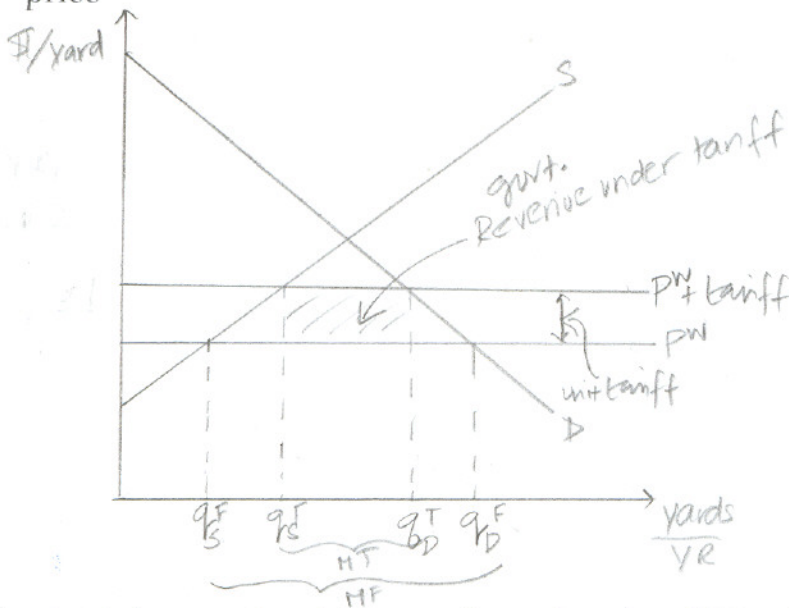


1) Trade (20 points)

U.S. textile manufacturers are lobbying for a textile tariff.

a) (15 points) Using a graph, show the U.S. textile market equilibrium under free trade and under a tariff. Be sure to label the following in each case, as appropriate:

- i) quantity demanded by U.S. consumers and supplied by U.S. producers
- ii) imports
- iii) government revenue
- iv) price



$q_D^F = q_{ty} \text{ dem. under free trade}$
 $q_S^F = q_{ty} \text{ sup. under free trade}$
 $MT = q_D^F - q_S^F = \text{import under free trade}$
 $q_D^T = q_{ty} \text{ dem under tariff}$
 $q_S^T = q_{ty} \text{ sup. under tariff}$
 $MT = q_D^T - q_S^T = \text{import under tariff.}$
 $PW = \text{world price}$

b) (5 points) Assume for this part of question that China is the only source of imports and that there is no tariff.

- i) What would happen to the U.S. dollar price of imports (the domestic price under free trade) if the Chinese currency, the Yuan, appreciated, relative to the U.S. dollar? Explain.
- ii) Who would gain and who would lose in the U.S. textile market? Explain.

$e = \$/\text{Yuan}$ appreciate \Rightarrow more $\$/\text{Yuan}$

(i) $\Rightarrow P_{\text{yuan}}^{\text{textile}} \times \frac{\$}{\text{Yuan}}$ increases $\Rightarrow P^W$ increases

(ii) domestic producers gain, consumers lose with domestic price increase

2) Foreign Exchange Market (20 points)

For each scenario, use a **U.S. dollars S&D diagram** to show whether the exchange rate (foreign currency per U.S. dollar) appreciates or depreciates. Explain.

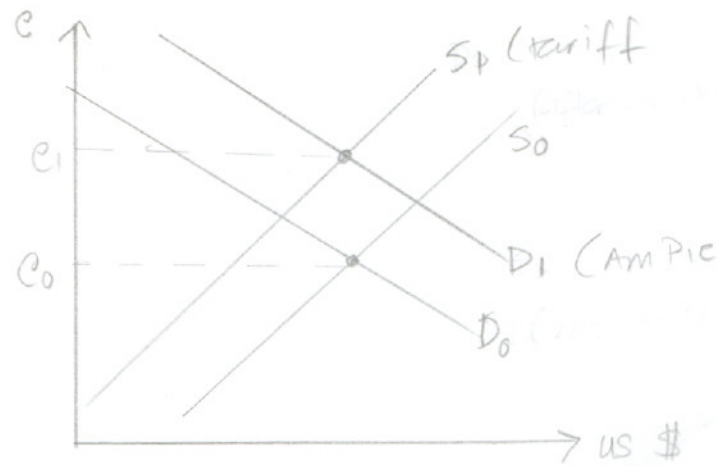
- a) (10 points) The U.S. adopts protectionist policies resulting in tariffs on many imported goods. At the same time, due to the global popularity of Hollywood's American Pie X movie, foreigners want to buy everything "Made in USA".

