

**Answer key for the Practice Final**

**PART A: Multiple Choice**

1. a; 2. a; 3. a; 4. a; 5. d; 6. d; 7. c; 8. d; 9. c; 10. c; 11. b; 12. a

**PART B: CONCEPT AND KNOWLEDGE**

**B1** Briefly explain following terminologies:

**B1.a.** Rational expectations:

People optimally use all the available information to forecast the future. In other words, people use the information they have in the best possible way to forecast the future.

**B1.b.** Uncovered interest parity condition

The domestic interest rate must be equal to the foreign interest rate minus the expected appreciation rate of the domestic currency.

**B1.c.** Marshall-Lerner condition

The condition under which a real depreciation leads to an increase in net exports.

**B.2.** “When account is taken of its effect on expectations, the decrease in government spending need not lead to a decrease in output.” Explain this statement.

In response to the announcement of the deficit reduction as the result of the decrease in government spending, there are three factors shifting the IS curve.

- i) Current government spending ( $G$ ) goes down, leading the IS curve to shift to the left. At a given interest rate, the decrease in government spending leads to a decrease in total spending, and so, a decrease in output. This is the standard effect of a reduction in government spending and the only one taken into account in the basic IS-LM model.
- ii) As the result of positive effect of a reduction of the budget deficit in the medium run and in the long run, people expect higher future output ( $Y^e$ ), leading the IS curve to shift to the right. At a given interest rate, the increase in expected future output leads to an increase in private spending, increasing output.
- iii) People expect that a reduction in the budget deficit induces a decrease in the interest rate and an increase in investment in the medium run and in the long run. Thus, the expected future interest rate goes down, leading the IS curve to shift to the right. At a given current interest rate, a decrease in the future interest rate stimulates spending and increases output.

When account is not taken of its effect on expectations, the effect of i) is only available and thus, the decrease in government spending leads to a decrease in output. However, taking into account the change in expectations, we do have the effects of ii) & iii) on the output and thus, if the sum of ii) and iii) dominates the effect of i), the decrease in government spending leads to an increase in output.

For graph, please refer to the Graph V – 4 in my lecture note.

**PART C: ALGEBRAIC AND GRAPHICAL ANALYSIS**

**C1.a.** The nominal return on the U.S. bond:  $10,000/(9433.96) - 1 \approx 6\%$ .

The nominal return on the U.K. bonds:  $(10,000/9,615.38) - 1 \approx 4\%$ .

**C1.b.** Uncovered interest parity implies that the dollar is expected to depreciate. Thus, the expected exchange rate is

$$E_{t+1}^e = E_t \frac{(1 + i_t^*)}{(1 + i_t)} = 0.55 \text{ pound} \frac{1.04}{1.06} = 0.54 \text{ pound}$$

**C1.c.** If you expect the dollar to appreciate instead, purchase the U.S. bond, since it pays a higher interest rate and you gain by holding dollars.

**C2.** Suppose the open economy is characterized as follows:

$$\begin{aligned} C &= 10 + 0.8(Y - T) \\ I &= 10; G = 10; T = 10 \\ IM &= 0.3Y; X = 0.3Y^* \end{aligned}$$

where the real exchange rate is fixed and equal to one and  $Y^*$  denotes foreign output.

**C2.a.**  $Y = C + I + G + X - IM = 20 + 0.8*(Y - 10) + G + 0.3Y^* - 0.3Y$   
 $Y = [1/(1 - .8 + .3)](12 + G + 0.3Y^*) = 2*(12 + G + 0.3Y^*) = 44 + 0.6Y^*$

The multiplier is 2 ( $=1/(1-.8+.3)$ ) when foreign output is fixed. The closed economy multiplier is 5 ( $=1/.5$ ). It differs from the open economy multiplier because, in the open economy, only some of an increase in autonomous demand falls on domestic goods.

**C2.b.** Since the countries are identical,  $Y=Y^*=110$ . Taking into account the endogeneity of foreign income, the multiplier equals  $[1/(1-0.8 -0.3*0.6 +0.3)]=3.125$ . The multiplier is higher than the open economy multiplier in part (a) because it takes into account the fact that an increase in domestic income leads to an increase in foreign income (as a result of an increase in domestic imports of foreign goods). The increase in foreign income leads to an increase in domestic exports.

**C2.c.** If  $Y=125$ , then foreign output  $Y^*= 44+0.6*125=119$ . Using these two facts and the equation  $Y = 2(12+G+0.3Y^*)$  yields:  $125 = 24+2G+0.6*(119)$ . Solving for G gives  $G=14.8$ . In the domestic country,  $NX = 0.3*(119)-0.3*(125) = -1.8$ ;  $T-G = 10-14.8=-4.8$ . In the foreign country,  $NX^*=1.8$ ;  $T^*-G^*=0$ .

**C2.d.** If  $Y=Y^*=125$ , then we have:  $125=24+2G+0.6*(125)$ , which implies  $G=G^*=13$ . In both countries, net exports are zero, but the budget deficit has increased by 3.

**C3.** In a closed economy, the effects of any change in  $Y$  on demand all falls on domestic goods. In an open economy, some of the increased spending falls on imports. So, the final change in  $Y$  will be smaller in an open economy because of the existence of the marginal propensity to import and thus the change in imports offsets the change in output.

**PART D: APPLICATION**

**D1.**  $Y$  must fall and  $NX$  must rise. An appreciation will not work. It would cause  $Y$  to fall but will  $NX$  will decrease even more. A fiscal contraction would work because it would reduce  $Y$  and also reduce imports which will cause  $NX$  to rise.