PROBLEM SET 7 Questions
14.02 Principles of Macroeconomics
April 29, 2005
Due May 6, 2005

I. Answer each as True, False, or Uncertain, providing some explanation for your choice.
 1. A real depreciation always improves the trade balance.

 2. An increase in exports (due for example to an increase in foreign output) increases imports.

 3. Governments should avoid trade deficits as they always lead to an outflow of foreign capital.

 4. If the domestic nominal interest rate and the expected exchange rate are both fixed, and the domestic and foreign nominal interest rates are initially equal, then an increase in the foreign interest rate will create expectations of an appreciation in the domestic currency.

 5. In an open economy, monetary policy affects the demand for domestic goods through two channels instead of the usual one.

 6. If capital is not perfectly mobile, the policy maker may be able to control both the money supply and the exchange rate.

II. Policy Mix (Chapter 19)
 Consider the following specifications of an open economy:
 $C = c_0 + c_1(Y - T)$
 $I = b_1 Y - b_2 i$
 $G = G_0$
 $T = T_0$
 $X = x_1 Y^* - x_2 \epsilon$
 $IM = q_1 Y + q_2 \epsilon$
 where $c_0, c_1, b_1, b_2, G_0, T_0, x_1, x_2, q_1, q_2$ are all positive constants. Y^* is foreign output/income and ϵ is the real exchange rate (the price of domestic goods in terms of foreign goods)

 1. Express the equilibrium domestic output in the form of $\mu\ A(T_0, G_0, i, Y^*, \epsilon)$, where $A(T_0, G_0, i, Y^*, \epsilon)$ is the autonomous spending, and μ is the multiplier in the domestic goods market. Express μ in terms of c_1, b_1 and q_1? (Assume that the condition for μ being positive holds from now on.)

 2. What is the interpretation of q_1? How does a higher q_1 affect the multiplier? Explain.

3. Derive the condition we need such that a real depreciation leads to an improvement in the trade balance. Explain intuitively why we need this condition.

4. With the condition you derived in (3), can we be sure that domestic output increases as a result of a real depreciation?

5. Suppose we start with a situation in which trade is balanced, but output is below its natural level. What can the government do if it wants to increase output but does not want to generate a trade deficit. Derive the required changes in G and ϵ (Assume that both ∂G and $\partial \epsilon$ are small, so you can use a linear approximation)

III. IS–LM in an open economy (Chapter 20)

Consider the following situation. A country is running a large trade deficit, and the policy maker wants to reduce it while not affecting aggregate output. The exchange rate is flexible. You may assume that the Marshall-Lerner condition is satisfied, that there is no J-curve effect, that the domestic and international prices are fixed and equal, and that the country allows capital to flow in or out without restraint.

1. Describe a mix of fiscal and monetary policies which would do the job.

2. Which components of aggregate demand are different between the old equilibrium and the new equilibrium (i.e., before and after the policies are enacted)? And in what way?

3. Suppose the exchange rate is fixed and devaluation is not an option (the point of a fixed exchange rate is precisely that - it should be fixed, and not subject to the whims and fancies of the policy maker). Assume everything else remains as stated in the beginning of the question. Could the policy maker achieve his objective? Why or why not?