tariff \Rightarrow higher dom price
 \Rightarrow q_D^M falls \Rightarrow S US\$ shifts in

US goods popular \Rightarrow $q_D^{US\text{ goods}}$ inc \Rightarrow
 D US\$ shifts out

Effects on e re-enforced

e appreciates
 (US\$ stronger)



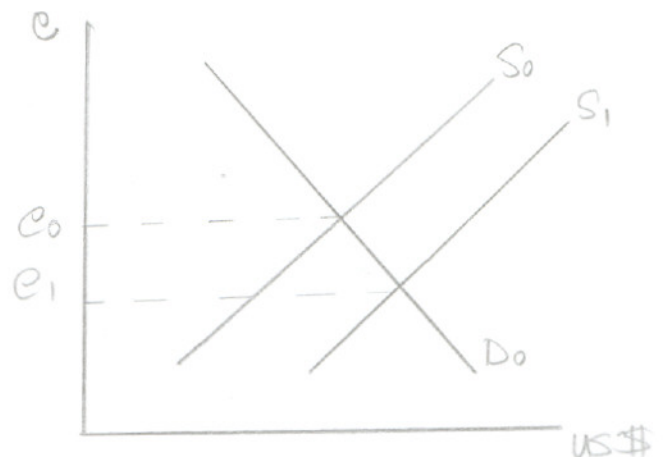
Correct S1 (1)
 Correct D1 (1) Correct e1 (2)

- b) (10 points) China's new political leaders have created a stable legal and economic environment and have just tightened monetary policy.

Tighter monetary policy \Rightarrow $r_{China} \uparrow$

\Rightarrow investment in china more attractive

\Rightarrow S US\$ \uparrow (want more Chinese currency to buy Chinese Yuan-denominated assets)



Correct S1 (2)

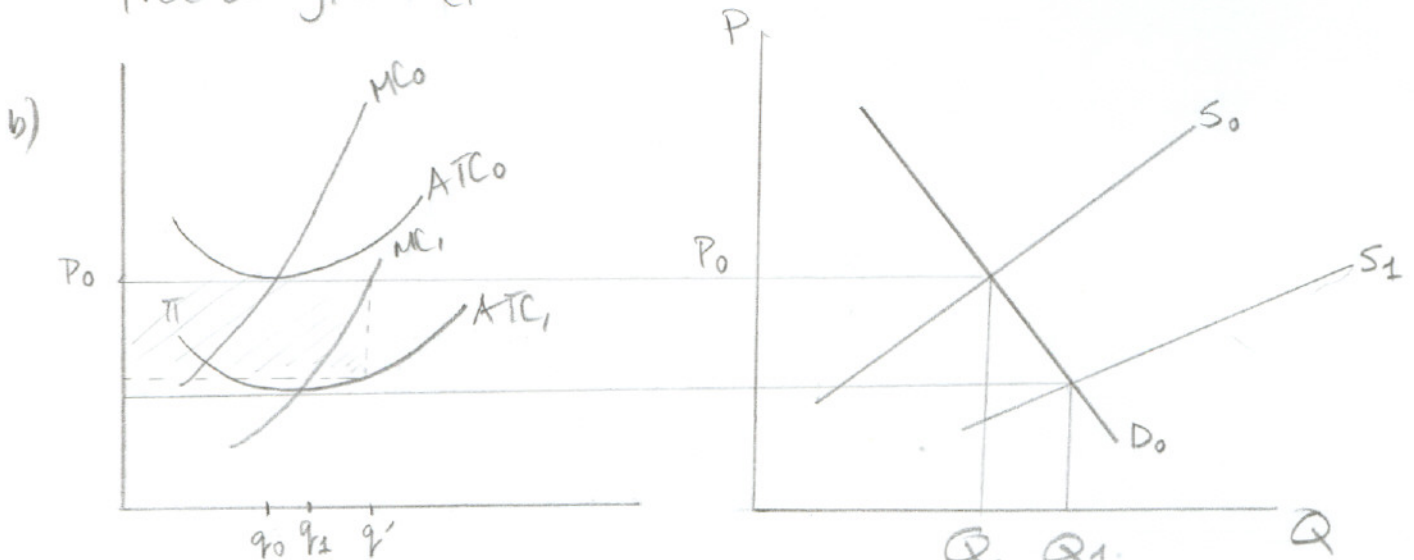
Correct e1 (2)

