

IS-LM Model

Part 4

Fiscal & Monetary Policies

Fiscal Policy

- Expansionary
 - $G \uparrow$
 - $T \downarrow$
 - $G \uparrow$ and $T \uparrow$ equally
- Contractionary
 - $G \downarrow$
 - $T \uparrow$
 - $G \downarrow$ and $T \downarrow$ equally

Monetary Policy

- Expansionary
 - $M \uparrow$
- Contractionary
 - $M \downarrow$

Policies in the IS-LM Model

- IS Equation: $Y = C(Y-T) + I(i) + G$
- IS Curve shifts when G or T changes.
- Thus, Fiscal Policy shifts the IS curve ONLY.

- LM Equation: $M/P = L(i, Y)$
- LM Curve shifts when M or P changes.
- Thus, Monetary Policy shifts the LM curve ONLY.

REMINDER

- Throughout our IS-LM analysis so far, we assume that P or Price Level is constant.
- As a result, **nominal interest rate = real interest rate.**
- Hence, we can label the vertical axis of the IS-LM curves with i or r, without any problem.

- However, we do include P in the LM equation: $M/P = L$.
- This is because the AD/AS model will allow P to change.
- But for now, P is constant.

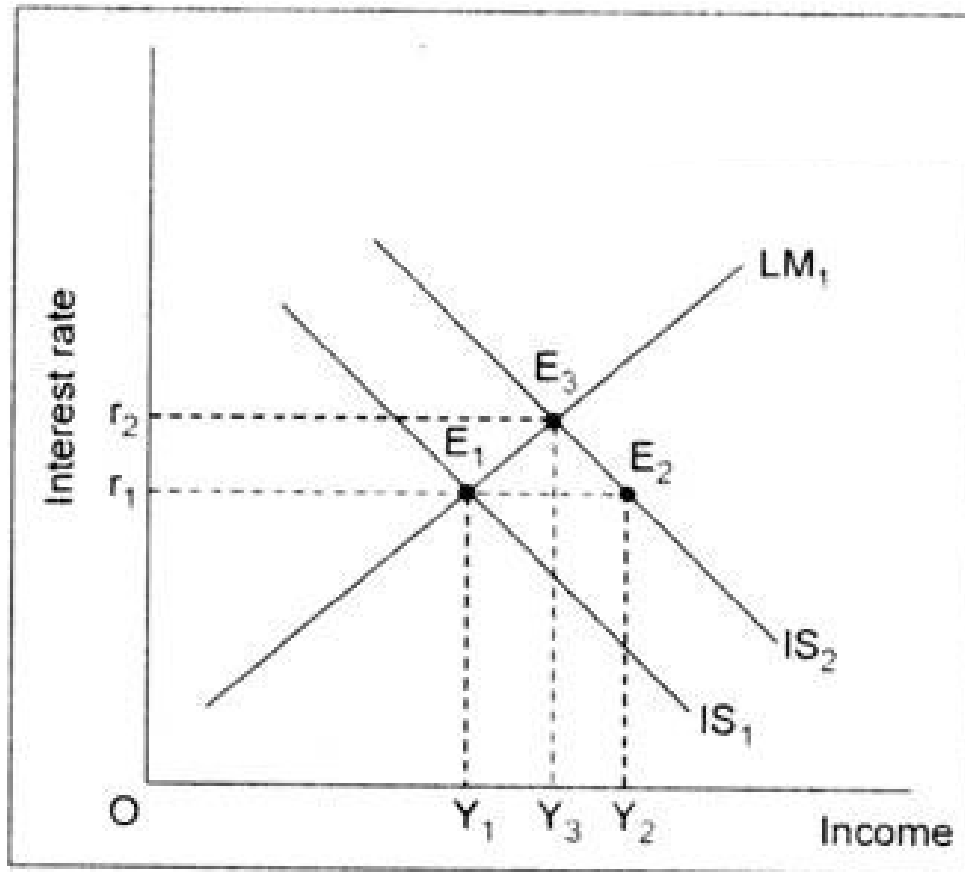
Fiscal Policy and IS Curve

Let GM denotes goods market and MM denotes money market.

