_e = AE$$

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

$$Y_e = 100 + .5(Y_e - .2Y_e) + 100 + 70$$

$$Y_e = 270 + .4Y_e \implies .6Y_e = 270$$

$$Y_e = 450$$

$$\begin{array}{r} 450 \\ .6 \overline{) 2700} \\ \underline{24} \\ 30 \end{array}$$

45. What is the equilibrium level of income for this economy?

- a. \$190
- b. \$270
- c. \$450
- d. \$900

In equilibrium

$$Y_e = AE$$

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

$$Y_e = 100 + .5(Y_e - .2Y_e) + 100 + 70$$

$$Y_e = 270 + .4Y_e \implies .6Y_e = 270$$

$$Y_e = 450$$

46. If autonomous consumption is \$200, the MPC is 0.5, taxes are \$100, investment spending is \$100, government spending is \$50, and net exports are \$0, what is the short-run equilibrium level of output?

- a. \$400
- b. \$500
- c. \$600
- d. \$800

$$C = 200 + .5(Y - 100)$$

$$I = 100$$

$$G = 50$$

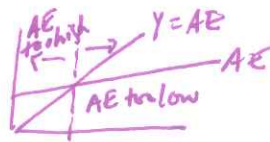
$$X - M = 0$$

Y_e = AE

$$Y_e = 200 + .5Y_e - 50 + 100 + 50 + 0$$

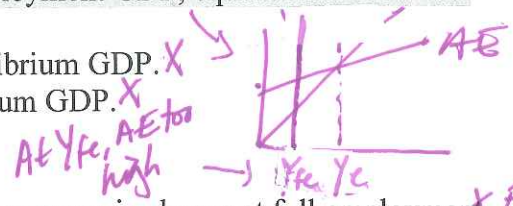
$$.5Y_e = 300$$

$$Y_e = 600$$



47. In the Keynesian model what is true about the relationship between equilibrium GDP and full employment GDP?

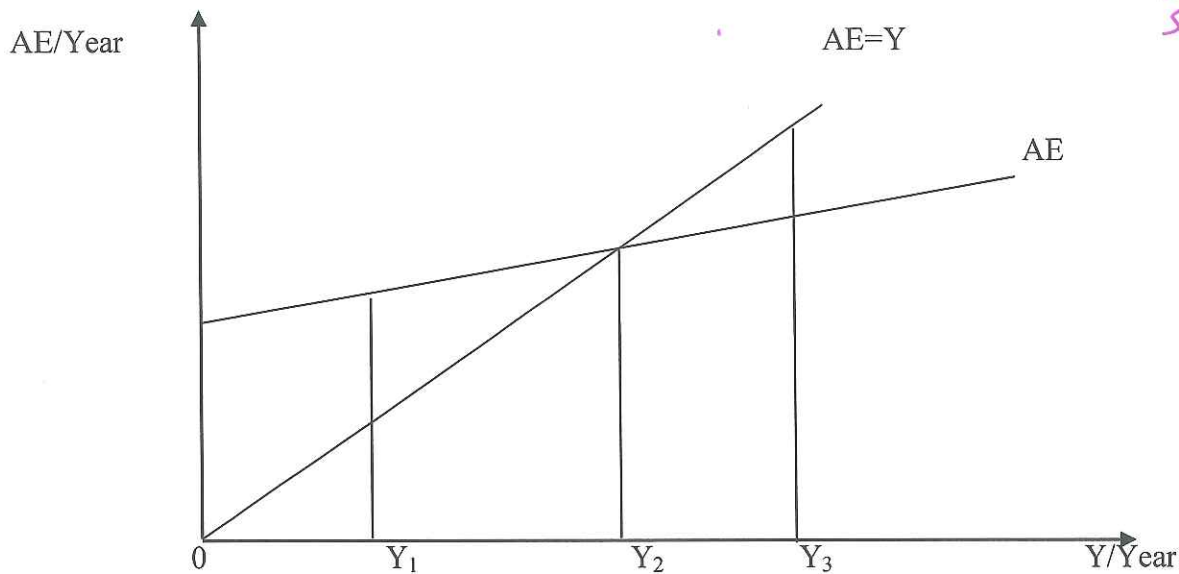
- a. If aggregate expenditure is too high at the full employment GDP, equilibrium GDP will be lower than full employment GDP.
- b. If aggregate expenditure is too high at the full employment GDP, equilibrium GDP will be higher than full employment GDP.
- c. Full employment GDP is always higher than equilibrium GDP.
- d. Full employment GDP is always equal to equilibrium GDP.



