

## Exercise 7

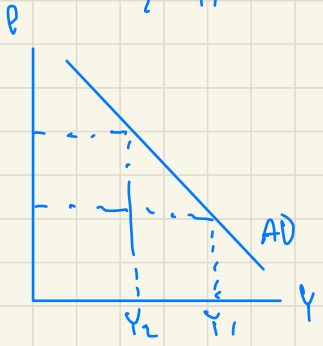
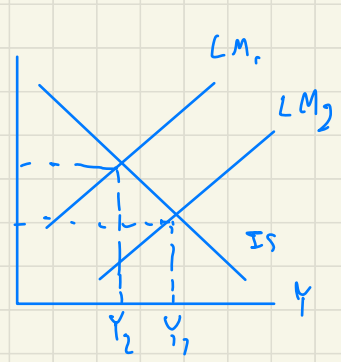
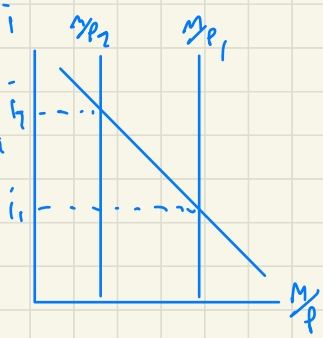
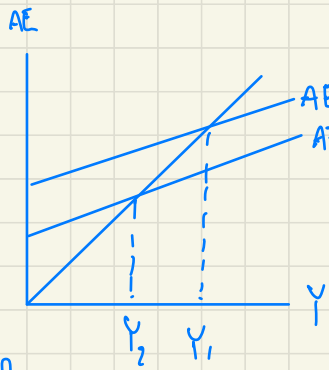
### AD-AS Model

1. Explain why AD is downward-sloping (that is, how AD is derived), using the money market diagram and the IS-LM.
2. What is Sticky Wage Theory? Explain why SRAS is upward-sloping (that is, how SRAS is derived), using the sticky wage theory, labor demand diagram, and production function.
3. Explain why LRAS is vertical.
4. **Ceteris Paribus** (other things equal), how will each variable/event affect each curve – shift (to which direction?) or movement?

Variable/Event	AD	SRAS	LRAS
P↑			
G↓			
T↓			
Autonomous C↑			
Autonomous I↓			
M↓			
i↑			
Temporary epidemic (assuming AD unchanged)	No effect		
Permanent increase in population growth rate (assuming AD unchanged)	No effect		
W↑			
Bad seasonal weather			
Permanent loss in agricultural land due to climate change			
Discovery of new technology			
Short-term worker training			
Permanent education reform			

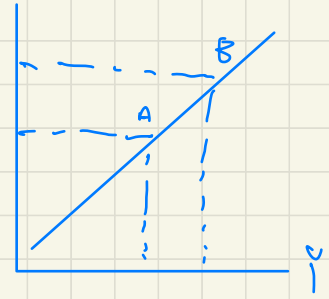
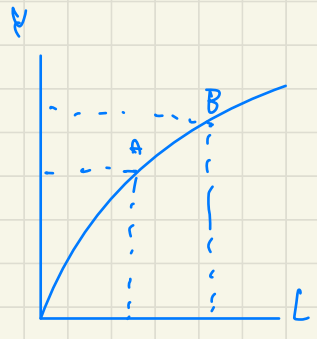
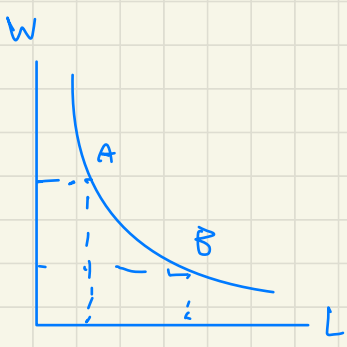
5. Suppose the economy faces a negative AD shock (e.g. loss in consumers' confidence).
  - What output gap do we have? Draw the AD-AS diagram to show the output gap at the new short-run equilibrium.

1



Downward sloping indicate a negative relationship between the aggregate price level and the quantity of aggregate output demand.

2



SRAS is upward sloping because nominal wage is sticky. when  $P \uparrow$ , real wage  $\downarrow$  firm will be better off, they need to pay less wage worker, firms want to hire more.

