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question paper

Student Number: _____

Student Name: _____

Section: _____

Wilfrid LAURIER UNIVERSITY

Department of Economics

EC349 – International Finance

Section A and B

Suggested Solutions

Midterm Examination

October 21, 2008

Instructor: Sharif F. Khan

Time Limit: 1 Hour 15 Minutes

Instructions:

Important! Read the instructions carefully before you start your exam.

Mark your selections for **PART A** on the multiple choice answer card in PENCIL. If you make changes, be sure to erase completely. Please record your name, student number and class section on the multiple choice answer card. Hand in the card inside your answer booklet.

Write your answers for **Part B** and **Part C** in the booklet provided. Please record your name, student number and class section on the answer booklet and on the exam question paper. Hand in the exam question paper inside the answer booklet.

Marking Scheme:

Part A [30 marks] TWENTY multiple-choice questions – 1.5 marks each

Part B [10 marks] One of Two True/ False/Uncertain questions – 10 marks each

Part C [20 marks] ONE problem solving question

Calculators:

Non-programmable calculators are permitted

Part A**Multiple-Choice Questions****[30 Marks]**

Each question is worth 1.5 marks. There is no negative marking for wrong answers.

1) A

2) C

3) E

4) E

5) C

6) A

7) C

8) D

9) B

10) E

11) B

12) C

13) E

14) D

15) C

16) C

17) C

18) E

19) C

20) A

Part B

[10 marks]

Answer one of the following two questions in the answer booklet.

Explain why the following statement is True, False, or Uncertain according to economic principles. Use diagrams and/or numerical examples where appropriate. Unsupported answers will receive no marks. It is the explanation that is important.

B1.

In the long-run, under the flexible-price monetary approach, a permanent increase in the future rate of U.S. nominal money supply growth leads to a decrease in U.S. interest rates and the price level, and results in an appreciation of the dollar against the euro. [Diagrams Required]

False

In the long-run, under the flexible-price monetary approach, a permanent increase in the future rate of domestic money supply growth leads to an increase in U.S. interest rates and the price level, and results in a depreciation of the dollar against the euro.

See Appendix to Chapter 15 of the textbook (pages 417-419 of the 8th edition) for the explanation and graph.

B2.

According to the general model of long-run exchange rates which accounts for possible deviations from PPP by adding the real exchange rate as an additional determinant of the nominal exchange rate, an increase in the relative demand for the U.S. products leads to a nominal depreciation of the dollar against the euro in the long run. [Diagrams Required]

False

According to the general model of long-run exchange rates which accounts for possible deviations from PPP by adding the real exchange rate as an additional determinant of the nominal exchange rate, an increase in the relative demand for the U.S. products leads to a nominal appreciation of the dollar against the euro in the long run.

See Figure 15-4 (shift the RD curve to the right to show a decrease in q) and Pages 407 and 408 of the textbook (8th edition) for the explanation and graph.

Part C**Problem Solving Questions****[20 marks]**

Answer the following question in the answer booklet.

Read each part of the question very carefully. Show all the steps of your calculations to get full marks.

C1.

Use the asset approach to exchange rate determination discussed in class to answer the following questions. The interest rate on euro denominated assets maturing in one year is 11% and the interest rate on comparable Canadian dollar denominated assets is 6%.

- I. Consider two possible expectations for the direct spot exchange rate between the Canadian dollar and the euro (Canadian dollars per euro) in one year: (1) the spot rate will fall by 10 Canadian cents or (2) the spot rate will rise by 6 Canadian cents (note that these changes are in absolute levels, *not* in percentage terms). Determine the current equilibrium spot rate under each scenario. Explain which expectation for the future spot rate makes sense, justify your answer, and provide economic intuition for your result. [8 marks]**

Consider Europe as a foreign country and Canada as a home country. Recall that uncovered interest parity (UIRP) can be written as follows:

$$R_{\$} = R_{euro} + \frac{E_{\$/euro}^e - E_{\$/euro}}{E_{\$/euro}}$$

Under the first scenario for expectations we have $E_{\$/euro}^e - E_{\$/euro} = -0.10$. Substituting this into the UIRP equation gives

$$R_{\$} = R_{euro} + \frac{-0.10}{E_{\$/euro}} \quad (1)$$

Substituting in the interest rates given in the problem into this equation gives

$$0.06 = 0.11 + \frac{-0.10}{E_{\$/euro}}$$

$$\Rightarrow -0.05 = \frac{-0.10}{E_{\$/euro}}$$

$$\Rightarrow E_{\$/euro} = \frac{0.10}{0.05}$$

$$\text{So, } E_{CDN\$/euro} = 2.0$$

Under the second scenario for expectations we have $E_{CDN\$/US\$}^e - E_{CDN\$/US\$} = 0.06$.
 Substituting this into the UIRP equation gives

