

ASSIGNMENT

SUGGESTED SOLUTIONS

REMARKS:

- This is a group assignment with a maximum of 6 students per group.
- The problems are to be answered in the space provided for them on this booklet.
- Clearly show your working and encircle the final answer.
- This assignment is due at the start of class on Monday Feb 15, 2016.

Member 1 Name : _____

Student no.: _____ Sec: _____

Member 2 Name : _____

Student no.: _____ Sec: _____

Member 3 Name : _____

Student no.: _____ Sec: _____

Member 4 Name : _____

Student no.: _____ Sec: _____

Member 5 Name : _____

Student no.: _____ Sec: _____

Member 6 Name : _____

Student no.: _____ Sec: _____

$$\frac{\text{MOP}}{\$} 4$$

PROBLEM 1 (10 POINTS)

Let the current MOP exchange rate be 4 MOP/US\$.

(a) A forecaster predicts a 37.5% MOP depreciation. What value of the exchange rate is she predicting? (4 POINTS)

$$\frac{\$}{\text{MOP}} = 0.25$$

$$\frac{y - 0.25}{0.25} = -0.375 \Rightarrow y = 0.1563 \frac{\$}{\text{MOP}}$$
$$= \boxed{\frac{\text{MOP}}{\$} 6.4}$$

(b) Another forecaster predicts a 60% US\$ appreciation. What value of the exchange rate is he predicting? (4 POINTS)

$$\frac{x - 4}{4} = +0.6 \Rightarrow x = \boxed{6.4 \frac{\text{MOP}}{\$}}$$

(c) Do the two forecasters in (a) and (b) agree or disagree with each other? Explain. (2 POINTS)

Agree! Predicted exchange rate values are same

$$DC = \$$$

$$\frac{\text{¥} 90}{\$}$$

$$\frac{\text{C\$} 1.40}{\$}$$

PROBLEM 2 (8 POINTS)

Suppose the Japanese Yen is currently traded at Yen 90/\$. The Canadian Dollar is traded at C\$ 1.40/\$.

(a) Determine the implied Yen/C\$ cross rate. (1 POINT)

$$\frac{\text{¥}}{\text{C\$}} = \frac{\text{¥}}{\{\text{\$}\}} \times \frac{\{\text{\$}\}}{\text{C\$}} = 90 \times \frac{1}{1.40} = \frac{\text{¥} 64.2857}{\text{C\$}}$$

(b) Suppose the Yen/C\$ was at Yen 66/C\$. Is there any arbitrage opportunity? (1 POINT)

	Mkt	=	Implied	
	¥		¥	
	66	≠	64.2857	⇒ Arbitrage opp ⁿ exists
	$\frac{\text{¥}}{\text{C\$}}$		$\frac{\text{¥}}{\text{C\$}}$	
	<u>SELL</u>		<u>BUY</u>	

(c) How would you take advantage of any arbitrage situation? (2 POINTS)

sell $\frac{\text{¥}}{\text{C\$}}$ ⇒ sell C\$ buy ¥

sell \$ buy C\$
 sell C\$ buy ¥
 sell ¥ buy \$

(d) What is your profit? (4 POINTS)

\$ 1 $\xrightarrow{\pi=21.67\%}$ = \$ 1.02667

sell \$ buy C\$ sell ¥ buy \$

$\text{¥} 92.4 \times \frac{\$}{\text{¥}} \frac{1}{90}$

$= \text{¥} 92.4$

$\text{C\$} 1.40 \times \frac{\text{¥}}{\text{C\$}} 66$

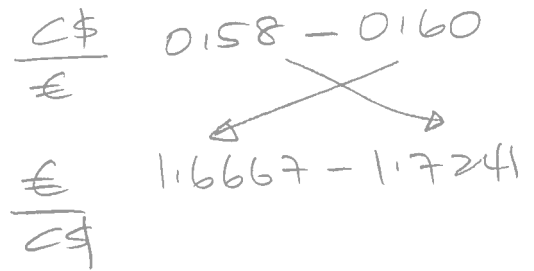
$\$ 1 \times \frac{\text{C\$} 1.40}{\$} = \text{C\$} 1.40$

sell C\$ buy ¥ @ mkt

PROBLEM 3 (2 POINTS EACH, TOTAL 12 POINTS)

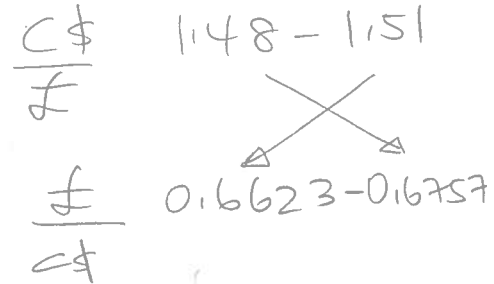
Your bank offers you the following quotes:

C\$/€ 0.58-0.60
C\$/£ 1.48-1.51



a) How many Canadian dollars will you need to buy €100?

$$\text{€ } 100 \times \frac{C\$}{\text{€}} 0.60 = \boxed{C\$ 60}$$



b) How many pounds will you need to buy C\$100?

$$C\$ 100 \times \frac{\text{£}}{C\$} 0.6757 = \boxed{\text{£ } 67.57}$$

c) How many euros will you receive if you sell C\$200?

$$C\$ 200 \times \frac{\text{€}}{C\$} 1.6667 = \boxed{\text{€ } 333.33}$$

d) How many pounds will you receive if you sell C\$275?

$$C\$ 275 \times \frac{\text{£}}{C\$} 0.6623 = \boxed{\text{£ } 182.12}$$

e) How many Canadian dollars will you need to buy £125?

$$\text{£ } 125 \times \frac{C\$}{\text{£}} 1.51 = \boxed{C\$ 188.75}$$

f) How many euros will you need to buy C\$300?

$$C\$ 300 \times \frac{\text{€}}{C\$} 1.7241 = \boxed{\text{€ } 517.24}$$

$$\frac{\text{€}}{\text{£}} = \frac{DC}{FC}$$

PROBLEM 4 (15 POINTS)

Assume that you can trade at the following prices:

Spot rate = S	€1.4987/£
One-year forward exchange rate = F	€1.4876/£
One-year pounds sterling interest rate = $R_{\text{£}}^*$	3.55%
One-year euro interest rate = $R_{\text{€}}$	4.10%

Is covered interest arbitrage worthwhile? If so, explain the steps in words and compute the profit.

$$\frac{F}{S} \stackrel{?}{=} \frac{1+R}{1+R^*}$$

$$\Rightarrow \frac{1.4876}{1.4987} \stackrel{?}{=} \frac{1.0410}{1.0355}$$

$$\underbrace{0.99259}_{\text{BUY}} \stackrel{?}{=} \underbrace{1.005311}_{\text{SELL}}$$

Buy $\frac{F}{S} \Rightarrow$ buy F \Rightarrow buy £ fwd

Borrow £ @ $R_{\text{£}}^*$
 Convert £ to € @ S
 Invest € @ $R_{\text{€}}$
 Convert € to £ @ F
 Repay loan

PROBLEM 4 CONTINUED

Use this space to continue working on Problem 4

Borrow £1

sell £
buy €
@ S

$$£1 \times \frac{€ 1.4987}{£}$$

$$= € 1.4987 \quad \frac{\text{Invest @}}{R_€}$$

Need to repay
£1 (1.10355)¹ = £1.10355

Profit = 1.33%

$$= £ 1.104877$$

$$€ 1.56015 \times \frac{£}{€} \frac{1}{1.4876}$$

sell €
buy £

$$= € 1.56015$$

$$€ 1.4987 (1.10410)^1$$