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. <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	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
W↑		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	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.
- 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.

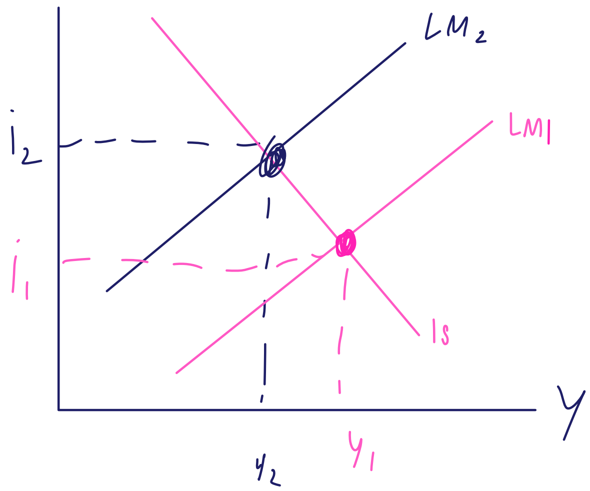
8. In macroeconomics, **Money Neutrality** is the idea that a change in the stock of money (M) does not affect real variables, like employment and real GDP. Is this true in the AD-AS model?
   (**Hint**: When the central bank changes money supply, M, does this affect output in the long run, i.e. full-employment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

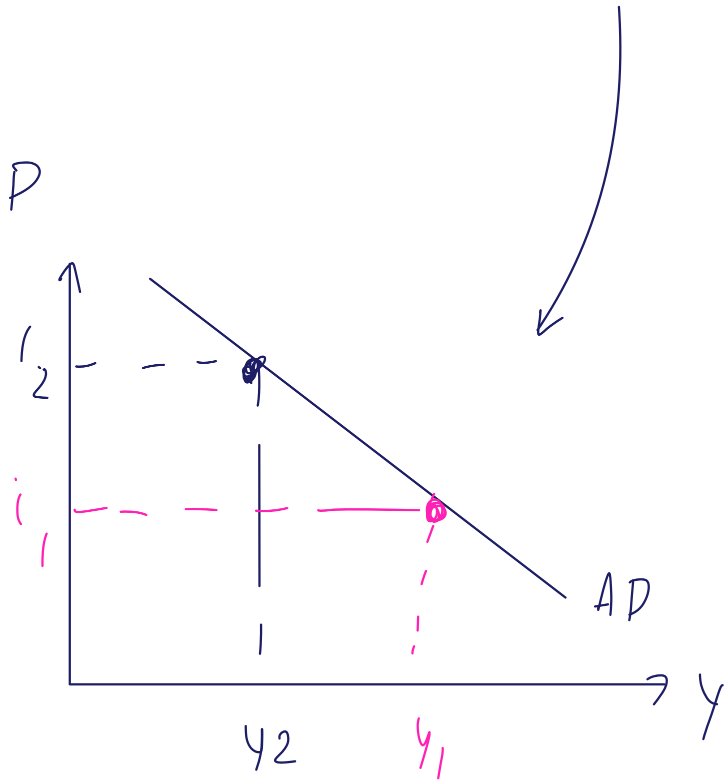
10. Economists usually have macroeconomic goals of low employment and low inflation. It is also believed that economists face the trade-off between these goals, especially in short run. Use relevant diagrams to explain the trade-off. Why does the trade-off no longer exist in long run?

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?)

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



P↑ → LM shift left → i↑ → I↓ → AF↓ → Y↓



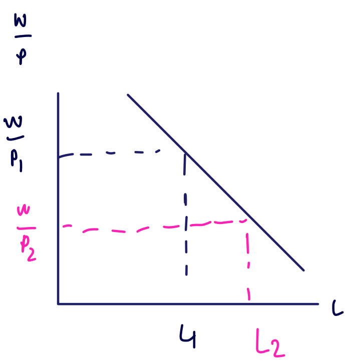
Slope of AD is downward because as price level increase the output decrease

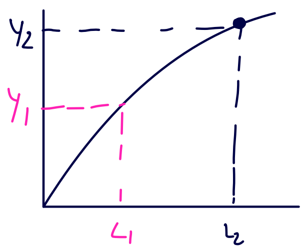
2. What is Sticky Wage Theory? Explain why SRAS is upward-sloping (that is, how SRAS is derived), using the sticky wage theory, labor demand diagram, and production function.

