

# International Macroeconomics Review Questions II

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April 23, 2013

## Modules

1. Consider the market for Japanese Yen in terms of U.S. dollars. What causes the supplies of the two currencies to come onto the foreign exchange market? How are these supplies related to the demands for the two currencies on the market? What is the process by which equilibrium is established?
2. Explain the difference between arbitrage and speculation on the foreign exchange market. Can one profit from these activities on the basis of information one reads in the financial section of the Toronto Globe and Mail in the morning.
3. What is the forward exchange rate? Why do forward transactions occur? Does the forward exchange market reduce or eliminate risk, or does it simply transfer it? In the latter case, who ends up bearing the most risk? Is any compensation received for bearing that risk?
4. How does one speculate in the forward exchange market? Is arbitrage possible in that market?
5. If the forward price of the Canadian dollar in terms of the U.S. dollar is above the current spot price, does this tell us anything about what people expect will happen to the spot rate between now and the time the forward contract matures? What is the efficient markets condition?
6. What does it mean to say that expectations are rational? Does this imply that markets are efficient?
7. Explain the difference between foreign exchange risk and country risk on foreign asset holdings.
8. Explain what is meant by the interest rate parity condition? Does it arise out of speculation or arbitrage? What is meant by covered interest parity?
9. What constraint do the efficient market and interest parity conditions combined impose on a government's ability to manipulate domestic interest rates?
10. What is the real exchange rate?
11. What constraint do the efficient market and interest parity conditions combined impose on the government's ability to manipulate domestic real interest rates?
12. Explain the fact that Canada's real and nominal exchange rates vs. the U.S. have varied very substantially over time while the forward exchange rate has typically been little different from the current spot rate? Is today's spot rate a better predictor of tomorrow's spot rate than is today's forward rate? Why or why not?
13. Do countries that have typically had high inflation rates also have high nominal interest rates? Why?
14. Does the fact that forward exchange rates are not good predictors of future spot rates in countries that have experienced little inflation imply that asset holders are not behaving rationally?

15. Explain the difference between current and capital balance of payments transactions? What is the balance of indebtedness?
16. Explain the role of desired vs. actual receipts and payments, and autonomous vs. induced receipts and payments in balance of payments analysis.
17. When the government is fixing the exchange rate, what are the ways in which it can cope with balance of payments disequilibrium? Does a balance of payments deficit mean that the stock of domestic official foreign exchange reserves must be declining?
18. Show that the balance of payments is a component of the balance in the national accounts?
19. Explain the following two equations.

$$Y = C + I + B_T + DSB \quad (1)$$

$$NCO = B_T + DSB \quad (2)$$

$$S - I = B_T + DSB = NCO \quad (3)$$

Are changes in government exchange reserves included in the variables in the above equations.

20. Starting with the equilibrium equation

$$S - I = B_T + DSB \quad (4)$$

develop and analyse the mechanism by which this equilibrium is maintained. In particular, show what determines savings and investment and the balance of trade. Include shift variables as determinants in your equations. Carefully distinguish between a Keynesian case where the price level is fixed and a classical one where it is flexible. What variables adjust to maintain equilibrium in the two cases?

21. What factors determine the full-employment equilibrium real exchange rate? How are the real exchange rate and current account balance affected by a shift of world investment into the domestic economy? How are they affected by the imposition of tariffs? Will a shift of world demand towards domestic output improve the current account balance?
22. When the price level is fixed and there is less-than-full-employment, how do the equilibrating adjustments in the question above change? How is your answer affected by an assumption that the nominal exchange rate is also fixed?
23. Is it reasonable to expect that a negative correspondence between real the real exchange rate and the current account balance should be present in observed data?
24. Show that equilibrium in a small open economy under fixed exchange rate is determined by the world interest rate and the condition of goods market equilibrium. In your answer, write

down the equations of stock and flow equilibrium. Show that the level of the nominal money supply is endogenously determined and that monetary policy is ineffective.

25. How does the analysis in the previous question change when we allow for price level flexibility and full employment?

26. Explain what is meant by high-powered money or base money. Show how the stock of money in circulation expands by some multiple of an expansion in the stock of base money. What determines this money multiplier? Can the Central Bank control the stock of money as easily as the stock of base money?

27. Explain the difference between the domestic and foreign source components of the stock of base money. Why does the foreign source component exist?

28. Derive the IS and LM curves. Why might we add a horizontal ZZ line? Show that under a fixed exchange rate and less-than-full-employment the level of output will be determined by the IS curve and the ZZ line with the LM curve adjusting endogenously. Now assume price flexibility and full-employment and show that the price level will be determined by the IS curve and ZZ line when the exchange rate is fixed and that the LM curve will again adjust endogenously to pass through the IS-ZZ intersection. Can monetary policy determine the price level under these conditions?