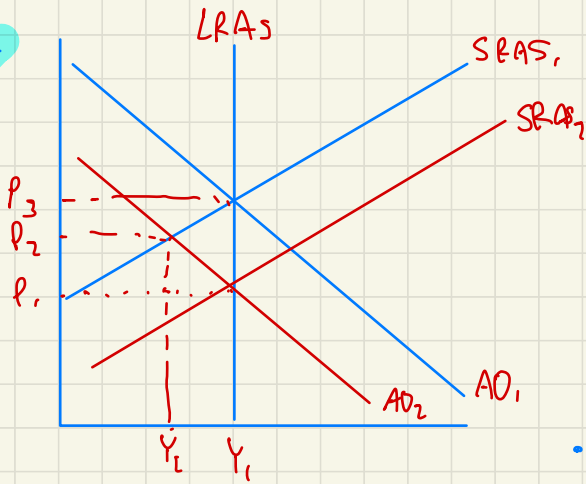
3 It is vertical because output is fixed and price level does not effect output.

W $\uparrow$  cause  $\downarrow$ , this cause real wage don't change they would still hire same amount of people, where it's full employment.

4

Variable/Event	AD	SRAS	LRAS
P $\uparrow$	movement	movement	movement
G $\downarrow$	shift left		
T $\downarrow$	shift right		
Autonomous C $\uparrow$	shift right		
Autonomous I $\downarrow$	shift left		
M $\downarrow$	shift left		
i $\uparrow$	shift left		
Temporary epidemic (assuming AD unchanged)	No effect	shift left	-
Permanent increase in population growth rate (assuming AD unchanged)	No effect	shift right	shift right
W $\uparrow$	-	shift left	-
Bad seasonal weather	-	shift left	-
Permanent loss in agricultural land due to climate change	-	shift left	shift left
Discovery of new technology	-	shift right	shift right
Short-term worker training	-	shift right	-
Permanent education reform	-	-	shift right

5



recessionary Gap

because we loss in consumers' confidence

$\therefore Y$  is less than  $Y_2$

- Expansionary fiscal policy

$G \uparrow$  or  $T \downarrow$

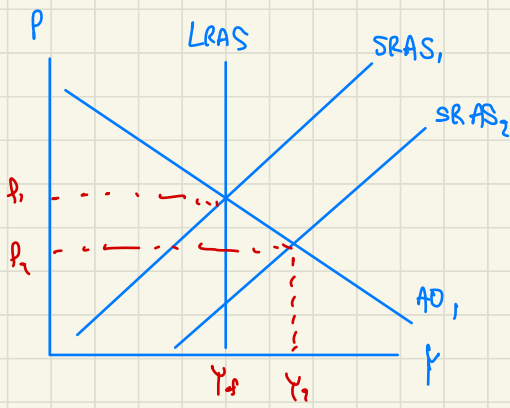
- Expansionary monetary policy

$M \uparrow$  or  $i \downarrow$

- 1 The policy that government using  $G, T$  and  $M \rightarrow$  it's partially controlled by gov
- 2 As recessionary gap appeared, we need to correct output gap by using "expansionary fiscal policy" to shift AD curve back to the original position. Plus gov't can use the supply-side policy.

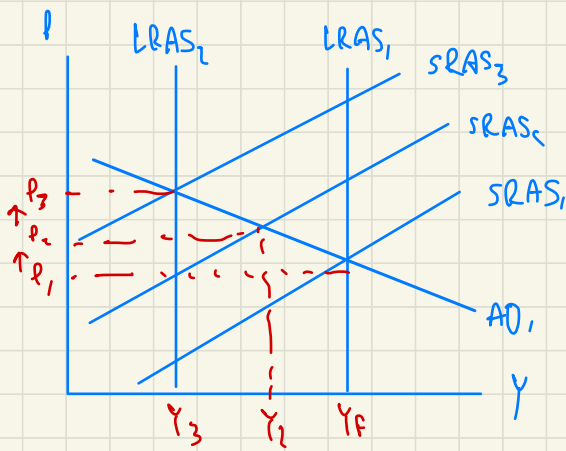
- If the government wants to correct such output gap, what policies can it implement? Give examples.
  - If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.
6. Suppose the economy faces a temporary, positive AS shock.
- Give one example of a temporary, positive AS shock.
  - If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.
7. Suppose the economy faces a permanent, negative AS shock.
- Give one example of a permanent, negative AS shock.
  - If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.
8. In macroeconomics, **Money Neutrality** is the idea that a change in the stock of money ( $M$ ) does not affect real variables, like employment and real GDP. Is this true in the AD-AS model?  
(**Hint:** When the central bank changes money supply,  $M$ , does this affect output in the long run, i.e. full-employment  $Y$ ?)
9. Based on Question 8 above, what can the government do to change output in the long run?  
(**Hint:** Monetary and Fiscal Policies are demand-side policies, but do we have other alternatives?)
10. Economists usually have macroeconomic goals of low employment and low inflation. It is also believed that economists face the trade-off between these goals, especially in short run. Use relevant diagrams to explain the trade-off. Why does the trade-off no longer exist in long run?
11. \*\*\* The IS-LM is for short-run analysis, while the AD-AS is for long-run analysis. Now, let's link them together. Suppose the government implements expansionary fiscal policy. Use the IS-LM and AD-AS models to show the policy effect in both short run and long run.  
(**Hint:** In long run, what happens to  $P$  in the AD-AS model? How will this change in  $P$  affect the IS-LM model?)