Expansionary Fiscal Policy: when $G \uparrow$, or $T \downarrow$, or both $G \& T \uparrow$

- Consider the case when $G \uparrow$
- First: in GM, $G \uparrow \gg AE \uparrow \gg Y \uparrow$
- Now, GM is at E2, but MM is still at E1.
- Second: in MM, $Y \uparrow \gg M_d \uparrow \gg i \uparrow$
- Now, MM is at E3, but GM is still at E2.
- Third: in GM, $i \uparrow \gg I \downarrow \gg Y \downarrow$
- Now, GM and MM are in equilibrium at E3.
- New Equilibrium from $G \uparrow$: **Higher Y and Higher i**

Expansionary Fiscal Policy



Full Explanation

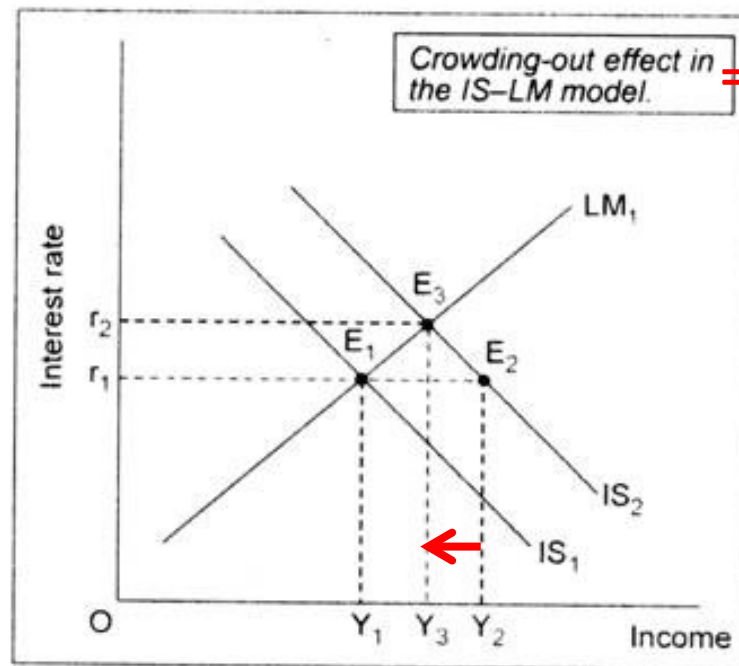
- When the government increases its spending (G), this raises demand in the economy (AE). Firms produce more to supply at the higher demand (so that $Y = AE$). This **raises output and hence income (Y)** in the economy.
- When people have more income (Y), they want to buy more goods. This raises the money demand (Md). The rise in money demand (Md) **raises the interest rate (i)**.
- However, higher interest rate (i) discourages investment (I). With lower investment, output falls (Y).
- As a result, the new equilibrium has higher output and higher interest rate.

Crowding-Out Effect

- Crowding-out Effect: public sector spending (G) reduces or eliminates private sector spending (I).
- The most common form of crowding-out effect is when a government increases its borrowing.
- The large borrowing (or large demand for money from the government) can lead to substantial rises in the interest rate, which discourages businesses from making investments.

Crowding-Out Effect

- When G increases, Y_1 increases to Y_2 (at E_2).
- However, **because of higher i (at E_3)**, investment falls.
- As a result, Y_2 decreases to Y_3 .