3) Perfect Competition (20 points)

Assume the fast food hamburger market is perfectly competitive. Suppose the fast food hamburger industry initially is in LR equilibrium. Then, suppose that one firm starts to use a new cost-reducing cooking oil.

- (4 points) What are the assumptions necessary for perfect competition to hold?
- (12 points) Starting from LR equilibrium, show what happens in the fast food hamburger industry. You must show the individual firm and industry equilibrium following the cost change. Discuss SR profit/loss, entry/exit and industry LR equilibrium. Show AVC, MC, ATC, P, Supply, Demand curves, as you see appropriate.
- (4 points) Why does a firm in a competitive industry have an incentive to pursue cost-cutting measures?

a) Many buyer/seller
homogeneous good
perfect information
free entry/exit (or text's
prod. resources mobile)



At initial LR equil, price = P_0 . First firm (2) to adopt earn profit > 0 (π). Other firms adopt and other firms enter until price reaches $P_1 = \min ATC_1$ and there are zero ec profit in LR.
✓ LR industry eqbm output = Q_1 , price = P_1

c) First adopters can earn positive ec. profit

4) Supply, Demand & Elasticity (20 points)

- a) (10 points) The seafood haven of Oceanville and scenic town of Sunville are year-round tourist towns connected by a popular train ride. The train is operated by the city of Sunville. Due to a budget crisis, Sunville city council has proposed a train fare increase.

Should Sunville residents, whose city is in need of funds for public services, support the proposal? Will Oceanville seafood merchants lobby hard (wine and dine city council members) to fight against the proposal?

Support proposal if train ride demand inelastic
since with inelastic demand, $P \uparrow \Rightarrow TR \uparrow$

Seafood and train ride are compliments.
Cross price elasticity is negative ($P_t \uparrow \Rightarrow Q_t \downarrow \Rightarrow Q_s \downarrow$)

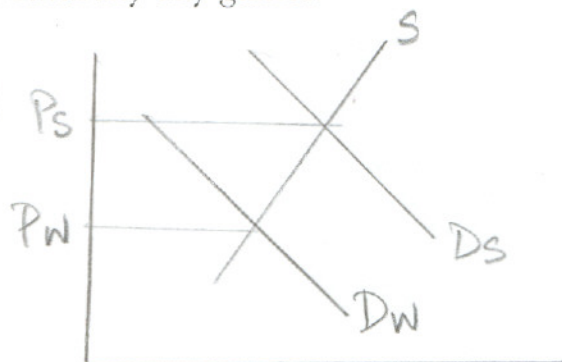
But there may be other activities in addition to seafood (cross price elastic small in magnitude)

If not and cross price elastic large magnitude, merchants will lobby hard

- b) Use Supply and Demand graphs to demonstrate each answer.

- i) (5 points) Why do the Oakland As have a special deal on tickets (cheap tickets) for Wednesday nights and not for Saturday day games?

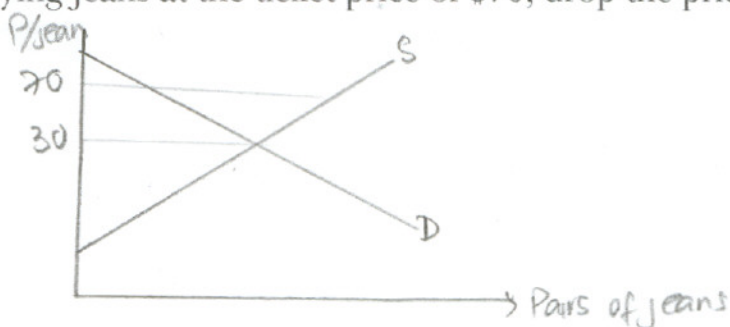
Wednesday: low demand
Saturday: high demand



(or draw S vertical to reflect capacity or upwards sloping up to capacity)

- ii) (5 points) During the back-to-school shopping season, why would retailers, seeing that too few customers are buying jeans at the ticket price of \$70, drop the price to \$30 per pair of jeans?

