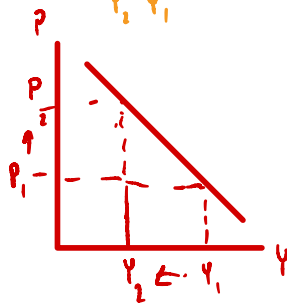
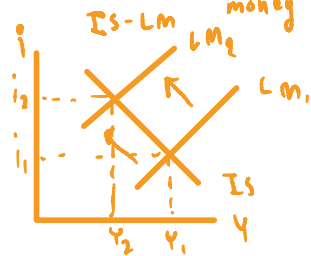
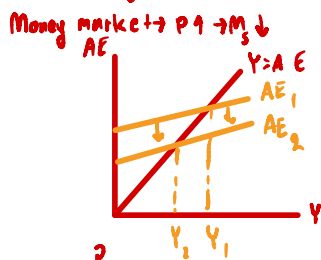
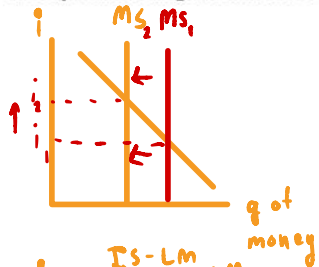


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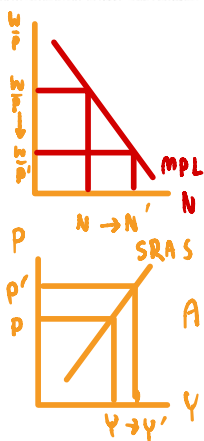
1. Explain why AD is downward-sloping (that is, how AD is derived), using the money market diagram and the IS-LM.



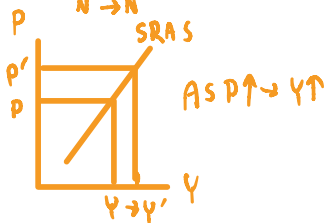
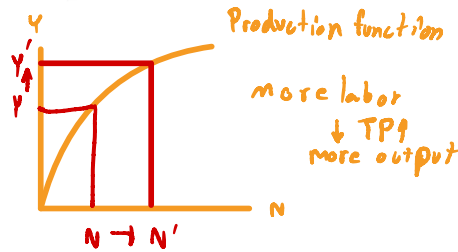
AS $P \uparrow$
 mm: $P \uparrow \rightarrow M_s \downarrow \rightarrow i \uparrow$
 GM: $i \uparrow \rightarrow I \downarrow \rightarrow Y \downarrow$
 Due to the $P \uparrow \rightarrow Y \downarrow$

LM: shift left
 IS: movement

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.

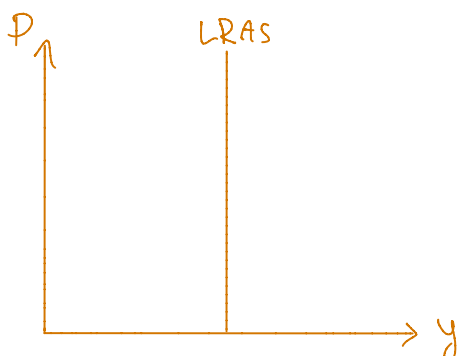


$\frac{w}{P} = \text{real wage}$
 labor demand
 $P \downarrow \rightarrow \frac{w}{P} \downarrow \rightarrow \text{real wage} \downarrow$
 \downarrow
 hire more labor



From the diagram, when $P \uparrow$ the real wage \downarrow due to $\frac{w}{P} \downarrow$ which is the labor contract that fix wage mean the real wage that firm pay for labor is decrease, so firm hire more La. When firm hire more L, the total product is \uparrow that mean $Y \uparrow$. The relationship is $P \uparrow \rightarrow \frac{w}{P} \downarrow \rightarrow \text{real wage} \downarrow \rightarrow N \uparrow \rightarrow TP \uparrow \rightarrow Y \uparrow$ positive relationship.

