Macroeconomic Analysis

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Midterm (Oct 17, 2014)

GROUP I (4.5 val)

Define **three** of the following concepts:

(i) Liquidity trap
(ii) Destabilizing deflation
(iii) The Lucas critique
(iv) The test of Campbell and Mankiw
(v) Rational expectations.

Group II (13.5 val)

Choose **three** of the following exercises

II.1 Consider an economy where the aggregate demand and the aggregate supply are given, respectively, by M=PY and $Y = P/P^e$. In this economy, money has been constant at M=1.

a) (Theory) Explain briefly the theories underlying the two equations.
b) (Adaptive expectations). Assume that workers formed their expectations according to $P^e = P_{-1}$. Describe the short-term equilibrium after a monetary expansion from M=1 to M=9. With the help of a graph, explain the subsequent adjustment of the economy to the long run equilibrium.
c) (Rational expectations) Analyse the implications of a change from M=1 to M=9, assuming that the policy was: (c1) anticipated; (c2) not anticipated. With the help of a graph, explain the adjustment of the economy in the years that followed in both cases. What are the implications for the duration of the business cycle?

II.2. Consider a small economy able to borrow or lend in the international markets at the interest rate $r^* = 0$. The lifetime utility function of the representative consumer is given by $U = u(C_1) + u(C_2)$. Initially, current and future GDP are known with certainty, with $Q_1 = Q$ and $Q_2 = Q + \gamma$, where of γ is a constant parameter.

d) (Optimal Consumption, deterministic case) Find out the optimal consumption path as a function of γ. Illustrate graphically the optimal choices.
e) (Trade Balance, deterministic case) Find out the expression for the TB_1 as a function of γ. In which case will the country run a trade deficit? Explain the intuition.
f) (Trade balance, Uncertainty) Now assume that at the time of the current consumption' decision, future output was uncertain, with $Q_2 = Q + \varepsilon$ with probability ½ and $Q_2 = Q - \varepsilon$ with probability ½. Without making any calculation, how would you classify consumers in this economy, if you knew that: (f1) TB_1 was zero; (f2) positive; (f3) negative? What is the key variable determining the TB outcome? Would consumption be smoothed in any of these cases?

II.3 Consider an endowment economy closed to private capital flows. In this economy, GDP is constant at $Q_2 = Q_1 = 750$, government spending and taxes are given by $G_1 = T_1 = 250$ and $G_2 = T_2 = 350$, and the lifetime utility function of the representative consumer is given by $U = \ln C_1 + \frac{\ln C_2}{1+\rho}$, with $\rho = 0.125$

g) (Equilibrium interest rate): Compute the private consumption in each period, as well as the equilibrium interest rate in this economy. Explain the intuition.
h) (Tax cut, government bonds sold domestically) Suppose that the government decided to cut taxes today by $\Delta T_1 = -100$, in exchange for $\Delta T_2 = 90$ next period. Would this policy have any impact on the consumption pattern? Explain.
i) (Tax cut, borrowing abroad) Suppose instead that the tax cut in period 1 was financed by an international loan at $r^* = 0$, so that the trade balance turned negative in period 1 ($TB_1 = -100$). Quantify the impact of this policy on private consumption in period 1 and in period 2, as well as on the interest rate. Would consumers be better off? Explain the intuition.

II. 4 Consider an economy where the preferences of the representative consumer are given by $U = \ln C_1 + \ln C_2$ and the production function is given by $Q_2 = 10K_2^{1/2}$. It is also known that $B_0^* = -52$, $Q_1 = 100$, and $r^* = 0$.

j) (Optimal investment) Assuming that the economy is open, find out the optimal capital stock, as well as the corresponding NPV and lifetime wealth (after investment).
k) (Open) Find out the optimal consumption pattern, as well as the trade balance, sticking with the assumption of openness to capital flows.
l) (Sudden stop) (l1) Assuming first that all initial liabilities matured at the beginning of period 1, describe the equilibrium corresponding to a sudden loss in access to international financial markets at the beginning of period 1. In particular, describe the impact of the "sudden stop" on consumption, interest rate and on the current account. Compare with k) using a graph. (l2) If in alternative all external debt matured at the beginning of period 2, would this make any difference? Conclude.

GROUP IV (2 val)

Choose **one** of the following questions:

1. Referring to the metaphor of the Great Capitol Hill Baby-sitting Co-Op, explain the Paradox of Thrift. In that particular example, how was the crisis mitigated? Relate with the schools of thought and with the current juncture.

2. According to Ben Bernanke, what are the main candidate explanations for the US large current account deficit in the late 1990s? Which of these explanations he said was more likely? Was the nature of the external deficits different in the 1980s? Elaborate.