Excess supply at \$70
Few WTP \$70

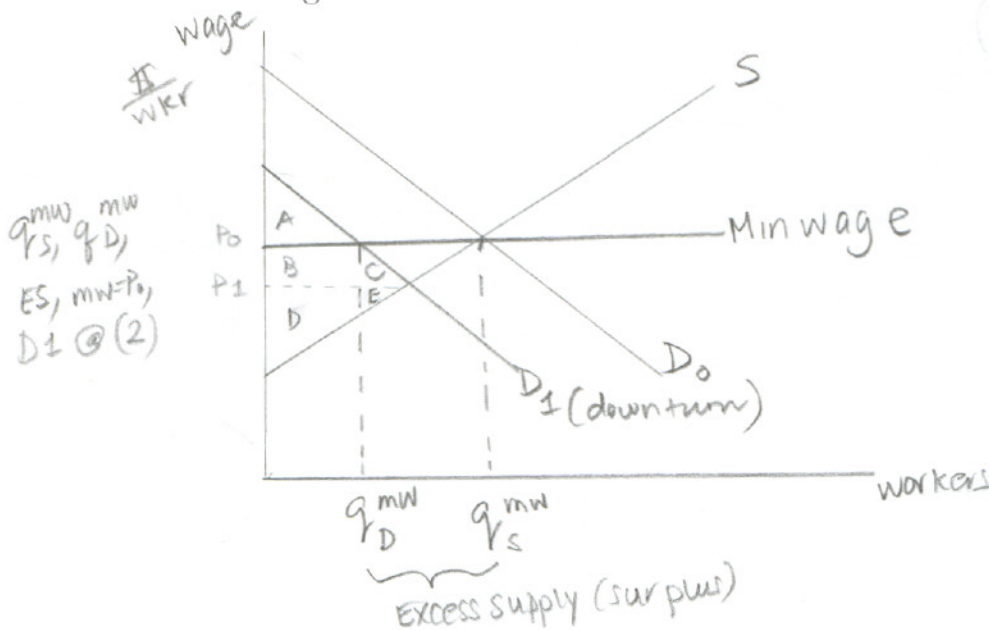


5) Welfare Analysis (20 points)

Suppose that the restaurant workers (waiters and waitresses etc) market is initially in equilibrium with no price ceilings or floors. Then, suppose an economic downturn causes a decrease in demand and policy makers institute a minimum wage at the pre-downturn free market equilibrium price.

- i) (10 points) Consider the effect of the minimum wage policy. Label the following:
 - a) Minimum wage level
 - b) Quantity demanded and supplied
 - c) Excess demand or supply that exists
 - d) Producer and consumer surplus and any dead weight loss under minimum wage

- ii) (10 points) Compare economic surplus post-downturn with and without the minimum wage. Are workers unambiguously better off with the minimum wage?



