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## The Global Economy II

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# I (4.5)

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

- i. Net International Investment Position
- ii. Feldstein-Horioka Puzzle
- iii. Balassa-Samuelson Effect
- iv. Exchange Rate Overshooting

v. The Trilemma

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# IV (2)

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

- a. In a first-generation model, agents will initiate a speculative attack: (i) after the exchange rate starts depreciating; (iii) at the moment the central banks run out of reserves; (iii) after the central bank runs out of reserves; (iv) all the above.
- b. Suppose that (1 + i)e > (1 + i \*)E(e). In that case, (i) risk-free agents should engage in forward speculation, purchasing domestic currency (ii) there are no arbitrage opportunities; (iii) agents should engage in spot speculation, depositing in the foreign country; (iv) none of the above.
- c. In the short run, a permanent fiscal expansion, (i) increases output under float; (ii) has no impact on the nominal exchange rate under float; (iii) increases output under fix; (iv) all the above.
- d. After pegging to the dollar, the cost of fixing will increase if the trade with the US (i) becomes more intra-industry; (ii) becomes more inter-industry; (iii) decreases uniformly across industries (iv) none of the above.

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### II (13.5)

#### Unless otherwise stated, please present the results with, at most, 2 decimal places.

**II.A.** Consider a one-good, **closed** economy. The representative consumer lives for two periods and has a lifetime utility function given by:  $U = C_1 C_2$ . In period 1, there is a pre-determined amount of output, equal to  $Q_1 = 192$ . As for the second period, there is no exogenous output, but there are investment opportunities, as described by the production function,  $Q_2 = 32\sqrt{K_2}$ , where K depreciates fully after one period.

a) Find:

- (a1) The expression for the PPF.
- (a2) The optimal consumption path
- (a3) The optimal investment in period 1.
- (a4) The autarky interest rate.
- b) Suppose now that the economy opens to international flows, facing the world interest rate of  $r^* = 0\%$  Considering that the NIIP is initially zero, find:
  - (b1) The optimal investment plan.
  - (b2) Output in period 2.
  - (b3) The optimal lifetime wealth.
  - (b4) The optimal consumption path.
  - (b5) The trade balance for periods 1 and 2.
  - (b6) The gross national income for periods 1 and 2.
  - (b7) Compare graphically the outcomes of a) and b). Is the economy better off?
- c) Suppose now that a good harvest causes the first period output to expand to  $Q_1 = 384$ . Still assuming that the economy is open:
  - (c1) Will the optimal investment plan change? Justify your answer.
  - (c2) Find the optimal consumption path.
  - (c3) Find the trade balance for periods 1 and 2.
  - (c4) Find the current account for periods 1 and 2.
  - (c5) Would there be a difference in terms of investment and utility if the economy was closed?

Explain. (*Tip: you don't have to make any further computations*)

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**II.B.** Consider an open economy with sticky prices under a fixed exchange rate regime, where e = E(e) = 1. In this economy, money demand is given by  $m^D = \frac{Y}{5i}$  and full employment output is  $Y_f = 100$ . Consider that  $eB_c^* = 75$ . The interest rate parity holds instantaneously, and the foreign interest rate is equal to  $i^* = 20\%$ . Initially,  $P = P^* = 1$ . The goods market equilibrium is described by the expression: Y = 4 ( $\overline{A} + TB$ ), where  $\overline{A} = 25$ ,  $TB = 5(\theta - 1)$  and  $\theta = \frac{eP^*}{P}$ .

- d) Assuming that the peg is credible:
  - (d1) Derive the DD Curve and find the level of output.
  - (d2) Find the endogenous money supply and derive the AA Curve.

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- (d3) Is there internal balance? And external balance?
- (d4) Represent the AA-DD equilibrium in a graph.
- e) Suppose now that the foreign demand falls **permanently**, such that:  $TB = 5(\theta 2)$ . Considering that the peg is kept:
  - (e1) Derive the short-run DD Curve and find the short-run level of output.
  - (e2) Explain the adjustment in the central bank balance sheet.
  - (e3) Derive the short-run AA curve.
  - (e4) Find the long-run price level and the long-run DD curve.
  - (e5) Determine the long-run money supply and the long-run AA curve.
  - (e6) Is there external balance in the short-run? And in the long-run?
  - (e7) Departing from d), draw the time paths for M and P.

(e8) Departing from (d4), describe the adjustment in the AA-DD framework. Explain the adjustment mechanism, identifying the exogeneous factors that shifted the curve(s).

- f) Suppose now that, after the fall in foreign demand (in e), the central bank decides to credibly change the peg to ensure that the economy immediately returns to full employment.
  - (f1) Find the new value for the fixed exchange rate and derive the new AA curve.

(f2) Describe graphically the adjustment in the money market and the foreign exchange market.

(f3) Departing from (d4), describe the adjustment in the AA-DD framework. Explain the adjustment mechanism, identifying the exogeneous factors that shifted the curve(s).

g) Instead, suppose that, after the fall in foreign demand (in e), the government increases autonomous spending to ensure that the economy immediately returns to full employment.

(g1) Find the new value for  $\overline{A}$  and derive the new DD curve.

(g2) Departing from (d4), describe the adjustment in the AA-DD framework. Explain the adjustment mechanism, identifying the exogeneous factors that shifted the curve(s).

(g3) Compare the outcomes of questions f) and g) in terms of internal and external balance.