Econ 0200   University of Pennsylvania

Final Exam

Instructions

1. This quiz is 120 minutes long, from 18:00 to 20:00.

2. This exam is closed note and book.

3. You may use a calculator. The use of cellphone or laptop calculators is not allowed.

4. This quiz has a total of 100 points and eight pages (including this one), please check you are not missing any page.

5. In all the numerical questions, in order to get full credit you must show your work.

6. Please answer each question in the space provided below the question (you can also use the back of each sheet to answer the question). Towards the end of the exam there are two additional blank pages you can use to answer the questions, but please indicate clearly where each question is answered.

7. There is a formulary sheet at the end of the exam. You can detach it and use it to solve the problems. Please do not detach any other sheet from the exam.

Name: _____

My signature certifies that I have complied with the University of Pennsylvania's Code of Academic Integrity in completing this examination.

Please sign here _____ Date _____

Short Answer Questions (5 Points Each)

Answer FIVE out of the following seven questions. If you answer more than five questions I will deduct ten points from your final score.

1. (5 Points) Explain the Catch-Up Theory.

2. (5 Points) Imagine an investor is considering in investing in her local (Economy A) or a foreign one (Economy B). Which variables should this person consider in order to make a decision? Explain why these variables are important.

3. (5 Points) What is the real exchange rate and what does it aim to capture?

4. (5 Points) What is the UIP? Explain it.

5. (5 Points) Why do we say that moneraty policy looses its effectiveness under a fixed exchange rate regime?

6. (5 Points) Which variables affect imports according to the Mundell-Fleming model? Explain why these variables affect exports.

7. (5 Points) What is the Marshall-Lerner condition? Explain it.

Numerical Answer Questions

1. (25 Points) Consider the Mundell-Fleming model between two economies: economy A (local economy), and economy B (foreign economy). The exchange rate between these economies is flexible.

   (a) (15 Points) Suppose that the economy is currently in equilibrium. What will be the effect on GDP, consumption, investment, imports, exports, exchange rate, real exchange rate, trade balance, interest rate, taxes, and transfers if the Central Bank decides to conduct an open market operation in which it buys bonds? Make a graph.

   (b) (10 Points) Describe the effect on the same variables of this same policy (an open market operation in which the Central Bank buys bonds) if the exchange rate is fixed. Make a graph.

2. (25 Points) Consider the following data from Mexico (local economy) and the US (foreign economy):

	Data
Nominal GDP Mexico	144
Real GDP Mexico	120
Nominal GDP US	364
Real GDP US	260
Exchange Rate	0.05
Expected Exchange Rate	0.55
Interest Rate Mexico	5%
Interest Rate US	3%

(a) (5 Points) Which country has a higher price level?

(b) (3 Points) Do investors expect the Mexican Peso to appreciate or depreciate?

(c) (5 Points) Calculate the real exchange rate between these economies. Interpret this number in terms of PPP.

(d) (5 Points) If you were an investor, in which economy should you invest? Explain your answer.

(e) (7 Points) Now lets assume that the expected exchange rate is unknown, but we know that the UIP condition holds between these countries. Find the expected exchange rate that makes the UIP condition hold.

3. (25 Points) Consider an economy in which people save 10% of their income. In this economy the labor share is 1/2 and the TFP is 625. On the other hand, depreciation is 7% and the population growth is 3%. Consider Solow's model.

(a) (10 Points) Find the steady state capital as well as the steady state output. Make a graph.

(b) (8 Points) What will happen to GDP per capita, capital per capita, and the growth rate of these variables if the population growth rate increases? Make a graph.

(c) (7 Points) What will happen to GDP per capita, capital per capita, and the growth rate of these variables if the TFP of this economy increases? Make a graph.

Formulary

$$i_t = i_t^\star - \hat{E}_{t+1}^e$$

$$\hat{E}_{t+1}^e = \frac{E_{t+1}^e - E_t}{E_t}$$

$$Y_t = C_t + I_t + G_t + NX_t = C_t + I_t + G_t + X_t - Im_t$$

$$Im_t = \alpha_1 Y_t + \alpha_2 \epsilon_t$$

$$X_t = \beta_1 Y_t^\star - \beta_2 \epsilon_t$$

$$Tr_t = SS_t + u(Y_{N,t} - Y_t)$$

$$T_t = \tau_t Y_t$$

$$I_t = sY_t - dr_t + NX_t$$

$$C_t = a + bY_{D,t} = a + (1-s)Y_{D,t}$$

Long-Run Growth Theory

$$Y_t = A_t K_t^\alpha L_t^{1-\alpha}$$

$$w_t = (1-\alpha)\frac{Y_t}{L_t}$$

$$r_t = \alpha\frac{Y_t}{K_t}$$

$$g_Y = g_A + \alpha g_K + (1-\alpha)g_L$$

$$IMN = (\delta + g_n)k_t$$

$$y = Ak^\alpha$$