(5) Post Down Turn

	Free	Min Wage
CS	A+B+C	A+I
PS	D+E	B+D
	<u>A+B+C+D+E</u>	<u>A+B+D</u>

$\Delta \text{Surplus} = -C - E$
 $\text{DWL} = C + E$

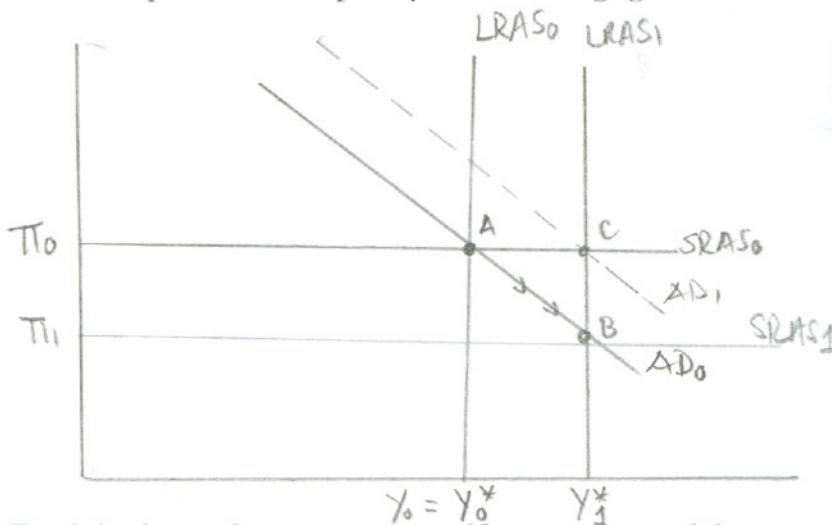
No. Not necessarily
 In graph $B > E$ so as a group workers with jobs better off. But answer depends on rel. size $B \lessgtr E$. Some workers don't get job at min wage and less than at P_1 .

6) Extension of BKM (20 points)

Suppose it is 2006 and the economy is in LR equilibrium. Then, the next wave of technological breakthroughs (nano-technology, plastics, computer networks, wireless devices, etc) dramatically increase productivity yet again.

a) In a graph, indicate the following:

- i) Initial LR equilibrium
- ii) Aggregate Supply Shock
- iii) SR equilibrium following the shock
- iv) Output gap and type of gap (if any)
- v) LR equilibrium if the economy self-corrects
- vi) LR equilibrium if policy makers engage in stabilization policy



- A: initial LReqbm
 LRAS1: shock to pot output
 A: SR eqbm after shock
 Output gap = $Y_1^* - Y_0 > 0$ rec.
 B: LR eqbm w/ self correction
 new inflation level π_1
 C: LR eqbm w/ fiscal/mon
 stabilization (AD_1)
 $= \pi_0 = LRAS_1$

b) Explain how the economy self-corrects, and how each of fiscal and monetary policy stabilization affects components of spending to help the economy achieve LR equilibrium.

Self Correction: Firms adjust rate of price inc. Drops to π_1
 $\pi_1 = AD_0 = LRAS_1$ at LReqbm

Stabilization: $\uparrow G, \downarrow T$ ($\uparrow Y - T, \uparrow C$) increases spending at each π
 Shift down of Fed Reach $\uparrow r$, lower r at every π , more spending at every π .

7) Define and Explain (10 points)

Define the term in bold. Give an argument for whether the statement is either true or false. 2 points for definition. 3 points for explanation.

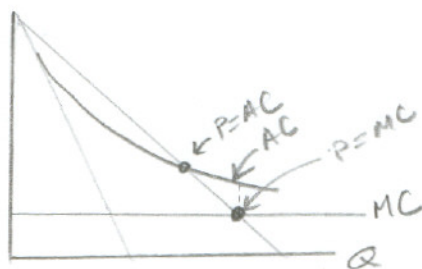
- a) (5 points) If conditions of the **coase theorem** hold, then a tax or other government intervention is not necessary to achieve the social optimum under a negative externality.

Book definition OK. OR
CT: If property rights well defined and transaction cost zero, in presence of neg. externality, parties can privately bargain to reach social optimum.
True that govt intervention not necessary since conditions of Coase theorem permit private negotiation and bribe/compensation to achieve outcome which maximizes (social) ec surplus

- b) (5 points) When an industry is a **natural monopoly**, it is better for one firm to operate since unit costs are lower than if many firms operate. But, if the firm is regulated to provide more than the monopoly level of output, government must incur costs of a subsidy.

NM: Monopoly which arises due to ec of scale.

True that since AC everywhere decreasing, one firm producing a lot does so at lower unit cost (here total cost) than if many firms produced that same amount, each at high unit cost. Not true that govt has to incur subsidy cost. If regulation sets $P=AC$, no subsidy. If regulation sets $P=MC$, $MC < AC$ and difference $AC - P$ must be made up with subsidy. P



8) News Analysis (10 points)

Read the following excerpt from Pear, R. "Federal Report Says U.S. Should Subsidize Vaccinations," *New York Times*, August 4, 2003 and answer the question that follows.

The federal government should ... subsidize vaccines for uninsured people, an expert panel from the the National Academy of Sciences said today.

