

14.02. – Fall 2001 – QUIZ 2

STOP! READ INSTRUCTIONS FIRST:

- Please, **write down your name in the top right corner of every page.**
- Read all questions carefully and completely before beginning the exam.
- Label all of your graphs, including axes, clearly; if we can't read the graph, you will lose points on your answer.
- Show your work on all questions in order to receive partial credit.
- The quiz is worth a total of 100 points.
- No notes, calculators, or books may be used during the quiz.
- You will have 2 hours to complete the quiz., although it should take you *considerably less* than that. Good luck!

NAME:

TA:

SECTION/RECITATION TIME:

QUESTION 1: TRUE, FALSE or UNCERTAIN.
20 points

Explain your answer completely but briefly.

1. An expansionary monetary policy lowers the natural rate of output.
(5 points)

2. When an economy opens to trade and subsequently increases the degree of competition faced by producers in the final goods market, the natural rate of unemployment increases.(5 points)

3. In a dynamic context, a monetary contraction is followed by an immediate increase in the interest rate. The new interest rate (at impact) is higher than the final equilibrium interest rate. (5points)

4. There are 2 countries in the world, A and B, which maintain a fixed exchange agreement. Country A has experienced higher GDP growth and higher inflation than country B. The worsening of A's trade balance over this period should come as no surprise. (5 points)

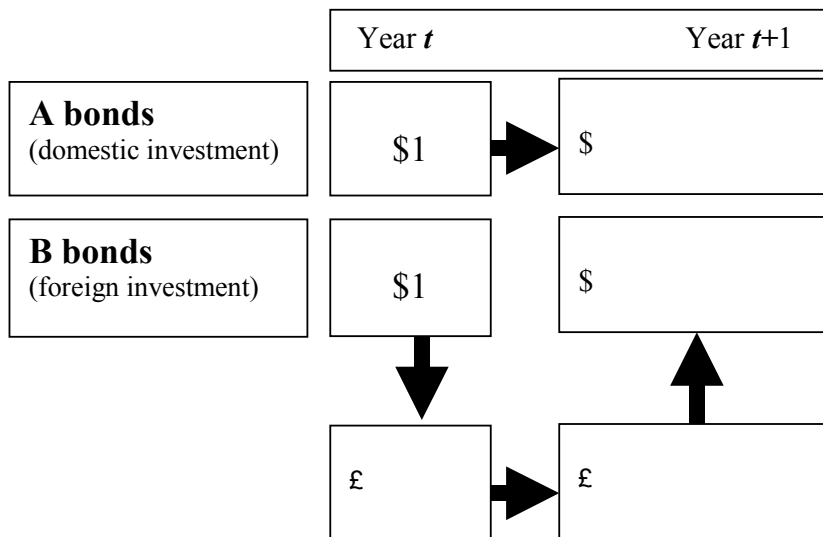


Figure 1:

QUESTION 2: 40 Points

Consider two identical economies, A and B, that trade among themselves and that have flexible exchange rate regimes. Residents have the choice of holding foreign or domestic bonds with interest rates i^* and i . Assume there is perfect capital mobility, the Marshall-Lerner condition holds (i.e.: a depreciation leads to an improvement in the trade balance) and the expected future exchange rate is equal to one.

1. State the (uncovered) interest rate parity condition and explain in detail what is being arbitrated by filling in the blanks in the diagram above.

2. Now assume the government in country A doesn't like the idea that people buy foreign assets. For that purpose, they impose a tax as follows: For

