

Homework 8

1. Suppose that the aggregate output (Y) is a linear function of the employed people (N), $Y = \gamma N$, with $\gamma > 0$. Calculate the effect of the government expenditure on the level of employment (i.e., $\frac{\partial N}{\partial G}$) in the Keynesian Cross model.

2. Suppose that the IS equation is given by

$$\begin{aligned} Y &= C(Y - T, r) + I(r) + G \\ C(Y - T, r) &= a + b \cdot (Y - T) - c \cdot r \\ I(r) &= d - e \cdot r \end{aligned}$$

where $a > 0$, $0 < b < 1$, $c > 0$, $d > 0$, and $e > 0$ are all constants.

- a) Given an increase in G , say ΔG , how and how much does the IS curve shift?
 b) If there is an improvement in investor sentiment, say, $I(r)$ becomes

$$I(r) = 2d - e \cdot r.$$

Then how and how much does the IS curve shift?

3. Suppose that the IS and LM equations are as follows,

$$\begin{aligned} \text{IS: } Y &= C(Y - T, r) + I(r) + G, \\ C(Y - T, r) &= a + b \cdot (Y - T) - c \cdot r, \\ I(r) &= d - e \cdot r, \\ \text{LM: } \frac{h \cdot M}{P} &= L(r, Y) = M_0 + f \cdot Y - g \cdot r, \end{aligned}$$

where a, b, c, d, e, f, g, h , and M_0 are all positive constants and $b < 1$.

- a) Given an increase in G , say ΔG , calculate the government multiplier effect. Compare your result with (i) the Keynesian Cross case, $c = e = 0$; (ii) the case where $c = 0$.
 b) If $f = h = 0$, does a monetary stimulus raise output? Does a fiscal stimulus work?
 c) If $g = 0$, does a monetary stimulus raise output? What about a fiscal stimulus?