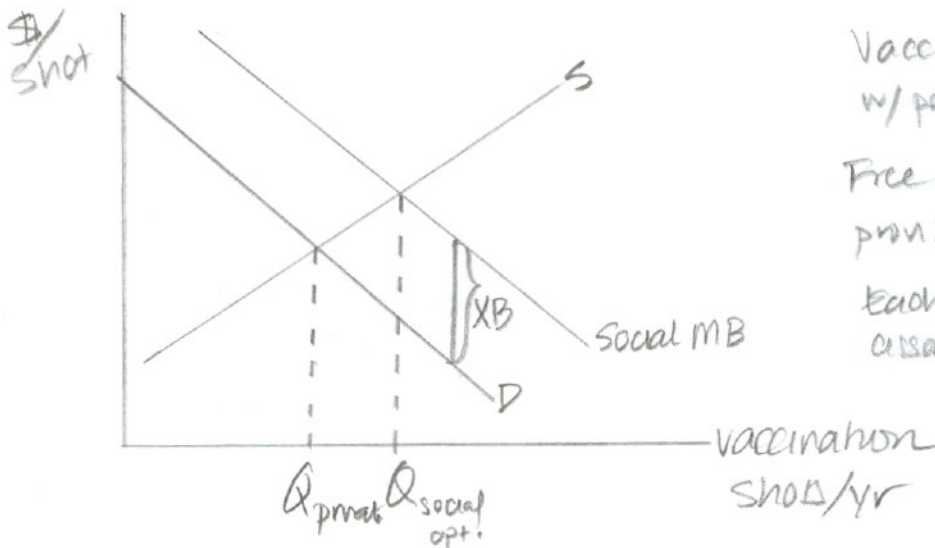
A major purpose of the recommendations is to guarantee that everyone has access to the growing number of new, expensive but useful vaccine products.

"Immunization is too important to the nation for anyone to be left uncovered," said Frank A. Sloan, a health economist at Duke University, who was chairman of the 11-member panel. The mandate would provide coverage for all insured children, for adults age 65 and older, and for certain people 18 to 64 who have a high risk of developing diseases that can be prevented by vaccines.

The subsidies would reflect "the societal benefits" of each vaccine, including its ability to prolong life, to improve the quality of life, to avert future medical costs and to increase the productivity of workers by keeping them healthy ... [and protect members of society] from contagious diseases," the report said.

The recommendations would increase federal spending, but the panel did not estimate the cost to the federal Treasury.

Give a succinct economic argument either for or against a vaccination subsidy policy. Use graphs, equations, and/or words, as appropriate.



Vaccination are assoc w/ pos. externality.

Free market gets under provision $Q_{private} < Q_{soc opt}$

Each unit vaccination assoc. w/ extra benefit XB

$Soc MB > Private MB (D_{curr})$

Subsidy = XB would get soc. opt.