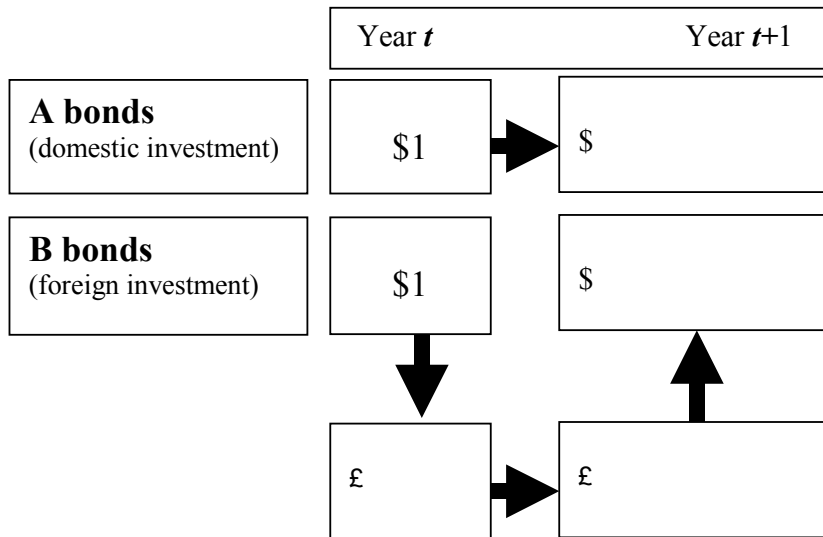
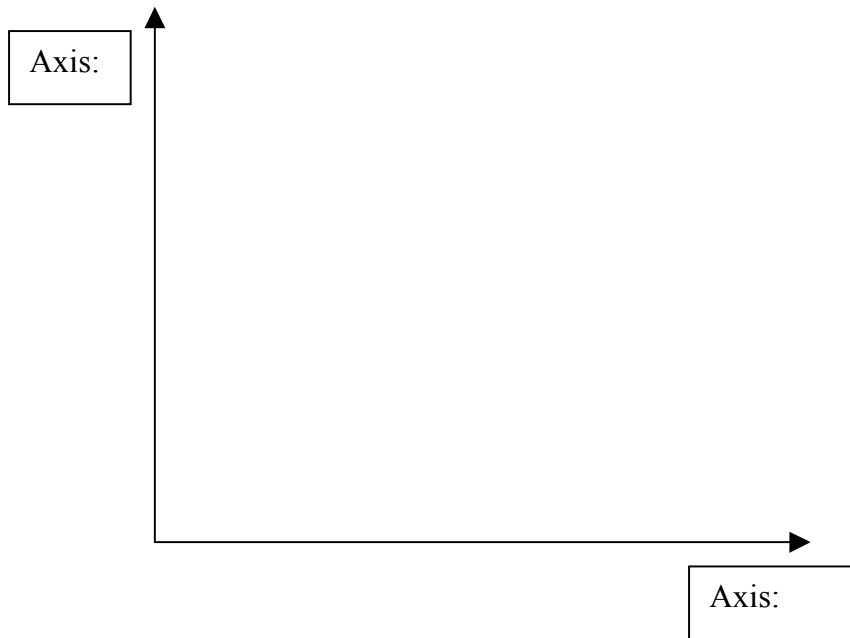


Figure 2:

every unit of domestic currency used to purchase foreign currency, they must pay a tax t (also in domestic currency). Fill in the blanks in the diagram above, and use it to determine the new interest parity condition.

- Let us now go back to the initial situation (i.e.: no tax on purchases of foreign currency). Suppose income taxes in country A are increased. Plot the IS-LM graphs for both countries, indicating any changes in them as a result of this new policy.



4. Fill in the blanks of this chart with symbols indicating whether each of the following variables *increases* (+), *decreases* (-), remains *unaffected* (=) or *cannot be determined* (?).

Y_a

C_a

NX_a

I_a

E_a

Y_b

C_b

NX_b

I_b

E_b

QUESTION 3: Small versus Large Economy (40 points)

Suppose there are two types of countries in the world, small and large. The behavioral equations for the small country are:

$$C = \alpha Y$$

$$I = \beta Y - \gamma i$$

G given (exogenous)

