(1) [12 points] **The Mundell-Fleming (IS* − LM*) Model**

(a) [6 points] Suppose Congress cuts government spending in order to balance the budget. Use the Mundell-Fleming model with floating exchange rates to illustrate graphically the short-run impact of the cuts in government spending on the dollar exchange rate (e) and output (Y) in the United States.

*The U.S. dollar depreciates (↓ e) and output remains constant*

(b) [6 points] You are the chief economic adviser in a small open economy with a fixed-exchange-rate system. Your boss, the president of the country, wishes to increase the level of output in the short run in order to win reelection. Do you recommend using monetary or fiscal policy? Use the Mundell-Fleming model to illustrate graphically your proposed policy.

*Expansionary fiscal policy*
The Model of AD and AS

Assume that an economy is initially operating at the natural rate of output ($Y$). A short-run aggregate supply equation is given by

$$Y_t = Y + \alpha(P_t - P^e_t),$$

where $Y$ is output, $P$ is the price level, $P^e$ is the expected price level, and $\alpha > 0$

(a) [3 points] What is the slope of the aggregate supply curve?

*The slope of AS curve is $\frac{1}{\alpha}$*

(b) [5 points] According to the sticky-price model, the value of $\alpha$ depends on the fraction of firms with sticky prices. Other things being equal, if a greater proportion of firms follows the sticky-price rule, what happens to the slope of the AS curve?

*The slope of AS curve ($\frac{1}{\alpha}$) increases (decreases) as the fraction of firms with flexible prices increases (decreases) in the sticky-price model. Therefore, if a greater proportion of firms follows the sticky-price rule, the AS curve will be flatter*

(c) [6 points] Use the model of aggregate demand and aggregate supply to illustrate graphically the short-run and long-run effects on price and output of an unexpected expansionary monetary policy change

*This positive AD shock moves output above its natural rate and $P$ above the level people had expected. Over time, $P^e$ rises, SRAS shifts up, and output returns to its natural rate*
(3) [14 points] **The Phillips Curve**

Suppose that an economy has the Phillips curve

\[ \pi_t = \pi_t^e - 0.5(u_t - 0.06) \]

(a) [2 points] What is the natural rate of unemployment \((u^n)\)?

\[ u^n = 0.06 \text{ or } u^n = 6\% \]

(b) [6 points] Use the Phillips curve diagram to illustrate graphically how the inflation rate \((\pi)\) and unemployment rate \((u)\) change in the short run to an *unexpected expansionary* monetary policy

*If the change in monetary policy is not expected, in the short run, the inflation rate increases and the unemployment falls. It causes a movement along the Phillips curve.*

(c) [6 points] Use the Phillips curve diagram to illustrate graphically how the inflation rate \((\pi)\) and unemployment rate \((u)\) change in the short run to an *expected contractionary* monetary policy

*If the change in monetary policy is fully expected, the Phillips curve shifts downward to the left in the short run. Therefore, unemployment rate stays the same, but inflation rate will be lower than what it was initially.*