29. Show that in the above case the government can control only the stock of reserves, and not the money supply, by adjusting the stock of base money.

30. Show that under flexible exchange rates, the price level, and the output level under less-than-full-employment, are determined by the intersection of the LM curve and ZZ line, with the IS curve adjusting endogenously as a result of real exchange rate movements to pass through the LM-ZZ intersection. Will monetary policy work under flexible exchange rates? Will fiscal policy work under these conditions? How does the adjustment process differ under full-employment as opposed to less-than-full-employment?

31. Show that when private residents are free to buy and sell foreign assets—that is, when there is international capital mobility—balance of payments equilibrium is entirely a monetary phenomenon.

32. Show that the domestic authorities need never abandon a fixed exchange rate because their foreign exchange reserves are declining to zero or unacceptable levels — that is, that losses of reserves cannot cause a balance of payments crisis.

33. Show that under a fixed exchange rate movements in the equilibrium real exchange rate will involve equivalent movements in the domestic price level or, if the latter is fixed, changes in the levels of output and employment.

34. Under a fixed exchange rate, can the authorities sterilize the effects of changes in the stock of foreign exchange reserves on the money supply?

35. The common view in the historical literature is that monetary policy operates through changes in domestic interest rates. Is this true under international capital mobility?

36. Outline the basis for standard Keynesian fiscal policy in a closed economy. Why does a fiscal expansion lead to an expansion of output and employment?

37. Show that in a world where capital is internationally mobile, fiscal policy works under fixed exchange rates but not under flexible rates in a small open economy. How does this compare with the workings of monetary policy?
38. What would be the fiscal effect of a tax cut or government expenditure increase, that is widely viewed as temporary, lasting only until the recession is over?
39. Explain what is meant by Ricardian Equivalence. What limitations does it impose on fiscal policy? How do these limitations depend on the life-span of individuals? What role do liquidity constraints on human capital play in offsetting these limitations? Does it matter whether the associated government tax and expenditure policy is regarded as permanent or transitory?
40. For government expenditure policies to be fiscal effective, the government must produce nothing of value with the additional expenditure. True or false, explain!
41. Analyse the effect of monetary policy in a big country on its own output and employment and price level? Do the effects depend on whether a nearby small country fixes its exchange rate with respect to the big country or lets it float?
42. Analyse the effect of fiscal policy in a big country on its own output and employment and price level? Do the effects depend on whether a nearby small country fixes the exchange rate or lets it float?
43. Explain how the small country's output and employment and prices respond to a positive monetary shock in the big country when the small country adopts a fixed exchange rate with respect to the big country? Then do the analysis for a situation where the exchange rate is allowed to float. How can the small country respond in these two situations?
44. Explain how the small country's output and employment and prices respond to a positive fiscal shock in the big country when the small country adopts a fixed exchange rate with respect to the big country? Then do the analysis for a situation where the exchange rate is allowed to float. How can the small country respond in these two situations?
45. Consider a situation of two large equal-sized countries on a gold standard, with the gold prices of both countries' currencies the same. Suppose an large amount of gold is discovered in one of the countries. Analyse the short-and-long-run effects of this on the levels of employment and prices in the two countries.
46. In the gold standard case above, assume that as a result of a previous war, one of the countries is obligated to give a substantial fraction of its domestic gold stock to the foreign country. Analyze the short-and-long-run effects of this on the levels of employment and prices in the two countries.
47. The standard price-specie-flow-mechanism argues that an excess supply of gold in one country causes its price level to rise relative to the price level in the other country, making domestic goods more expensive, with the result that domestic residents purchase goods abroad instead of at home. These purchases are made with gold, causing the gold to flow abroad, with the ultimate result that price level equality will eventually be reestablished. Does this theory make any sense? What assumptions would we have to impose to validate its conclusions in the answers to questions 45 and 46 above?

48. Suppose we have a world consisting of two countries of equal size, each with their own currency. Suppose that the exchange rate between the two currencies is flexible and that one country expands its money supply. What will be the effects on its output and employment and price level and on output and employment and the price level in the other country?

49. Now assume in the question above that the exchange rate between the two countries is fixed by the country not expanding its money supply. What will be the effects on output and employment and the price levels of the two countries in this situation?

50. In the two-big-country case above, suppose that the country fixing its exchange rate expands its domestic money supply. What effect will this have on output and employment and prices in the two countries? How would your answer change if the country fixing the exchange rate holds its foreign exchange reserves in the other countries money rather than its government bonds? Would the result be dependent upon the relative size of the expanding country?

51. Suppose that, in the above two-country case, the country not fixing the exchange rate conducts a fiscal expansion. Analyse the effects on output and employment and prices in the two countries? How will the results change if the exchange rate is allowed to float?