6



Good weather in the country, a decrease of price of input.

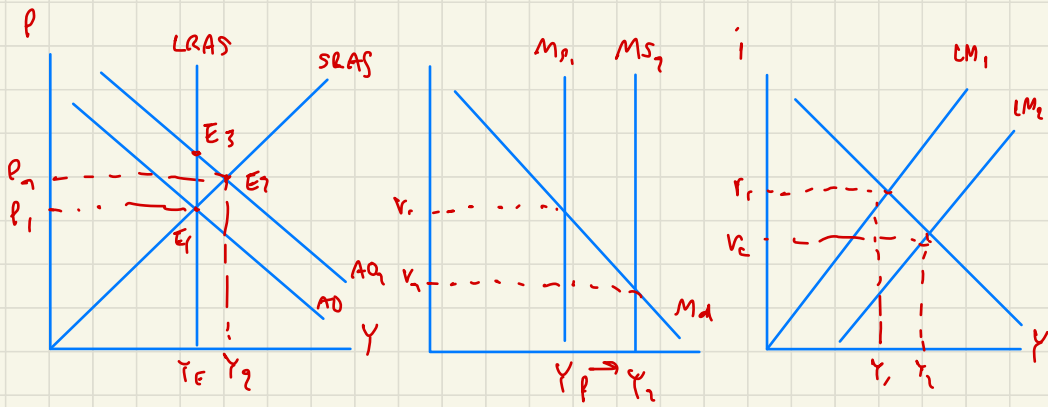
- 1 first, a temporary AS shock causing AS curve shift downward from  $SRAS_1$  to  $SRAS_2$ .
- 2 Due to the shock, it induces the price level  $P$  to decline from  $P_1$  to  $P_2$
- 3 However, the output " $Y$ " is rising when  $P$  is decreased.
- 4 All in all, a short term of positive shock. Therefore, a short time period will disappear then later the economy will return back to the equilibrium.



- Permanent loss in population  
growth rate, Discovery of very  
large resources

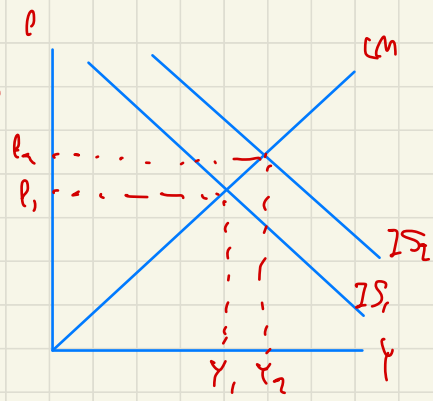
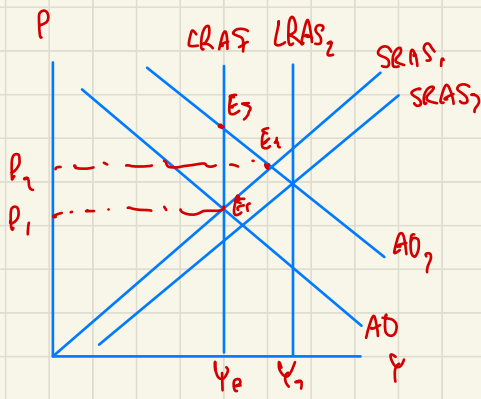
- 1 Permanent negative AS shock induced shifting AS curve leftward and SRAS curve upward respectively. Right now, the economy returns to LR equilibrium with the permanently higher  $\pi$ .
  - 2 A permanent negative AS shock will making the economy to stagflation since the price level increase significantly.
- Due to the shift together LRAS and SRAS curve.

8



True,  $M_s$  increase causing interest  $\downarrow$  invest  $\uparrow$   
 $P \uparrow$  when  $Y$  increase price level increase in SR  
 but in long run SRAS will move to the  $\epsilon$   
 As a result, there are no change in  $Y$   
 full employment.

9



Government can use fiscal policy in order to a long run  $F \uparrow$   $AE \uparrow$   $IS$  will shift right  $P \uparrow$   $Y \uparrow$   $r \uparrow$

To increase a long run gov. have to support the economy by develop education improve employee.

