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The Global Economy II

Nova SBE – Fall 2023 Miguel Lebre de Freitas, Diogo Lima, Pedro Sousa Coelho Exam 09/12/2023 – Duration: 2h00

I (4.5)

Define *three* of the following concepts (3-5 lines each):

- i. Foreign Exchange Put Option
- ii. Liquidity Trap

iii. Long-term Crowding Out of Fiscal Policy

- iv. Second Generation Speculative Attack
- v. Monetary Union vs Fixed Exchange Rate System

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Number:

Name:

IV (2)

In each question, choose one (correct answer: +0.5; wrong answer: -0.125):

- a. The covered interest rate parity will fail if (i) the domestic and foreign assets are perfect substitutes; (ii) agents are risk averse; (iii) tax rates on income and on capital gains are the same; (iv) none of the above.
- b. If the value effect offsets the volume effect: (i) a fiscal expansion will deteriorate the trade balance; (ii) the Marshall-Lerner condition will hold; (iii) a monetary expansion could be contractionary under float; (iv) none of the above
- c. The advantage of a pure floating regime as compared with a fixed exchange rate is that:
 (i) the country is more isolated to shocks in the foreign interest rate; (ii) it avoids large swings in the real exchange rate; (iii) fiscal policy will be highly effective; (iv) none of the above.
- d. The FIX Line will shift to the right if: (i) the countries have an experience of high inflation; (ii) there are currency mismatches in foreign debt; (iii) there is high flexibility in labour market; (iv) none of the above

Number:

Name:

II (13.5) Please round out non-finite numbers to 3 decimal places.

II.A. Consider an economy with **sticky prices** under **float**, where the interest rate parity holds instantaneously, and PPP holds in the long run (one year time). The demand for real money balances is given by $m^D = \frac{Y}{10i}$, where $Y_f = 150$ refers to output (constant). The foreign price level is constant and equal to $P^* = 2$.

a) Assume initially that M = 150 and that $i = i^* = 10\%$. Find:

(a1) Real Money Demand. (a2) Price Level. (a3) Nominal Exchange Rate.

(a4) Represent graphically the equilibrium in the money market and in the foreign exchange market.

b) Assume that there's a <u>temporary</u> positive output shock, so that: Y' = 300. Considering that the central bank keeps the money supply unchanged, find:

(b1) The domestic interest rate

(b2) Assume that the nominal exchange rate is still the same as in (a3). If you needed money in the foreign country in one year, would you prefer to transfer the money today and invest in the foreign country or to invest in the domestic country today and transfer the money in 12 months?

(b3) If all agents in the economy did the same as you, how would the nominal exchange rate adjust?

(b4) Using the nominal exchange rate found in (b3), is the currency at premium or at discount? (*Tip: you don't need to compute the forward, just compare the spot rate with the expected rate*)

(b5) Explain the adjustment in the money market and in the foreign exchange market.

c) Assume now that with the same <u>temporary</u> output expansion (Y' = 300), the central bank wants instead to keep the exchange rate fixed.

(c1) Compute the implied money supply.

(c2) Explain the adjustment in the money market and in the foreign exchange market.

Number:

Name:

II.B. Consider an open economy with **sticky** prices under a **flexible exchange rate regime**. In this economy, money demand is given by $m^D = \frac{Y}{10i}$ and full employment output is $Y_f = 100$. The interest rate parity holds instantaneously, the foreign interest rate is equal to $i^* = 10\%$, and $P^* = 1$. The goods market equilibrium is described by the following expression: Y = 4 ($\overline{A} + TB$), where $\overline{A} = 25$, $TB = 5(\theta - 1)$ and $\theta = \frac{eP^*}{P}$. Also, M = 50 and $E^e = \frac{1}{2}$. Initially, no policy change is expected.

e) Assuming that P = 1, describe the initial equilibrium:

(e1) Derive the expression for the AA & DD Curves.

(e2) Find the equilibrium level of the exchange rate and output.

(Tip:
$$ax^2 + bx + c = 0 \iff x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$
)

(e3) Compute the value for the trade balance.

(e4) Is there internal and/or external balance in this economy? Justify.

f) Describe the adjustment in the long-run, assuming no policy intervention:

(f1) Find the long-run value for the price level.

(f2) Find the long-run expression for AA & DD.

(f3) Compute the value for the trade balance.

(f4) Explain the adjustment with the help of the AA-DD diagram.

g) Departing from (d), assume instead that the government tasks the central bank with

achieving full-employment in the short-run with a permanent monetary expansion.

(g1) Compute the value for the real money demand when $Y = Y_f$ and $i = i^*$.

(g2) Using the money market equilibrium, find the implied money supply.

(g3) Using the DD curve found in (e1), find the new expected exchange rate.

(g4) Do prices need to adjust in the long-run?

(g5) Find the expression for the AA curve.

(g6) Was this policy successful in achieving internal balance? What about external balance?

(g7) Explain the adjustment with the help of the AA-DD diagram.

h) Departing, again, from (d), assume that the government wants to fix the nominal exchange rate at $\bar{e} = 0.5$.

(h1) Using the DD curve found in (e1), find the corresponding output level, and then the implied money supply. Is this policy enough to ensure internal balance?

(h2) Suppose that the government decides to launch an expansionary fiscal policy to achieve full employment. Find the value of autonomous spending (\bar{A}) that will ensure this goal.

(h3) Explain the adjustment in the AA-DD diagram. You don't have to derive the expression for the curves, but you will have to include three points in your graph, with the corresponding values for output and the nominal exchange rate: (A) initial equilibrium; (B) equilibrium after the exchange rate is fixed; (C) equilibrium after the change in \overline{A} .