52. Now suppose that, in the two-big-country case, the country fixing the exchange rate conducts a fiscal expansion. Analyse the effects on output employment and prices in the two countries?

### Advanced Topics

1. Explain in words how we establish the conditions of inter-temporal equilibrium, outlining the origins and meaning of the following three equations and the role of each parameter in these equations.

$$Y = [\hat{m}(1 - \gamma) - \delta] K \quad (5)$$

$$g_c = \frac{(1 + r)(1 - \tau)}{1 + \varpi} - 1 \quad (6)$$

$$r = \frac{\hat{m}(1 - \gamma) - \delta}{1 + 2\alpha g_k} \quad (7)$$

2. What is the advantage of modelling aggregate full-employment output as dependent on a broadly defined capital stock rather than simply as a Cobb-Douglas or CES function of the quantities of labour and capital?

3. Show how full-employment output depends on the allocation of broadly-defined capital between its alternative forms. How does technological change occur in this model. How is output affected by the quantity of labour?

4. Show how the growth rate of output (under continuous full-employment conditions) and the real interest rate are simultaneously determined by answering the following questions.

a) How is the interest rate affected by the growth rate?

- b) How is the growth rate affected by the interest rate?
  - c) What are the fundamental determinants of the steady-state growth rate?
5. How is the growth of aggregate income affected by population growth? What determines the growth rate of per capita income?
  6. What are the institutional conditions that will cause a community to remain in absolute poverty, generation after generation?
  7. What is the function of liquidity and how do we define it? How do we add it to the model? How do we obtain the demand function for liquidity? Explain in words, allowing yourself at most two equations.
  8. Will a reduction of the tax on domestic savings in a small open economy lead to increased steady-state growth of domestic income and output? How will the result change if the country is a significant fraction of the world economy?
  9. Explain why our GG curve is negatively sloped and why our AA curve is positively sloped. What do they imply about stock and flow equilibrium? Is a multiplier effect involved? Show how equilibrium is determined in a small open economy under fixed and flexible exchange rates.
  10. How do our GG and AA curves differ from the standard IS and LM curves?
  11. What are the factors leading to short-run shifts of the GG and AA curves and what is the mechanism by which they shift the curves? How do monetary and fiscal policy have their effects?
  12. Will an improvement of resource allocation in production in a closed economy lead to increased steady-state growth of domestic income and output? Will the same be true of an open economy comprising half the world? What will be the result when the economy is tiny?
  13. Assume from now on that we have more than one country in the world and that all countries produce the same output good. What do we add to our model to analyse the effects of shifts in GG and AA to incorporate the fact that the economy is a small open economy as compared to a closed economy.
  14. How can we incorporate into the analysis the assumption that countries produce different goods while maintaining the assumption that capital goods are produced at constant cost in terms of consumer goods in each of the separate countries?
  15. What is the real exchange rate and how is it affected by the fact that countries produce different output goods? Is a distinction between traded goods and non-traded goods useful? Can you explain the well-known fact that traded goods have different prices, measured in the same currency, in different countries?
  16. Would you expect richer countries to have higher real exchange rates than poorer ones? How could this happen if world demand shifts onto the outputs of countries whose outputs are cheaper because of lower real exchange rates? How does this relate to the work of Balassa and Samuelson?
  17. Explain how monetary policy works in a small open economy operating alternatively under fixed and flexible exchange rates. Does monetary policy in small countries operate through central bank induced changes in interest rates?

18. Explain how fiscal policy works in a small open economy operating alternatively under fixed and flexible exchange rates.
19. Can the government of an open economy improve the current account by cutting tariffs or subsidizing exports?
20. Does a bumper wheat crop in Canada lead to an improvement in the current account balance?
21. Will an increase in the world price of oil cause the current account balance of a small oil-producing country to improve? Will it reduce that country's balance of payments deficit under a fixed exchange rate?
22. Are balance of payments crises caused by insufficient foreign exchange reserves? What are the causes of balance of payments crises? What determines a country's current account balance? What determines whether or not its balance of payments is in equilibrium?

### **The Final Module**

1. Explain what is meant by foreign exchange rate overshooting and why it arises. Is it likely to occur?
2. It is commonly believed that the monetary authorities in small- and big-open economies conduct monetary policy by manipulating their domestic interest rates? Is this true?
3. If overnight interest rate movements induced by the monetary authorities correctly indicate future expansion or contraction of monetary policy do they result in appropriate movements in market interest rates?
4. Does the purchasing-power-parity theory make any sense? Explain why or why not.
5. Describe the meaning of and basis for the policy irrelevance argument. Does it make any sense for governments to conduct short-term monetary policy? Does it depend on whether they have more information than the private sector has about future conditions? Is it consistent with rationality of expectations?