Govt incur cost $XB \times Q_{soc opt}$

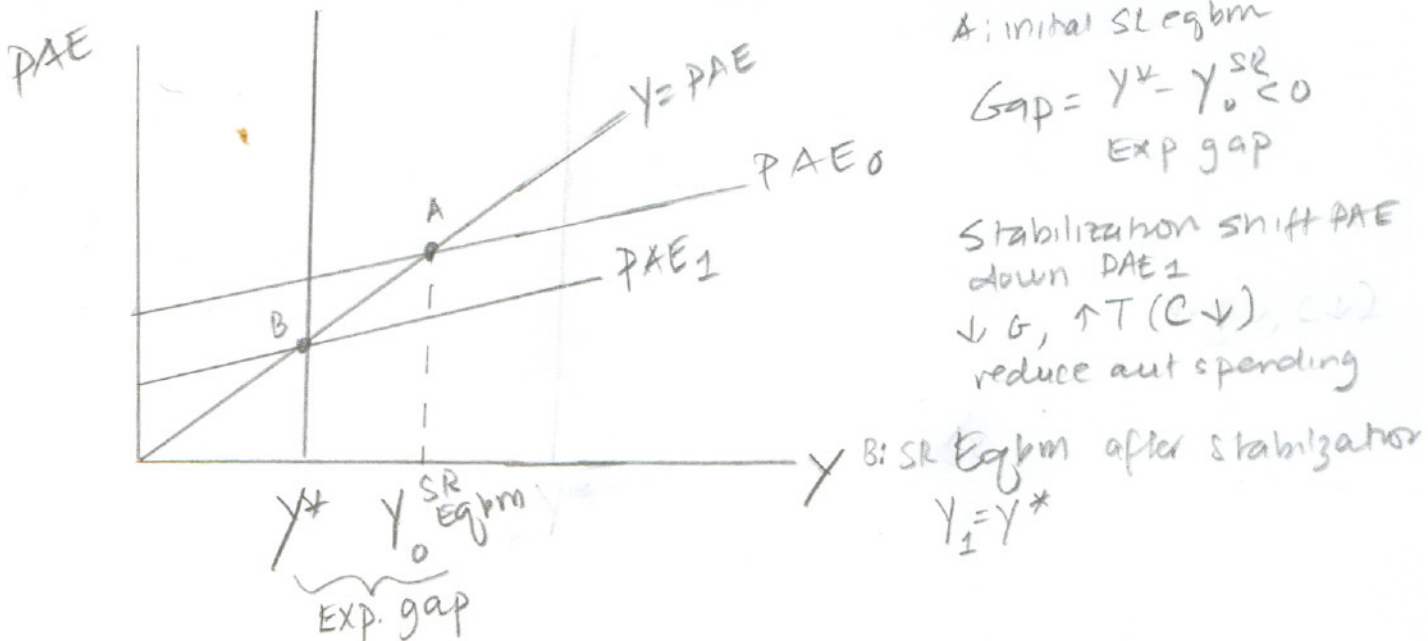
9) Keynesian Cross (10 points)

Suppose the economy has an expansionary output gap.

a) (7 points) Using a Keynesian cross diagram, explain how fiscal policy can close the gap. Be sure to include the following in your clearly labeled graph:

- i) Initial SR equilibrium output
- ii) Potential output
- iii) Output gap
- iv) Effect of stabilization policy (draw appropriate curves and label)
- v) Equilibrium output after stabilization

Briefly explain how components of spending might be affected by the policy.



b) (3 points) Suppose potential output equals 50, initial SR equilibrium output equals 100 and the multiplier is 5. By how much does government spending G have to change to close the gap?

$$Gap = Y^* - Y_0 = 50 - 100 = -50$$

$$\text{Dec output by } 50 \quad -50 = \text{mult} \times \Delta PAE = 5 \times (-10)$$

Drop G by 10.

10) Monetary Policy (Open Economy) (10 points)

Consider how the central bank (the FED, in the U.S.) uses monetary policy (open market operations) to close a recessionary gap in an **open** economy (with a flexible exchange rate regime).

- a) (5 points) Explain how the change in interest rate affects the exchange rate and each component of aggregate expenditure to achieve the stabilization policy goal.

Open market purchase. Buy bonds. $P_{bonds} \uparrow, r \downarrow$

$r \downarrow \Rightarrow C \uparrow$

$r \downarrow \Rightarrow I \uparrow$

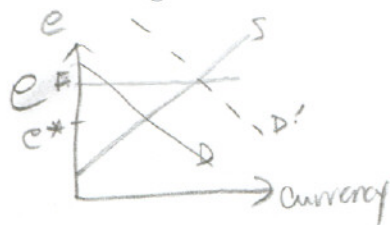
$r \downarrow \Rightarrow$ return US asset $\downarrow \Rightarrow D$ US \$ $\downarrow \Rightarrow e \downarrow$



$e \downarrow \Rightarrow X \uparrow, M \downarrow \Rightarrow NX \uparrow$

(r - e - NX effect reinforces C, I effect. Spending inc to close gap)

- b) (5 points) If the economy instead had a fixed exchange rate regime, and the exchange rate was over-valued, how would use of monetary policy to support the exchange rate conflict with the goal of stabilization for a recessionary gap?



Overvalued $\Rightarrow e^F > e^*$

To support currency need to shift D to D'

Tighten monetary policy.
Inc r , domestic-currency denominated asset attracts D currency \uparrow .

But tight mon. policy not correct remedy for rec. gap!