$$NX = \delta Y^* - \lambda Y - \mu^s \frac{1}{E}$$

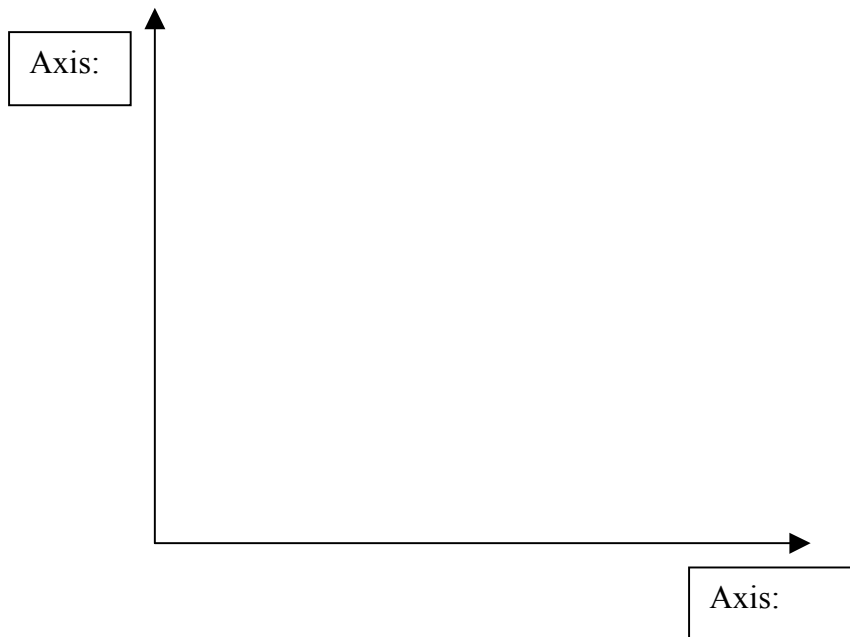
where the superscript "s" denotes small, and we have assumed that prices are fixed so $e = E$. There are similar behavioral equations for the large country: $\mu^s > \mu^l$.

1. What does our theory tell us about the relation between E (defined as in class and textbook) and net exports?

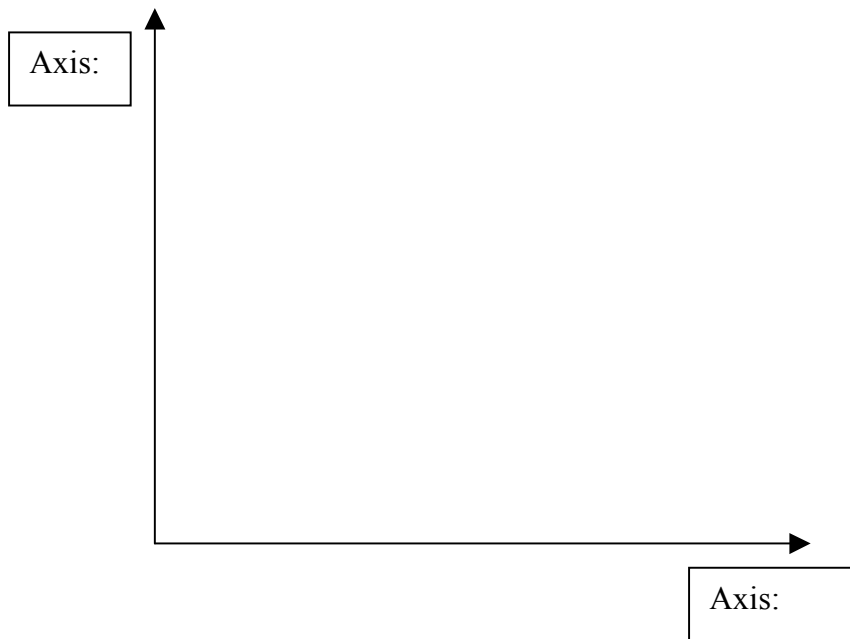
2. Now suppose $E_{t+1}^e = \bar{E} = 1$. Also suppose that the world interest rate is described by: $i^* = (1 - a^s)\bar{i}^* + a^s i$, where \bar{i}^* is dependent on economic conditions in rest of world and a^s is the weight of the domestic interest rate for the small country.

(i) Use the arbitrage condition from trading domestic versus foreign assets and derive E as a function of i . Plot with E on the y-axis.