Crowding-out Effect

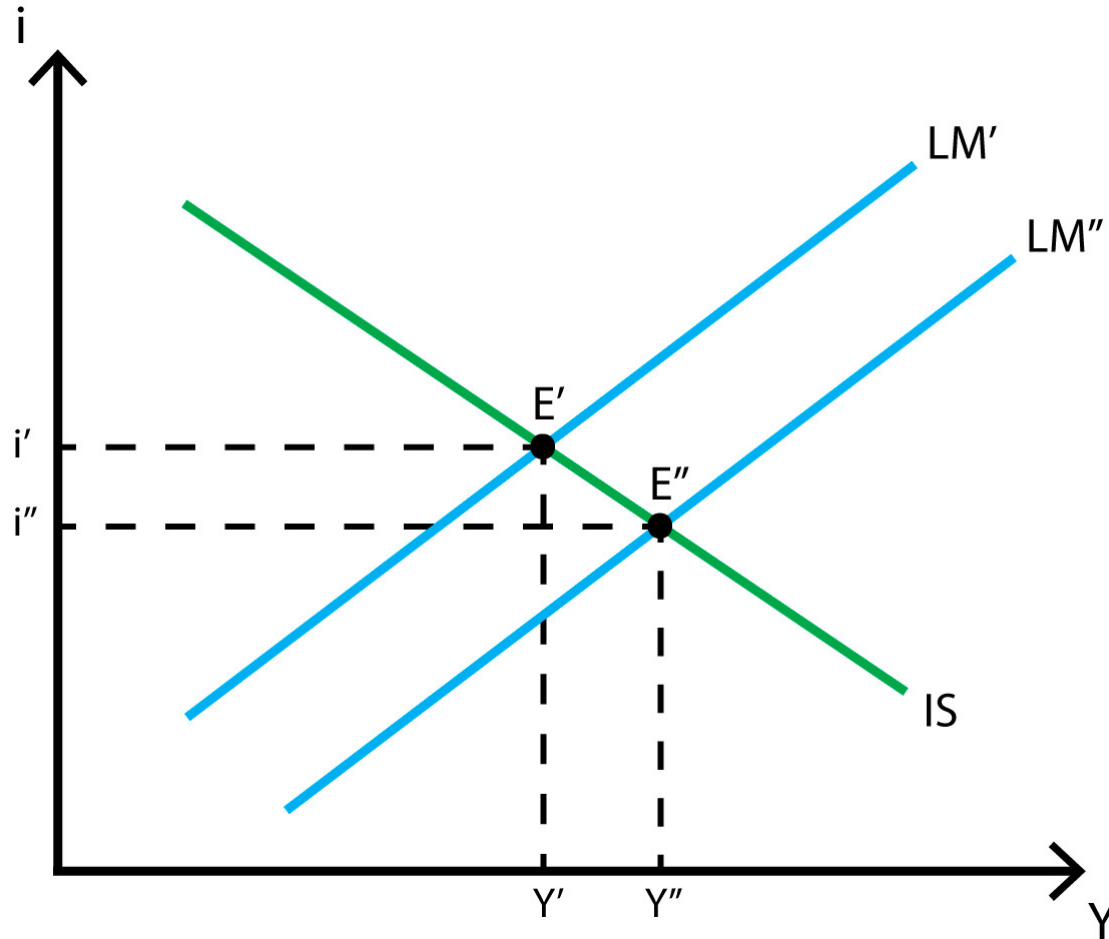
Monetary Policy and LM Curve

Let GM denotes goods market and MM denotes money market.

Expansionary Monetary Policy: when $M \uparrow$

- First: in MM, $M \uparrow \gg i \downarrow$
- Second: in GM, $i \downarrow \gg I \uparrow \gg AE \uparrow \gg Y \uparrow$
- New Equilibrium from $M \uparrow$: **Higher Y and Lower i**

Expansionary Monetary Policy



Full Explanation

- When the central bank increases money supply (M), bond issuers lower the interest rate (i).
- At the lower interest rate (i), investment becomes attractive. Firms increase investment (I). This raises demand in the economy (AE). Firms produce more to supply at the higher demand (so that $Y = AE$).
- As a result, the new equilibrium has higher output but lower interest rate.

Policy Effectiveness

- Economic Policies are aimed to “change” Y .
- “Change” means that it can increase or decrease Y .
- A policy is “Effective” when it can greatly change Y .
- Policy effectiveness depends on **the Slopes** of the IS-LM.

