

Solutions to Homework #5

Multiple choice questions:

1. B
2. D
3. D
4. B
5. C
6. C
7. D
8. C
9. A
10. A
11. B
12. A
13. C
14. C
15. B
16. C
17. B
18. D
19. D
20. A
21. C
22. C
23. A
24. D
25. D

Essay questions:

1. Mankiw textbook, Chapter 5, question 2, pp147:

- (a) National saving:

$$\begin{aligned} S &= Y - C - G \\ &= 5,000 - (250 + .75(5,000 - 1,000)) - 1,000 \\ &= 750 \end{aligned}$$

$$\text{Investment: } I = 1000 - 50 * 5 = 750$$

Net exports equals the difference between saving and investment. Thus,

$$NX = S - I = 0$$

Having solved for net exports, we can now find the exchange rate that clears the foreign-exchange market:

$$\begin{aligned} NX &= 500 - 500 * \epsilon \\ 0 &= 500 - 500 * \epsilon \\ \epsilon &= 1 \end{aligned}$$

(b) Doing the same analysis with the new value of government spending we find:

$$\begin{aligned} S &= Y - C - G \\ &= 5,000 - (250 + .75(5,000 - 1,000)) - 1,250 \\ &= 500 \end{aligned}$$

$$\begin{aligned} I &= 1,000 - 50 * 5 \\ &= 750 \end{aligned}$$

$$\begin{aligned} NX &= S - I \\ &= 500 - 750 \\ &= -250 \end{aligned}$$

$$\begin{aligned} NX &= 500 - 500 * \epsilon \\ -250 &= 500 - 500 * \epsilon \\ \epsilon &= 1.5 \end{aligned}$$

The increase in government spending reduces national saving, but with an unchanged world real interest rate, investment remains the same. Therefore, domestic investment now exceeds domestic saving, so some of this investment must be financed by borrowing from abroad. This capital inflow is accomplished by reducing net exports, which requires that currency appreciate.

(c) With the new interest rate:

$$\begin{aligned} S &= Y - C - G = 5000 - (250 + .75*(5000-1000)) - 1000 = 750 \\ I &= 1000 - 50 * 10 = 500 \end{aligned}$$

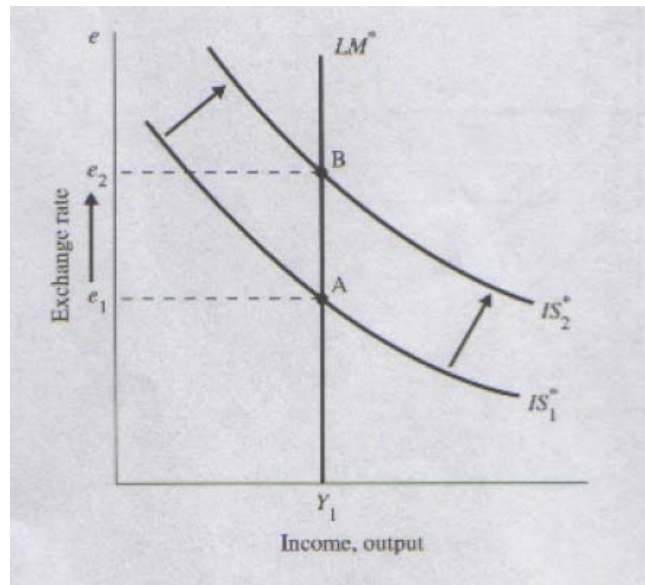
$$NX = S - I = 250, \text{ trade surplus.}$$

$$\begin{aligned} NX &= 500 - 500 * \epsilon \\ 250 &= 500 - 500 * \epsilon \rightarrow \epsilon = 0.5 \end{aligned}$$

Saving is unchanged from part (a), but the higher world interest rate lowers investment. This capital outflow is accomplished by running a trade surplus which requires that the currency depreciate.

Same as in a typical demand function, here the net export depends on the price of that good and income. As income rises, imports increase, so net export fall: $NX = NX(e, Y)$

- a. The fiscal expansion (an increase in G or a decrease in T) shifts the IS curve to the right. But with the floating exchange, if the LM curve does not change, neither does the income. The net-exports remain at its original level, but the exchange rate appreciates. Both imports and exports would decrease.



- b. Under fixed exchange rates, the fiscal expansion shifts IS curve to the right. As in part (a). Money supply has to increase to maintain the same nominal exchange rate. The income would increase, and the net export would also increase as well.

