

IV (2)

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

1. All else equal, the trade balance in the second period will improve if (i) the productivity of investment increases; (ii) the rate of time preference decreases; (iii) output in the first period increases; (iv) none of the above.
2. A bad harvest today will cause: (i) a fall in investment if the economy is open; (ii) a persistent effect on output if the economy is closed; (iii) an increase in savings today if the economy is open; (iv) all the above.
3. In a two-economy world, where each economy holds 50% of the other country's capital, a recession in the home economy fully matched by an expansion in the foreign economy will deliver: (i) an increase in GNDI relative to GNI in the home economy; (ii) a negative NFIA in the domestic economy; (iii) an increase in the GNDI relative to GDP in the home economy; (iv) none of the above.
4. In the model of currency crisis, the speculative attack occurs because: (i) The break of the peg is not anticipated; (ii) the demand for domestic money will increase; (iii) agents want to prevent capital losses; (iv) all the above.

II (13.5)

II.A. Consider a one-good economy where NIIP is initially zero. The representative consumer lives for two periods and has a lifetime utility function given by: $U = \ln(C_1) + \frac{\ln(C_2)}{1+0.5}$. In both periods there is a pre-determined amount of output, equal to $Q_1 = 200$ and $Q_2 = 180$. Further assume that this economy is closed to capital flows.

- a) Compute (a1) the optimal consumption path and (a2) the autarky interest rate. (a3) Represent graphically.
- b) Suppose now that the economy opens to international flows of capital and that the world interest rate is $r^* = 20\%$. Find out (b1) the life-time wealth, (b2) the optimal consumption path, (b3) the trade balance (for periods 1 and 2), (b4) the current account (for periods 1 and 2), and (b5) gross national income (for periods 1 and 2). (b6) Will the economy be better off than when it was closed? Illustrate with a graph.
- c) Assume now that the world is composed by two economies: the Home Economy, which was analysed in questions a) and b), and the Foreign Economy, which has the following endowments: $Q_1^F = 150$; $Q_2^F = 100$. Representative agents in both economies have the same preferences. Find, **for period 1**, (c1) the current account functions for both economies, (c2) the world interest rate, (c3) the current account for both economies.

II.B. Consider two small open economies with two sectors, a **tradable (T)** and a **non-tradable (N)**. The production functions are given as: $Y_T = 2L_T$ and $Y_N = 2L_N$ for the domestic economy, and, for the foreign economy, as $Y_T^* = 2L_T^*$ and $Y_N^* = 32L_N^*$. Further assume that in both economies each price weights 50% in the consumer price index (the CPI is $P = P_T^a P_N^{1-a}$), that the prices abroad are fixed at $P^* = \frac{1}{4}$ and at $P_T^* = 1$, and that the price of foreign currency in terms of domestic currency is $e = 1$.

- d) Assuming that firms maximize profits find: (d1) the labour demand of each of the sectors in the domestic and in the foreign economy; (d2) the domestic price of tradables; (d3) the nominal wage rate in both economies; (d4) the price of non-tradables in the domestic economy; (d5) the consumer price index in the domestic economy; (d6) the real exchange rate.

- e) Assume now that there was an exchange rate depreciation in the home economy to $e' = 2$. Find the impacts on the home economy, namely: (e1) the price of tradables; (e2) the nominal wage rate; (e3) the price of non-tradables; (e4) the consumer price level; (e5) the real exchange rate; (e6) would the absolute and/or relative PPP theories apply in this case? Justify. (e7) are the workers in the domestic economy better off after this shock? Justify.

- f) Departing from d), compare the two economies in terms of (f1) purchasing power of workers and (f2) nominal wages expressed in the same currency unit. (f3) Explain the difference in the results.

II.C. Consider an economy under float exchange rate, where money demand is given by $m^D = \frac{Y}{i}$,

where i is the nominal interest rate. The foreign price level is $P^* = 2$, the real interest rate is 5%, both the Fisher principle and PPP hold each moment in time, and the economy is always at full employment, with $Y^f = 1\,000$. Initially, the money supply is constant and equal to: $M = 20\,000$.

- g) Find out the money market equilibrium, quantifying: (g1) the real money demand; (g2) the price level; (g3) the exchange rate; (g4) the velocity of money. (g5) describe the equilibrium in a graph.

- h) Due to a liquidity crisis, there's a shift in real money demand to $m^D = \frac{Y}{0,8i}$. (h1) without a change in money supply, what would be the implications for the price level and for the exchange rate? (h2) Assuming instead that the central bank adjusts the quantity of money to ensure price stability, what will be the required money supply? (h3) Compare the two cases, describing the adjustment with the help of a graph.

- i) Departing from g), imagine that the central bank wants to finance a "once-and-for-all" government deficit by extending 5 000 in credit. Analyse the central bank's ability to stick with price stability in the two following scenarios, by quantifying and explaining carefully, showing the evolution in the central bank's balance sheet: (i1) the central bank has no foreign reserves; (i2) the central bank has the following amount in reserves: $eB_c^* = 7500$. (i3) based on the results from questions i1 and i2, justify why it is important for the central bank to hold foreign reserves. You should look at the impacts on the nominal exchange rate in each of the cases.

Number:

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(Draft Paper)