3. Explain why LRAS is vertical.



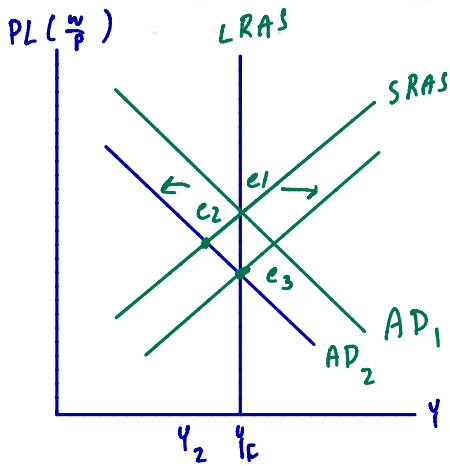
In long-run wage is flexible that mean it can adjust and not sticky when $P \uparrow \rightarrow w \uparrow$ follow so real wage is unchange when real wage is unchange \rightarrow output still same that mean Y is unchange. In long run: As $P \uparrow \rightarrow Y$ stay the same due to total product, real wage is unchange.

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
$P \uparrow$	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 right	-
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. 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. *Recessional gap*

- If the government wants to correct such output gap, what policies can it implement? Give examples. *both fiscal: increase G, decrease T*
- If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium. *monetary: increase M*



Economy started at LRE e_1

Suppose a negative AD shock that make AD shift left + economy moves to SRE e_2

At e_2 nominal wage is sticky but price level decrease.

Thus, real wage increases. It costs more to hire labour, so firms will hire less labour and output will fall to Y_2

In LR wages are flexible, so firms will ask labour

to lower their nominal wages

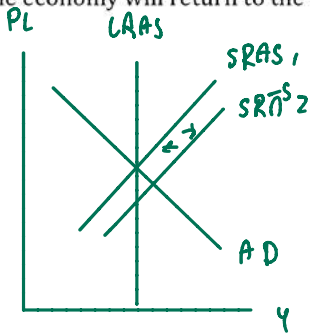
Lower nominal wages means lower cost of production for firms

Thus firm produces more which make SRAS shift right

Now the economy returns to LRE at e_3

6. Suppose the economy faces a temporary, positive AS shock.

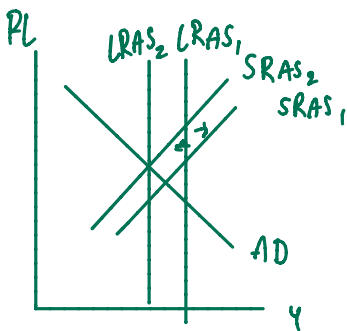
- Give one example of a temporary, positive AS shock.
- If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.



Temporary positive AD shock
 shift SRAS to the right
 Afterward the shock disappears
 and the SRAS move back to
 its original position.

7. Suppose the economy faces a permanent, negative AS shock.

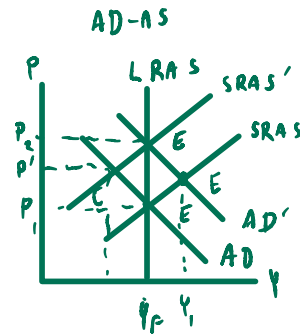
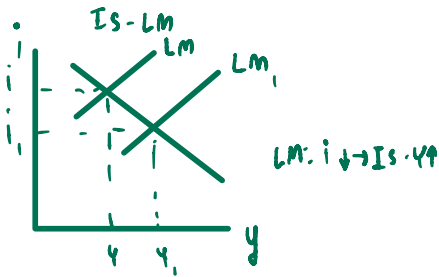
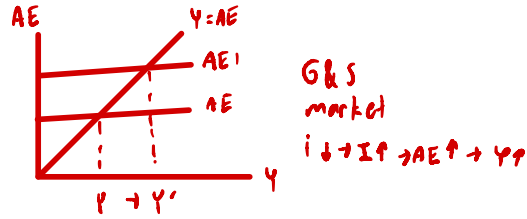
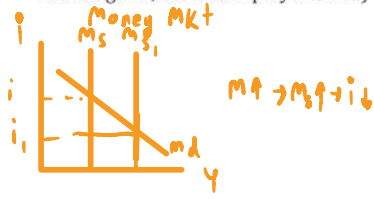
- Give one example of a permanent, negative AS shock. *decrease in birthrate, increasing in mortality rate*
- If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.



when the economy faces a permanent negative AS shock.
 It will shift LRAS leftward and shift SRAS upward.
 So the economy return to LRE e_2 with output
 permanently lower & inflation permanently higher.

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?