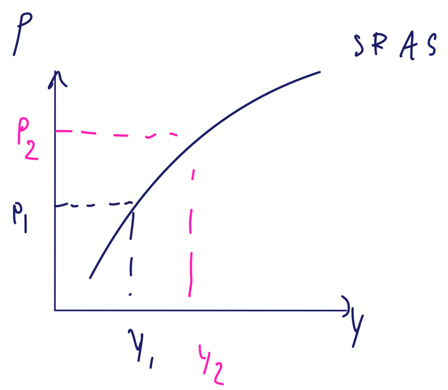
* Sticky wage in short run → nominal wage is sticky due to labor contract

* SRAS derived from labor mkt & Production function

P↓ → real wage↓ → firms hire more ↓ → produce more y







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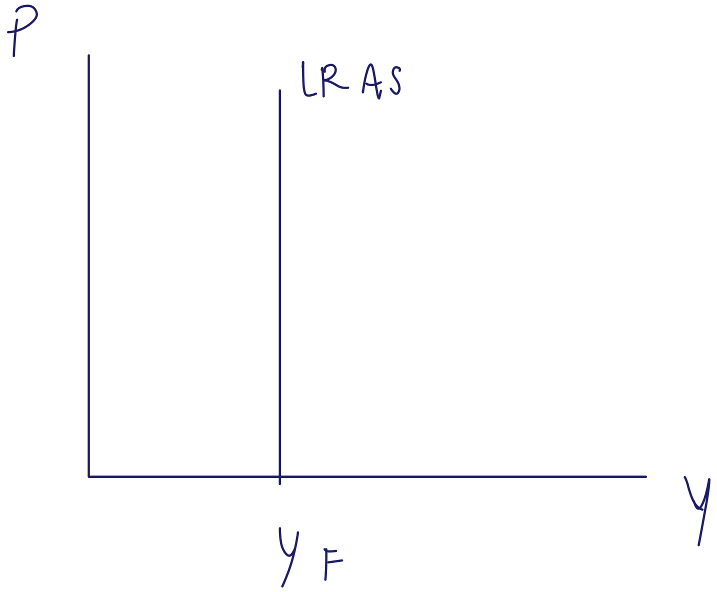

LRAS

not depend on price

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.
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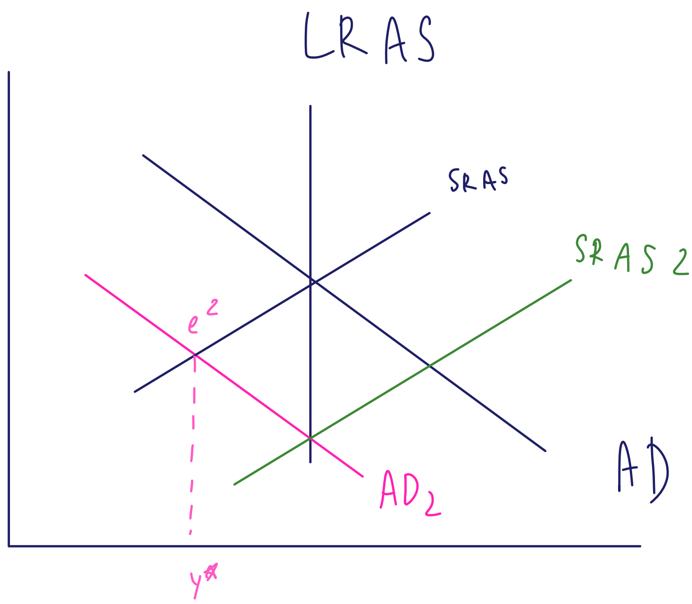


5.1 $y^* < y^p$
↳ recessionary gap

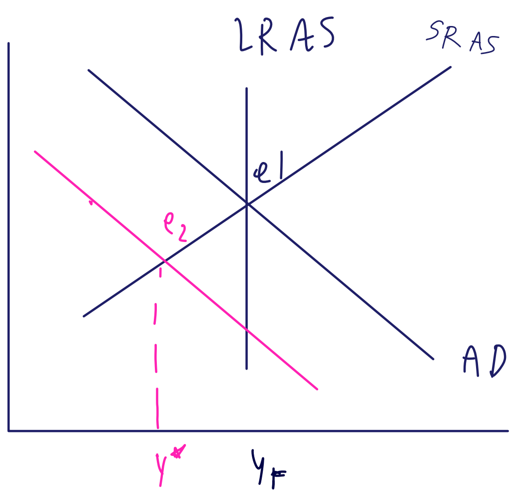
5.2 By correcting recessionary gap

gov can use both expnsionary fiscal & Mkt ex. cutting tax raise G /

raise us

Firm hire less labor → low output
→ firm negotiate to have lower wage
→ firm hire more labor
→ produce more SRAS shift to SRAS 2

5.3



at e_3 is the new equilibrium in long run

6. Suppose the economy faces a <u>temporary, positive</u> AS shock.
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