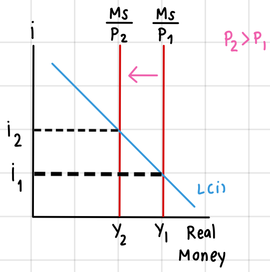
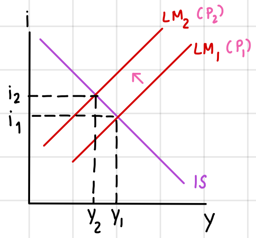
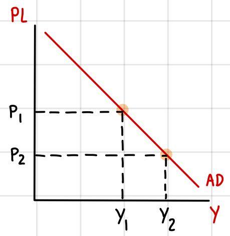
1. Explain why AD is downward-sloping (that is, how AD is derived), using the money market diagram and the IS-LM.



MONEY MARKET



IS - LM

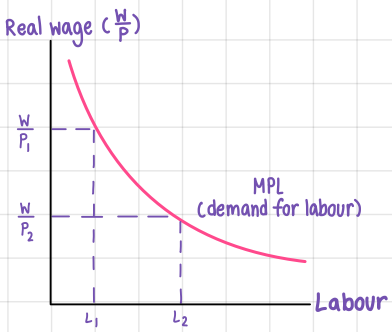


AD Curve

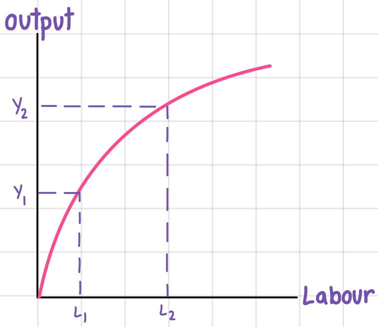
Deriving AD curve from LM

1) An increase in P will reduce real money supply
2) Small M_s = ↑ interest rate
3) high i → discourages Investment (I)
4) decrease in I → lower output (Y)
5) Price Level ↑ Output ↓

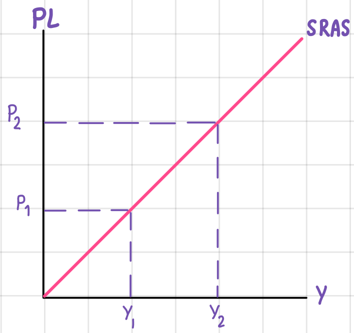
2. What is Sticky Wage Theory? Explain why SRAS is upward-sloping (that is, how SRAS is derived), using the sticky wage theory, labor demand diagram, and production function.



Labour demand



Production function



When price increase, real wage become cheaper. Firms demand more labour.
Increase in Labour leads to an increase in production → increase in output.

Sticky wage theory

In short run : nominal wage is sticky from labour contract
employment depends on demand of labour (Positive relationship)

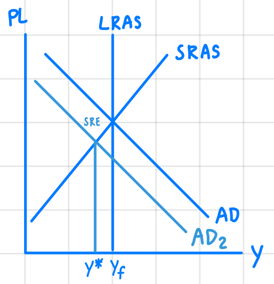
3. Explain why LRAS is vertical.

LRAS : No relationship between PL and Y
↳ Output is at full-employment level
↳ Price and wage can be change

curve – shift (to which direction?) or movement?

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



$Y_f > y^*$

Recessionary gap

   - If the government wants to correct such output gap, what policies can it implement? Give examples.

Implementing expansionary fiscal policy (↑G , ↓T)

and monetary policy

   - If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.

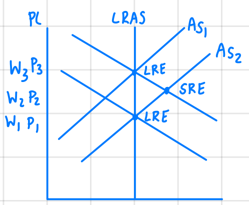
Firm will hire less labour = ↓ output

firm negotiate to have large W

more labour = more output

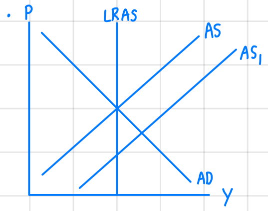
SRAS shift to the right

New LRE



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

• Good weather to grow crops



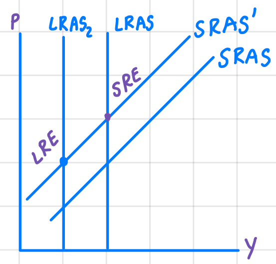
SRAS shift to the rightward

due to higher output, but it is temporary effect.

it will adjust back to normal

7. Suppose the economy faces a <u>permanent, negative</u> AS shock.
   - Give one example of a permanent, negative AS shock.
   - If there is no government intervention, explain <u>with the AD-AS diagram</u> how the economy will return to the long-run equilibrium.

Permanent ↑ death rate



SRAS shift to the left.

this is a long run problem

the LRAS curve then shift to the left too

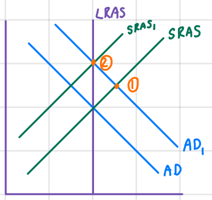
8. In macroeconomics, **Money Neutrality** is the idea that a change in the stock of money (M) does not affect real variables, like employment and real GDP. Is this true in the AD-AS model?
   (**Hint**: When the central bank changes money supply, M, does this affect output in the long run, i.e. full-employment Y?)

Yes, in long run the Y returns to the equilibrium due to flexibility.

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?)

Supply side policies - technology, infrastructure and education

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?



flexible price & wage

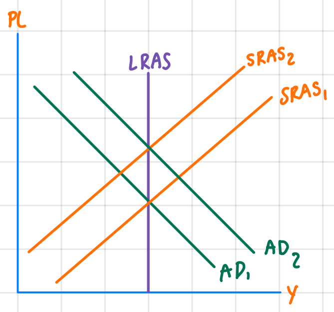
when AD ↑ it will meet SRAS at ①

theres low unemployment but high price → high inflation

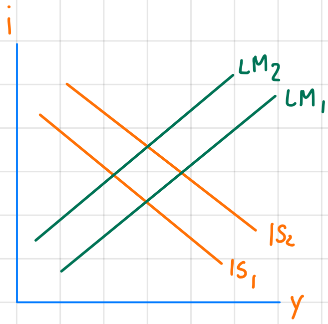
In SR wage is sticky as time pass labour will ask for more wage

firms↓ production output ↓ SRAS ↓ shift to ②. which is LRE (no inflation + trade off)

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?)



AD-AS



IS-LM

Expansionary fiscal policy

Both IS and AD shift to the right

with higher cost of living, W will ↑, Y↓, SRAS shift to the left

LRE at higher price. This affect money market, MS curve shift to the left

make LM shift to the left