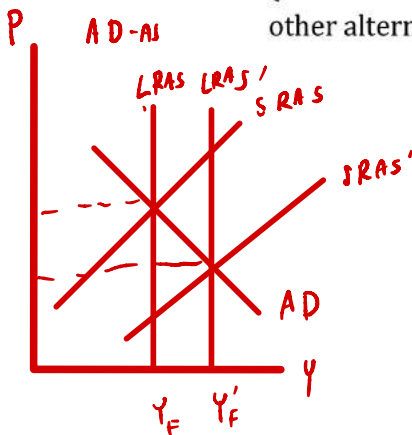
(Hint: When the central bank changes money supply, M, does this affect output in the long run, i.e. full-employment Y_F ?)



- MM, $M↑$ that make $M_s↑$ follow then the interest rate decrease G_m , when $i↓$ that make $I↑$ so $AE↑$ finally output increase ($Y↑$) IS-LM, Due to $i↓$ from MM that make LM shift right then $Y↑$
- Due to LM shift right but P still constant, so AD shift right SRE at E' In short run wage is sticky that mean firm pay wage at \bar{w} but $P↑$ to P' that mean real wage fall firm hire more labor from Y_F to Y' At E' output is over Y_F ($Y' > Y_F$) that inflation gap occurred at E'
- In long run wage is flexible that make firm need to pay higher than SR when $w↑$ the production cost is higher so firm lay off some labor and output are slowly decrease from Y' to Y_F inflation gap when labor decrease mean SRAS slowly shift left E_2 that $Y=Y_F$ and $P↑$ to P_2

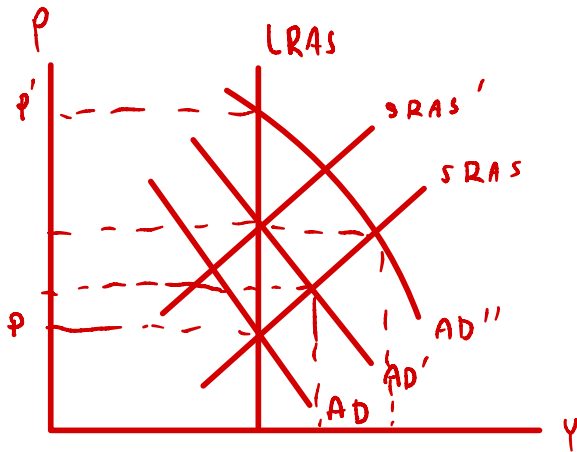
9. Based on Question 8 above, what can the government do to change output in the long run?

(Hint: Monetary and Fiscal Policies are demand-side policies, but do we have other alternatives?)



In a positive shock, both of LRAS and SRAS shift right because of discovering very large resources that is permanent AS shock. Even SRAS is shifted, it remains in short run equilibrium. The cost of living is high, so workers ask for more income. The cost of production will increase causes the decreasing (output) The SRAS will shift again to catch a new general equilibrium

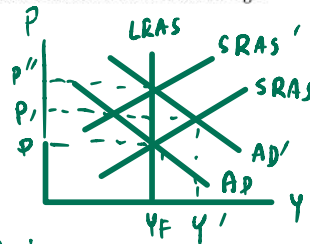
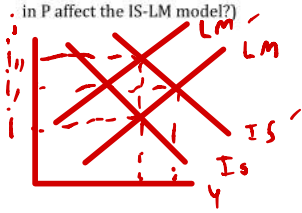
10. Economists usually have macroeconomic goals of low unemployment and low inflation. It is also believed that economists face the trade-off between these goals, especially in short run. Use relevant diagrams to explain the trade-off. Why does the trade-off no longer exist in long run?



To reducing unemployment rate, AD curve will shift right that has increasing price level or cost of living and high inflationary gap. From increasing in output, it means LM curve shift right ($LM \rightarrow LM'$) and there's a decreasing in interest rate. MS will shift right ($M_s \rightarrow M_s'$) that was low interest rate and high quantity of money

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?)



Let say government increase spending (expansionary fiscal policy)

that shift IS curve due to $G \uparrow$ also AD shift right due to $G \uparrow$

In short-run, At $SR\bar{E}$, Price level are increase due to fix wage firm can produce more with the lower cost of production that make $Y \uparrow$. At \bar{E}_2 , interest rate is higher that reduce investment a bit so, Y at Y' but for the over view output is increase

In long term when $P \uparrow$ that affected to M which $\frac{M}{P}$

So LM shift left that cause higher interest rate and out put decrease

Also long run wage is flexible, as $P \uparrow$ wage also increase that cause production cost increase too which make

SRAS shift left when SRAS shift left to $LR\bar{E}$, output decrease to Y_F but P is increase