Supervision 7
Open Economy in Long Run

Short questions (250 words max)

1. From January 2018 to January 2019 the inflation rate in the United States was 1.5%, while during the same period the inflation rate in the United Kingdom was 1.8%. Assuming purchasing power parity, explain whether the UK pound sterling would have appreciated or depreciated against the US dollar, and by how much.

2. In a small open economy with perfect capital mobility, export subsidies lead to an improvement of the trade balance in the long run. True or false? Explain.

3. Suppose the government of the United States, a large open economy, reduces lump-sum taxes. Using the classical model, analyze how this affects the US economy in the long run.

Problems

4. Suppose the government would like to increase government spending to improve the National Health Service (NHS). To prevent an increase in the government budget deficit, it is considering an increase in both government purchases (G) and lump sum taxes (T) by the same amount, so $\Delta G = \Delta T > 0$. You are asked to provide an analysis of the long run effects of this policy using the classical model, assuming the UK is a small open economy with perfect international capital mobility and initially balanced trade $(NX = 0)$.

   (a) Analyze the effect on saving, investment and the trade balance.

   (b) Give a precise definition of the real exchange rate. Explain the effect on the real exchange rate graphically and intuitively.

   (c) What is the likely effect on exports and imports?

   (d) What information would you need to estimate the quantitative effect on the trade balance (besides the amount ΔG)?

5. Consider a small open economy with flexible prices and no government, in which GDP Y, consumption C, investment I and net exports NX are described by

$$
\begin{aligned}
Y &= \bar{Y} = 1000 \\
C &= 100 + 0.6Y \\
I &= 400 - 50r \\
NX &= 200\,(1 - \varepsilon)
\end{aligned}
$$

where r is the domestic real interest rate, and ε the real exchange rate, defined as the relative price of home goods in terms of foreign goods. Capital is imperfectly mobile, with the domestic real interest rate satisfying the following relationship with the world real interest rate r^w:

$$
r = r^w - 0.04NX + \theta
$$

Assume for simplicity that net factor income and unilateral transfers from abroad are zero.

   (a) Provide an economic interpretation for the terms in the last equation.

   (b) Suppose that initially, $r^w = 2$ and $\theta = 0$. Solve for the equilibrium values of r, ε, C, I and NX.

   (c) Now suppose that there is an increase in θ to $\theta = 2$. Again solve for the equilibrium values of r, ε, C, I and NX.

   (d) Suppose the country is pegging its nominal exchange rate to a foreign currency. Assuming the foreign price level remains constant, how does the domestic price level change as θ increases?

   (e) Explain how an increase in θ would affect net capital outflows. Discuss briefly whether this is a plausible model of 'capital flight'.

Main reading

- Mankiw and Taylor (2014), *Macroeconomics - European Edition*, chapter 6.

Supplementary references
- Blanchard and Johnson (2012), *Macroeconomics*, chapter 18.
- Jones (2014), *Macroeconomics*, chapter 19.8 and 20.2.
- Krugman, Obstfeld and Melitz (2014), *International Economics: Theory and Policy*, chapter 13 and 16.