48. Which of the following statements is true?

- a. Prices in the classical model do not vary since the economy is always at full employment. *Fully flexible*
- b. Prices in the simple Keynesian model act as a signal to producers to insure that production tends toward the full employment level of output. *No prices are assumed constant*
- c. An increase in labor productivity implies a higher standard of living. *Not necessarily -> have less labor prod ↑ but living std. ↓*
- d. In the short run, there is no guarantee that actual and potential GDP will be equal.

Use the following graph to answer the next question



49. At Y_1

- a. inventories are decreasing and producers respond by raising prices for the product. *prices are constant in Keynesian Model*
- b. inventories are staying constant as producers increase their production to meet the demand for their product.
- c. inventories are decreasing and producers respond by increasing their production. ✓
- d. total spending exceeds total production implying that this economy is in an economic boom. *Don't know where Y_{fe} is*

50. According to the Classical Model, which of the following will most likely contribute to long-run growth?

- a. An increase in payments to the unemployed. *X Less labor working*
- b. Increased restrictions on immigration. *X Smaller pool of labor*
- c. Improved birth control methods. *X Fewer future workers*
- d. A reduction in the capital gains tax.

↳ Incentive to invest more

51. Answer this question according to the Classical Model. The US runs a trade deficit with China. Holding everything else constant, if the US narrows this gap by increasing exports, what will happen to the level of investment in the United States?

- a. Investment in the U.S. will increase relative to its initial level.
- b. Investment in the U.S. will decrease relative to its initial level.
- c. Investment in the U.S. could either increase or decrease relative to its initial level.
- d. There will be no effect on investment in the U.S.

*→ this causes interest rate to ↑
as $r \uparrow \Rightarrow I \downarrow$*

52. Which statement about economic fluctuations is true?

- a. In a recession, the unemployment rate is relatively low. *X relatively high*
- b. Output during a boom is greater than the level of potential output. *$Y_e > Y_{pe}$ ✓*
- c. According to the Keynesian model, government policy is ineffective. *X Govt policy effective*
- d. The Classical model is adequate to analyze economic fluctuations. *X LR Model - can't analyze business cycle fluctuations*

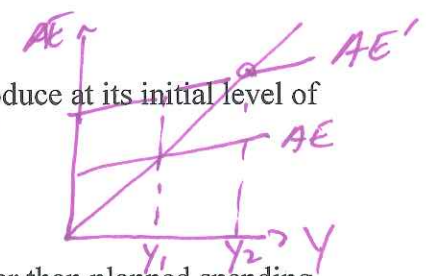
53. Holding everything else constant, an increase in government spending on transfer payments has what effect on the demand for private loans?

- a. The quantity of loanable funds demanded decreases due to the higher interest rate. ✓
- b. The quantity of loanable funds demanded decreases because the government is giving people more money. *X*
- c. The quantity of loanable funds demanded increases because of the lower interest rate. *X*
- d. There will be no change in the demand for loanable funds nor the quantity of loanable funds demanded. *X*

TR ↑ ⇒ (T - TR) ↓ ⇒ SG ↓ ⇒ r ↑ ⇒ Q_{LF} demanded ↓

54. Consider an economy using a Keynesian model. The economy is initially in equilibrium at Y_1 . Holding everything else constant, if there is an increase in the level of autonomous consumption this will

- a. Cause the equilibrium level of real GDP to increase. ✓
- b. Cause inventories to decrease if the economy continues to produce at its initial level of output. ✓
- c. Cause output to be expanded via the multiplier process. ✓
- d. (a), (b) and (c) are all true statements.



55. Holding the price level constant, if output in an economy is greater than planned spending, which of the following is true?

- I) Inventories decrease
- II) Inventories increase ✓
- III) Output decreases ✓
- IV) Output increases

- a. I and IV.
- b. I and III.
- c. II and III.
- d. II and IV.