$$R_{CDN\$} = R_{US\$} + \frac{0.06}{E_{CDN\$/US\$}}$$

Substituting in the interest rates given in the problem into this equation gives

$$0.06 = 0.11 + \frac{0.06}{E_{\$/euro}}$$

$$\Rightarrow -0.05 = \frac{0.06}{E_{\$/euro}}$$

$$\Rightarrow E_{\$/euro} = -\frac{0.06}{0.05}$$

$$\text{So, } E_{CDN\$/euro} = -1.2$$

Since exchange rates must be positive, only the first scenario for expectations makes sense. The economic reason is that since the foreign (Europe) interest rate is above the home (Canada) interest rate, investors would be willing to invest in the home asset (which is paying the lower rate of return) *only* if they expect the home currency to appreciate in the future. Hence, the only expectations which are consistent with foreign interest rates above home interest rates is a belief that the future spot rate will be below the current spot rate, that is $E^e < E$. This is consistent with the first scenario but not the second.

- II. Using the expectation scenario from part (A) that makes sense, determine the equilibrium spot rate when the European interest rate decreases to 10%. Determine whether the Canadian dollar appreciated or depreciated in response to this change and provide economic intuition for your finding. Show the initial *and* new equilibrium current spot rates in a diagram. [8 marks]**

Substituting $R_{euro} = 0.10$ and $R_{\$} = 0.06$ into equation (1) above gives us the new equilibrium spot rate.

$$\begin{aligned}0.06 &= 0.10 + \frac{-0.10}{E_{\$/euro}} \\ \Rightarrow -0.04 &= \frac{-0.10}{E_{\$/euro}} \\ \Rightarrow E_{\$/euro} &= \frac{0.10}{0.04} \\ \Rightarrow E_{\$/euro} &= 2.5\end{aligned}$$

So, the new equilibrium spot rate is 2.5. It is above the spot rate of 2 calculated in part (A). Hence a decrease in the European interest rate led to a depreciation of the Canadian dollar. At first glance, this seems inconsistent with the comparative statics exercise we did in class that stated that *ceteris paribus*, a decrease in R_{euro} should lead to a fall in $E_{\$/euro}$, that is an appreciation of the home currency. So, why do we get the opposite result in this example? In this exercise, we are *not* holding expectations of the future spot rate constant. So, this is not a *ceteris paribus* exercise. The intuition, then, is that a fall in the European interest rate decreases the spread between home and foreign interest rates, making the home investment more attractive. Thus, investors will be willing to continue to hold the foreign asset only if they believe there will be a smaller appreciation of the home currency. Given the way we have formulated expectations here, the only way they could believe there will be a smaller appreciation in the future is if the current spot rate increases. Thus the result will be a rise in the current spot rate or a current depreciation of the home currency.

Figure 2 illustrates the foreign exchange market showing both the initial and new equilibrium current spot rates. Note that here the curve which shows the expected return

on euro deposits in terms of Canadian dollars, $\left(R_{euro} + \frac{-0.10}{E_{\$/euro}}\right)$, is upward sloping

because for a given level of European interest rate, R_{euro} , the relationship between

$\left(R_{euro} + \frac{-0.10}{E_{\$/euro}}\right)$ and the exchange rate, $E_{\$/euro}$, is positive. A decrease in the European

interest rate causes a shift in the expected return on euro deposits curve to the left and upward, resulting into an increase in the exchange rate from 2 Canadian dollars per euro to 2.5 Canadian dollars per euro.

III. Suppose interest rates are as given initially (11% in Europe and 6% in Canada) and the current spot rate equals 2.25 Canadian dollars per euro. Calculate the forward discount or forward premium. [4 marks]

We first calculate the forward rate, $F_{CDN\$/US\$}$, using covered interest parity (CIRP):

$$R_{CDN\$} = R_{US\$} + \frac{F_{CDN\$/US\$} - E_{CDN\$/US\$}}{E_{CDN\$/US\$}}$$

$$0.06 = 0.11 + \frac{F_{CDN\$/US\$} - 2.25}{2.25}$$

$$\Rightarrow -0.05 = \frac{F_{CDN\$/US\$} - 2.25}{2.25}$$

$$\Rightarrow -0.1125 = F_{CDN\$/US\$} - 2.25$$

$$\Rightarrow F_{CDN\$/US\$} = 2.14$$

We calculate the forward discount rate as follows:

$$FD = \left(\frac{F_{CDN\$/US\$} - E_{CDN\$/US\$}}{E_{CDN\$/US\$}}\right) \times 100 = \left(\frac{2.14 - 2.25}{2.25}\right) \times 100 = -4.89\%$$

Since the forward rate (2.14) is below the current spot rate (2.25), euro is said to be at forward discount of 4.89% against Canadian dollar.