Endterm Exam
Macro Economics

Institute for Financial Management & Research (Batch: 2018-20)

13 December, 2018

Maximum Points: 80 **Duration**: 150 minutes

Instructions and Advice:

- This exam accounts for 40% of your final grades.
- The question paper is divided in two sections- Part A and Part B.
- You need to answer 5 questions in all. [2 from Part A, and 3 from Part B]
- You can choose between Question 1 and Question 2, and between Question 3 and Question 4.
- In case you choose to answer Question 1 as well as Question 2 (by accident or by design) in the exam, the first question that you attempt will be evaluated. Same goes for Questions 3 and 4.
- All other questions are compulsory.
- Please be brief and precise in your answers. Unnecessarily lengthy answers will attract penalty.
- Label all graphs and figures clearly.
- At no point of this examination you are allowed to ask clarificatory questions. Make reasonable assumption if you have doubts and proceed to answer the question.
- You are **allowed** to use non-scientific calculator in the exam.
- There is plenty of time. Use it wisely, do not rush.
- All the best! **:)**

Part A

1. (10 points) *Consider an economy with flexible exchange rates. Let UIP stand for the uncovered parity condition.*
   (a) (5 points) In an $IS - LM - UIP$ diagram, show the effect of an increase in foreign output (Y^*) on domestic output (Y). Explain briefly.
   (b) (5 points) In an $IS - LM - UIP$ diagram, show the effect an increase in the foreign interest rate (i^*) on domestic output. Explain briefly.

   Or

2. (10 points) Use the $IS - LM$ model to determine the impact on stock prices of each of the given policy changes. Illustrate your answer graphically.
   (a) (5 points) An unexpected expansionary monetary policy with no change in fiscal policy.
   (b) (5 points) A fully expected contractionary monetary policy with an unexpected expansionary fiscal policy.

3. (10 points) *For each of the changes in expectations, determine whether there is a shift in the IS curve, the LM curve, both curves, or neither. In each case, assume that expected current and future inflation are equal to zero and that no other exogenous variable is changing.*
   (a) (5 points) an increase in expected future taxes.
   (b) (5 points) a decrease in expected future income.

   Or

4. (10 points) *Suppose a share is expected to pay a dividend of ₹1,000 next year, and the real value of dividend payments is expected to increase by 3% per year forever.*
   (a) (3+3 points) What is the current price of the stock if the real interest rate is expected to remain constant at 5%? at 8%?
   Now suppose that people require a risk premium to hold stocks.
   (b) (2 points) Redo the calculations in part (a) if the required risk premium is 8%.
   (c) (2 points) Redo the calculations in part (a) if the required risk premium is 4%.

Part B

5. (20 points) *Suppose that every consumer is born with zero financial wealth and lives for three periods: youth, middle age, and old age. Consumers work in the first two periods and retire in the last one. Their income is $5 in the first period, $25 in the second, and $0 in the last one. Inflation and expected inflation are equal to zero, and so is the real interest rate.*
   (a) (5 points) What is the present discounted value of labour income at the beginning of life? What is the highest sustainable level of consumption such that consumption is equal in all three periods?
   (b) (5 points) For each age group, what is the amount of saving that allows consumers to maintain the constant level of consumption you found in part (a)?
   (c) (5 points) Suppose there are n people born each period. What is total saving in the economy? Explain.
   (d) (5 points) What is total financial wealth in the economy?

6. (20 points) *Suppose that Mexico wishes to fix its exchange rate relative to the U.S. dollar.*
   (a) (5 points) If the Federal Reserve raises interest rates, what would happen to the peso-dollar exchange rate in the absence of any change in Mexican interest rates?
   (b) (10 points) Suppose Mexico wants to keep its interest rate fixed no matter what, maintain a fixed exchange rate, and allow open capital markets. What will happen when the United States raises interest rates?
   (c) (5 points) Summarize the policy "buttons" that are working for Mexico in this scenario.

7. (20 points) *Consider an open economy in which the real exchange rate is fixed and equal to one. Consumption, investment, government spending, and taxes are given by*

$$C = 10 + 0.8(Y - T), I = 10, G = 10, \text{ and } T = 10$$

   Imports and exports are given by

$$IM = 0.3Y \text{ and } X = 0.3Y^*$$

   where Y^* denotes foreign output.
   (a) (5 points) Solve for equilibrium output in the domestic economy. What is the multiplier in this economy? If we were to close the economy what would the multiplier be? Why would the multiplier be different in a closed economy?
   (b) (5 points) Assume that the foreign economy is characterized by the same equations as the domestic economy (with asterisks reversed). Use the two sets of equations to solve for the equilibrium output of each country. What is the multiplier for each country now? Why is it different from the open economy multiplier in part (a)?
   (c) (5 points) Assume that the domestic government, G, has a target level of output of 125. Assuming that the foreign government does not change G^*, what is the increase in G necessary to achieve the target output in the domestic economy? Solve for net exports and the budget deficit in each country.
   (d) (5 points) Suppose each government has a target level of output of 125 and that each government increases government by the same amount. What is the common increase in G and G^* necessary to achieve the target output in both countries? Solve for net exports and the budget deficit in each country.