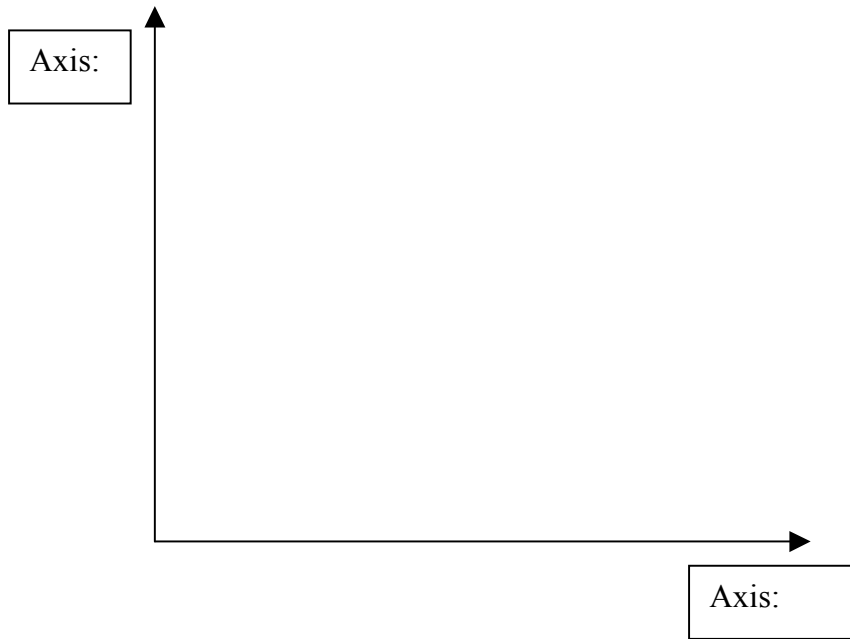
(ii) Plot on the same graph the relation for a large country, that is $a^l > a^s$. Interpret the different slopes. Where do the two curves intersect?



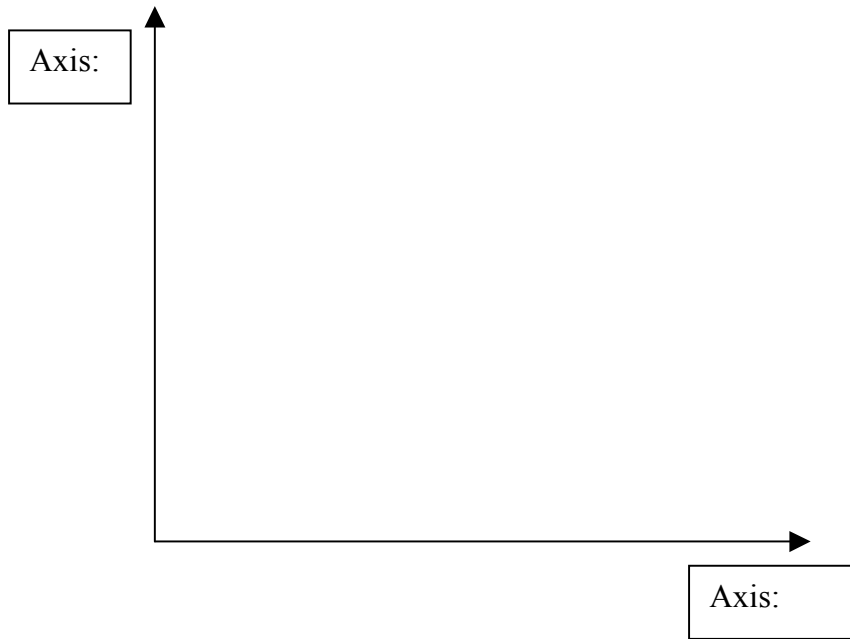
3. Now solve for the goods market equilibrium in each country. What is the slope of the IS (with i on the y-axis)? Plot the two curves for a small and large country respectively (μ^l versus μ^s). How do they compare?



4. Now include a standard LM curve in the same (i, Y) space. Analyze the effect of a monetary expansion in the two countries. In which country is monetary expansion more effective (in terms of altering Y)?



5. Now analyze the effects of a fiscal expansion in either country. Where is fiscal policy more effective?



6. Now, assume investment in the small country does not depend only upon the interest rate and the level of output as usual. Investment in the small country will also depend on the cost of intermediate goods, whose price is completely determined by the exchange rate. How does this change the IS and the LM if at all? Does this affect the effectiveness of a change in monetary policy?

