Please staple your problem set!

Problem Set #5
Due: Friday, April 23

Part I. True/False/Uncertain

1. The appreciation of the Euro with respect to the Dollar necessarily implies that European tourists in US find everything very cheap.

2. If domestic prices and nominal exchange rate are constant, inflation abroad tends to cause a depreciation in the real exchange rate.

3. With perfect capital mobility, nominal interest rates all around the world have to be equalized.

4. The current increase in US fiscal deficit is expected to benefit Mexican economy.

5. A real depreciation always results in an increase in next exports.

6. No matter if we are in a closed or in an open economy, if both private savings and public surplus decrease, investment has to be smaller.

Part II: The goods market in an open economy.

The following equations describe the goods market in Mexico.

$C = c_0 + c_1 (Y - T)$
$I = b_1 Y - b_2 i$
$IM = m_1 Y - m_2 \in$
$X = x_1 Y^* + x_2 \in$

All the parameters are positive, and $c_1 + b_1 - m_1 < 1$. We assume for simplicity that the real exchange is equal to 1. Government spending (G) and the interest rate (i) are exogenous.

1. Compute the total demand for domestic goods and the net exports as a function of output. What are the slopes?

2. Solve for the equilibrium output. Compare the Keynesian multiplier in this case with the one in the closed economy.

3. What is the effect of a Mexican fiscal expansion on output and trade balance? Show it graphically using Z-Y and XN-Y graphs.

4. As you can imagine, a large share of Mexican exports go to US. What is the impact of an increase in US GDP on Mexican GDP and trade balance? Show your results graphically using Z-Y and XN-Y graphs.

5. Given the NAFTA agreement, Mexico is opening its economy even further. What is the impact of an increase in trade between Mexico and US (increase in x_1 and m_1) on the multiplier? Do you expect Mexican economy to be more or less sensitive to domestic shocks like changes in Mexican consumers confidence (c_0)?

Part III: The Uncovered Interest Parity.

Consider the decision of a US investor to invest $100 in a US bond or in a Mexican bond. The exchange rate between $ and Peso is denoted *E* (the price of one peso in dollars). The annual interest rate paid on US bonds is i and the annual interest paid on Mexican bonds is i*.

The investor expects that the nominal exchange rate will be unchanged next year. For simplicity assume the original $E_t = 1$.

1. Derive the condition on i and i* that must hold for the US investor to be indifferent between buying US bonds and Mexican bonds.

Now imagine that Mexican bonds have a probability of default of 0.25. That is, with probability 0.25 the investor gets zero return and, otherwise, she gets $(1+i^*)$ pesos.

2. How many dollars will the investor get if Mexico defaults? How many if Mexico doesn't?

3. Derive the new condition on i and i^* that must hold for the US investor to be indifferent between buying US bonds and Mexican bonds.

The investor expects now that the nominal exchange rate will decrease. That is, the peso is going to be cheaper (E = 0.5)

4. Going back to the case with zero probability of default. Derive the condition on i and i^* that must hold for the US investor to be indifferent between buying US bonds and Mexican bonds.

5. How does your answer for question 4 change if we incorporate again a 0.25 probability of default on Mexican bonds?