

PRELIMINARY EXAMINATION FOR THE Ph.D. DEGREE

Instructions: Answer any 4 of the following questions.

Question 1: Intertemporal Model of the Current Account

Consider a representative agent problem for a small open economy. The country receives an exogenous endowment of the single type of good (Y), and the country can save only in the form of a real riskless bond (B) paying a fixed return $r = \frac{1}{\beta} - 1$.

Government spending (G) and investment (I) are also exogenous.

$$\text{Max } E_t \sum_{s=t}^{\infty} \beta^{s-t} U(C_s)$$

s.t.

$$B_{s+1} - B_s = Y_s + rB_s - C_s - I_s - G_s \equiv CA_s$$

$$\text{where } U(C_t) = C_t - \frac{1}{2} C_t^2, \quad 0 < C_t < 1$$

- a) Set up a dynamic programming problem and derive the first-order conditions. Solve for the current account as a function of changes in the exogenous variables. Interpret this briefly.
- b) Discuss what would happen to the current account in the present period in this model under the following scenarios (give magnitudes as well as the direction of changes in the current account):
 - i) a purely temporary fall in output endowment by amount X this period.
 - ii) a permanent rise in investment expenditures by X .
 - iii) a permanent rise in government purchases by X that is anticipated to begin **next** period.
- c) Briefly discuss how well this model can explain why the current account tends to be countercyclical.

Question 2: The Role of Nontraded Goods

A common approach to explaining several puzzles in open economy macroeconomics has been to restrict the degree of openness, such as by assuming some goods are

nontradable. Discuss how the presence of nontraded goods can help explain each of the following puzzles. In each case discuss what the puzzle is, and how nontraded goods could be a solution.

- a) Consumption correlation puzzle
- b) Portfolio diversification puzzle
- c) Failure of the present value model of the current account
- d) Relative price puzzle.

Question 3: Purchasing Power Parity

- a) In 3-4 paragraphs, summarize the main methods and conclusions of the literature testing purchasing power parity (PPP). Cite key papers in this literature.
- b) Explain briefly how the "Equilibrium Approach to Exchange Rates" can explain failures in PPP.
- c) Discuss how sticky price models can explain failures in PPP. Discuss whether you prefer this explanation to that in part(b) above or not.

Question 4: Asian financial crisis

The Asian financial crisis caused (almost) all currencies in East Asia to depreciate significantly against the US \$, and output growth in 1998 to be mostly negative.

- (a) Explain the mechanics of the collapse according to the competing explanations of the crisis. (Hint: If the system had collapsed because of internal weaknesses, what were the first components that cracked? If the system had collapsed because of external shock, then what was the exogenous shock and the propagation mechanism?)
- (b) Evaluate the merits and weaknesses of two competing explanations of the crisis.
- (c) Propose eight specific steps that would prevent, or reduce the blunt of, future crises.

Question 5: Exchange rate management

Economists generally believe that prices should be determined by supply and demand without government intervention. But yet, there are quite a number of prominent economists who advocate that the government intervene actively in the foreign exchange market to set the price of its currency. Some would go as far to argue that, if necessary, capital controls should also be used to allow the government to set the exchange rate.

- (a) Under what technical condition is capital control a necessary instrument for the central bank to set the exchange rate?
- (b) State and evaluate the case for a fixed exchange rate regime. (Hint: Be sure to include a discussion of the optimum currency area literature, and the empirical evidence about its relevance.)
- (c) Show analytically that speculative mania is compatible with rational expectations.

Question 6 (2 parts): Exchange Rate Dynamics

Part 1: Assume rational expectations and set up a simple dynamic model to show graphically the exchange rate consequences of the following scenario:

- (a) The domestic money supply is expected to be decreased by 10 percent one period from now.
- (b) The domestic money supply is expected to be decreased by 10 percent 100 periods from now.
- (c) Assume scenario (b), but agents find out after 100 periods that the central bank decided at the last moment to keep the domestic money supply unchanged.

Part 2: Provide one analytical explanation for why exchange rate movements for low inflation countries have tended to exhibit random walk characteristics.