Policy Effectiveness

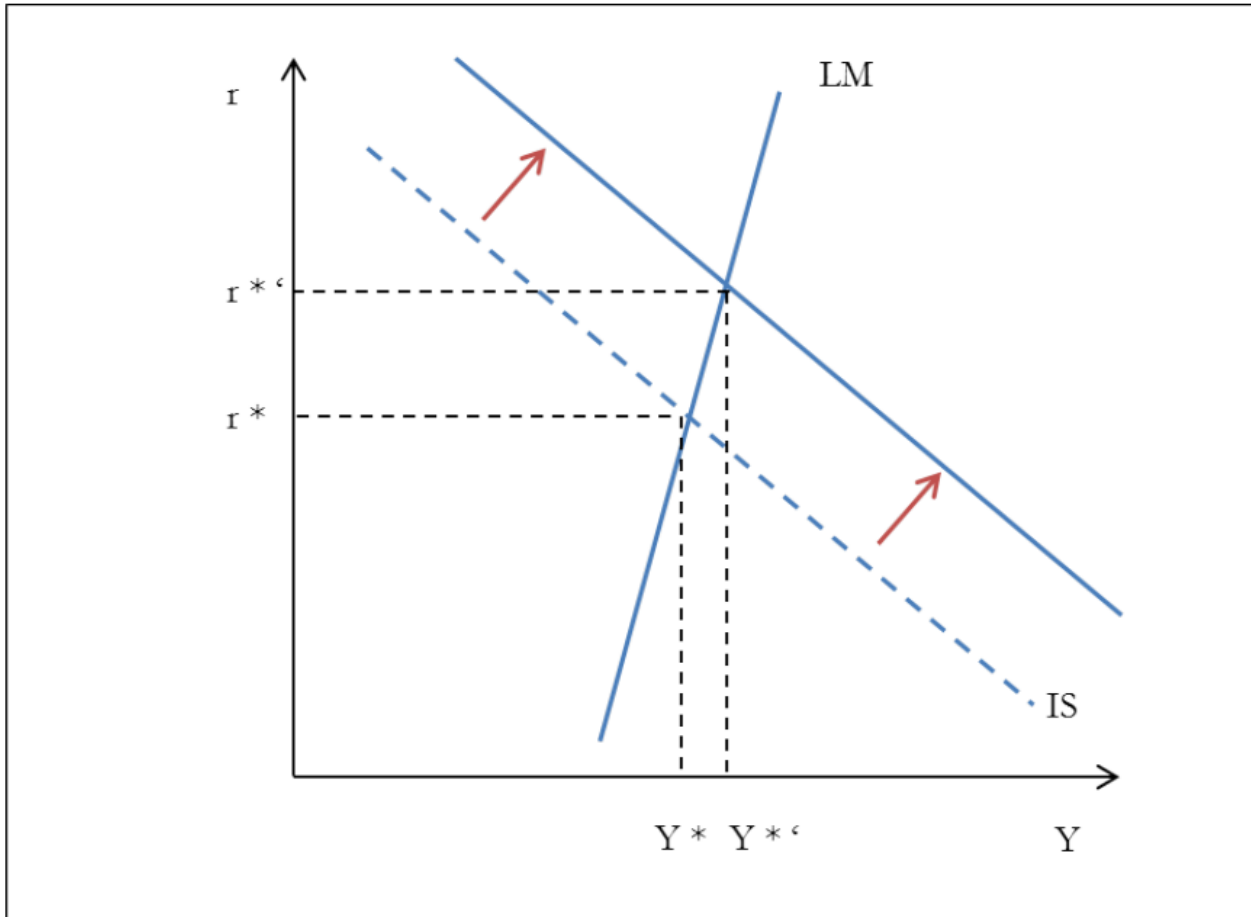
- When the LM curve is steep, shifting the IS curve (by using fiscal policy) does not change the output much.
- Thus, in this case, monetary policy (shifting the LM curve) is more effective.

- When the IS curve is steep, shifting the LM curve (by using monetary policy) does not change the output much.
- Thus, in this case, fiscal policy (shifting the IS curve) is more effective.

LM Steep

→ Fiscal Policy NOT effective

→ Use Monetary Policy



IS Steep

→ Monetary Policy NOT effective

→ Use Fiscal Policy

