14.02: Principles of Macroeconomics, Fall 1999

2 pages

Problem Set 7
Due: Wednesday, November 10.

Question 1. **True**, **False**, **or Uncertain**.? **Give a brief but careful explanation**.

a) Last year, real interest rates in Brazil were at a level of 40% (per year). The reason for this is that investment in Brazil is very productive and its rate of return is 40%.

b) A country with a fixed exchange rate experiences a currency crisis only if its fundamentals (for example its budget deficit or its trade balance) deteriorates making the currency peg unsustainable.

c) Fear of increasing inflationary pressures made financial markets to expect the Federal Reserve to increase the interest rate by 50 basis points (0.5 percentage points). If the Fed later announces an increase of 25 basis points this would then cause a depreciation of the dollar (this question draws from the last part of chapter 14 of Blanchard's book).

d) At the beginning of 1999, the US yield curve was steeply upward sloping. This was evidence that financial markets expected the Fed to increase the interest rate (this question draws from section 9.1 of the book).

Question 2

In a given emerging country (for example Brazil), there is flexible exchange rate. There a one year bond giving 100 reais (the name of the Brazilian currency) at maturity pays a nominal interest rate of 8%, while a one year bond in the US giving 100$ pays a nominal interest rate of 4%. Forecasted inflation for the following year is 2% for the US and 7% for Brazil.

a) What are the prices of the Brazilian and US bonds (in their respective currencies)? Which one would you buy?

b) Knowing that the exchange rate is now 2 reais per dollar, what is the expected nominal exchange a year from now? What, if anything, would you conclude from this about the evolution of the Brazilian trade balance?

c) Find by how much the real exchange rate is going to change in the next year. What, if anything, would you conclude about the evolution of the Brazilian trade balance?

d) Suppose that now Brazil fixes its exchange rate to the US dollar at the current rate of 2 reais per dollar. What will be the new price of the Brazilian bond if financial markets believe that the government will be able to maintain the peg for the year?

e) Suppose now that financial markets believe that the reais could be devalued to the level of 3.4 reais per dollar in the next year with a 50% probability (and there is a 50% probability that the peg will be maintained at the original level with no devaluation). By how much must the Brazilian

Central Bank increase the domestic interest rate to defend the reais?

Question 3

Consider our standard economy where consumption depends on disposable income, investment depends on income and the real interest rate, and net exports depend on the level of activity and the real exchange rate, and where government expenditure is spent entirely on domestic goods

a) Assuming that the exchange rate is flexible and that initially output is at its target level but that there is a trade deficit. What would be the simplest combination of policy actions to get trade balance, but not affecting the level of output? Could you have achieved this result if the exchange rate was fixed?

b) Assume now that government expenditure consists entirely of foreign goods (you can think of this as essential medical imports, or luxury goods for

corrupt officials). What is the simplest combination of policy actions now to get trade balance not affecting the level of output? Could you achieve

this result if the exchange rate is fixed?