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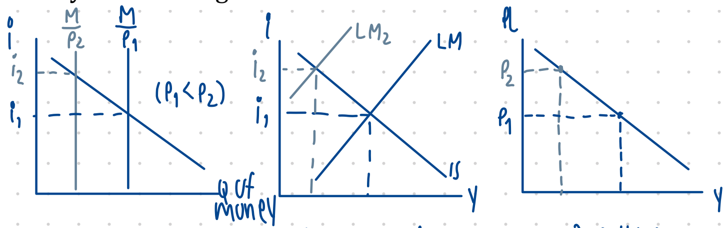
Exercise 7

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.



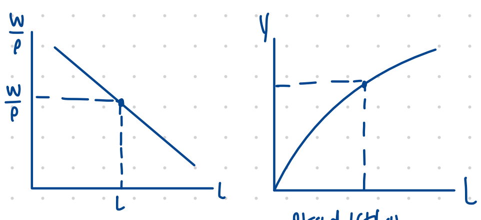
money market   IS-LM model   AD curve

- Price ↑ → real money ↓ → Ms shift left → interest rate ↑
- when i increase, LM shift upward
- AD curve summarize relationship between P and Y

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.

sticky wage theory - In short-run, nominal wage is sticky due to labor contract.

why SRAS is downward-sloping



labor demand   production function

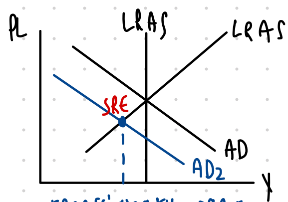
3. Explain why LRAS is vertical.

because LRAS doesn't depend on Price and the wage will adjust to clear labor market in long run

4. **<u>Cetaris Paribus</u>** (other things equal), how will each variable/event affect each curve – shift (to which direction?) or movement?

Variable/Event	AD	SRAS	LRAS
P↑	movement	movement	—
G↓	shift left	—	—
T↓	shift right	—	—
Autonomous C↑	shift right	—	—
Autonomous I↓	shift left	—	—
M↓	shift left	—	—
i↑	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↑	—	movement	movement
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 left	—
Permanent education reform	—	shift right	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.

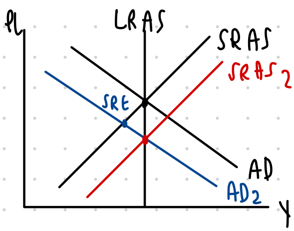


- If the government wants to correct such output gap, what policies can it implement? Give examples.

to correct recessionary gap, the gov. should use expansionary fiscal and monetary policy.

for example, lower interest rate

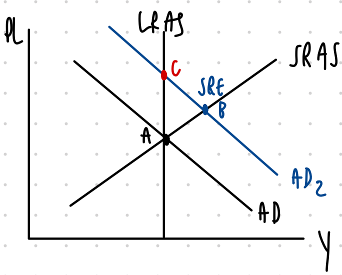
- If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium.



– self correcting mechanism –
In long-run, nominal wage is flexible, unemployed workers are willing to receive lower wage. As a result cost of production decreas, firms can hire more + produce more

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.

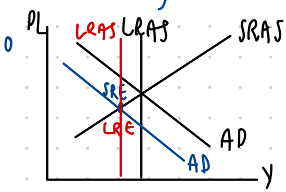
- positive AS shock => population growth rate

- 

it is a temporary positive AS shock. Therefore it will return to LRE when the time pass.

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.

o increasing death rate



negative shock shift AD downward.
In long-run, to return to LRE, the LRAS curve will shift to the left

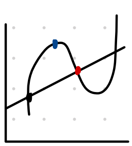
8. In macroeconomics, **Money Neutrality** is the idea that a change in the stock of money (M) does not affect real variables, like employment and real GDP. Is this true in the AD-AS model?
   (**Hint**: When the central bank changes money supply, M, does this affect output in the long run, i.e. full-employment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

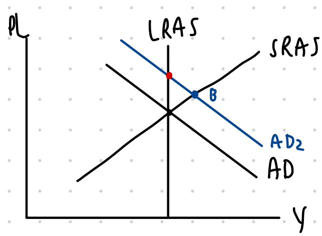
yes. because in the long run output will turn back to equalibrium

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?)

they can you supply-side policy

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?



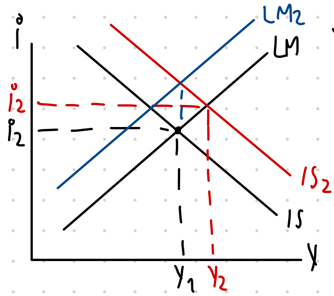


when AD increase to AD2 . SRE will be at B.
but in the long-run, labor will ask for higher wage.
hence, cost of production will increase. Therefore,
they will hire less and produce less

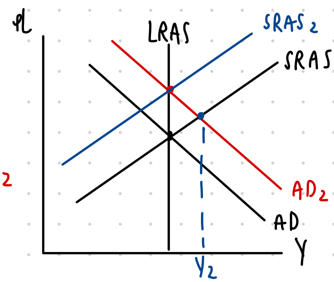
11. *** The IS-LM is for short-run analysis, while the AD-AS is for long-run analysis. Now, let's link them together. Suppose the government implements expansionary fiscal policy. Use the IS-LM and AD-AS models to show the policy effect in both short run and long run.

$G\uparrow, M\downarrow$

(**Hint**: In long run, what happens to P in the AD-AS model? How will this change in P affect the IS-LM model?)



IS-LM



AD-AS

AD curve and is curve shift upward due to expansionary fiscal policy. therefore, output increases and price level is higher, but in the long run, labour will ask for higher price, firms will cut their production and output will decrease. makes SRAS shift upward to new LRE. thus, price level is higher. it affect money market, Ms shift leftward makes LM curve shift upward.