International Financial Manangement C45.0030.001 Problem Set I Solutions

Chapter 1.

1. Read the attached mini-case [also available in the textbook on page 20-21 from the textbook of Moffett, Stonehill, & Eiteman] about the corporate governance practices @ Brazil Telecom. Answer this question [this is question 2 on page 21 from the textbook]: why would two major investors like CVC/Opportunity and Telecom Italia create a partnership to gain control of a firm and then be unable to agree on the firm's future strategy?

As is often the case w/ joint ventures & strategic alliances, the initial motivation of the parties might have not been the same as the long-term objectives of the two sides. By themselves, neither of the two owners could obtain sufficient capital or political links necessary to take control from the beginning. It might have been the case that Telecom Italia viewed the acquisition of Brazil Telecom as a step towards a larger scale penetration in Latin America, while the CVC/Opportunity investment bank was primarily interested in building up the profitability of the business.

2. If shareholders are dissatisfied w/ their company, what can they do? Give me couple of possible actions.

One possible action is to sell the shares. If number of shareholders undertake it, that might cause drop in share price, making the firm an easier takeover target. The takeover threat may push existing managers to change their mal-practices.

Another action is, if a concentrated group of shareholders vote out existing board members when they fail to change their practices. Cumulative voting facilitates placing a minority stockholder on the board of directors.

Third option would be to accumulate sufficient shares to take control of the company. Usually this is done by a firm seeking to acquire sufficient control over the target by the means of making a <u>tender offer</u> for sufficient number of shares to acquire a majority position on the board of directors. In the framework of non-Anglo-American model corporate governance, this could be much more difficult, since the wishes of non-shareholder stakeholders need to be considered. Also many firms have disproportionate voting rights, because of multiple classes of stock, allowing <u>entrenched managers</u> to remain in the firm.

3. Many European firms have two types of share capital for their common stockholders, A and B shares, w/ different voting rights. Owners of one class have more voting power than owners of the other class (this relates to the voting rights of common shareholders, not preferred stockholders). Why do you think Europeans allow a differential in the voting rights for common stockholders?

First, it might be the case that the average shareholder is presumed not knowledgeable about the business and its prospects, hence he is not sufficiently informed to be entrusted w/ selection of directors & other important corporate decisions.

A second reason for dual classes of stock is that takeover bids by other companies are made more difficult, because the acquirer would need to get the voting class shares of the target, which are more expensive, and are hold/ controlled by existing management, thus making it more difficult to get control over the company.

Chapter 2.

1. The mobility of international capital flows is causing emerging market nations to choose between a free-floating currency exchange regime and a currency board (or dollarization). Describe shortly how each of the regimes would work.

In a free-floating exchange rate system, the exchange rate of a country's currency is determined primarily by the demand & supply of the currency. However, in a currency board, the exchange rate is fixed at par value to another currency (anchor currency) and the government has the obligation to maintain this fixed rate. How does the government manage to maintain the fixed rate? In essence, it does not print more money in circulation that the forex reserves it possesses: for example, if the exchange rate is HK\$ 7.779/ US\$, and the government has US\$ 110 bn in reserve, it can not have more than 7.779 x 110 billion = 856 billion HK\$ in circulation. If it has printed more money than forex reserves, that means it has printed more money then it should, and that is going to put the currency board stability at risk. Why? Because more money chasing same amount of goods means inflation, @ some future date. But inflation itself will make the price of money (or nominal interest rate) to go up, if the real interest rate is to stay at par w/ that of other countries. If speculators spot out this opportunity, they would try to benefit from it, and since they know the country has not sufficient reserves to thwart their attempt (attack), they might as well be successful in pushing the currency value down.

2. What is the difference between dollarization and currency board?

Currency board maintains the stability of the exchange rate through a strict ban of printing extra money & thus ensuring that the central bank of the country has sufficient reserves to meet any demands for exchanging its domestic currency for hard foreign currency.

Dollarization is tantamount to substituting the local currency w/ US\$ as official legal tender. In this case, no monetary policy tools are available to the central bank of that country, because they can not print money (US\$).

Chapter 3.

1. [this is problem 3.10. (parts a, b, c, d, h, & k) on page 59 from MSE]. Classify each of the following transactions as a debit/credit to the appropriate subcomponent of the Current Account/ or Financial/ Capital Account of the countries involved:

Question	BOP classification
a. A U.S. food chain imports wine from Chile.	Debit to US goods part of CA,
	<u>Credit</u> to Chilean goods part of CA.
b. A U.S. resident purchases a euro-denominated bond	<u>Debit</u> to US portfolio part of financial account;
from a German company.	<u>Credit</u> to German portfolio of financial account.
c. Singaporean parents pay for their daughter to study at a	<u>Credit</u> to US current transfer in CA. <u>Debit</u> to
U.S. university.	Singapore current transfer in CA.
d. A U.S. university gives a tuition grant to a foreign	If student is already in US, no transfer will appear
student from Singapore.	(student is resident for BOP purposes)
	If student is in Singapore, <u>debit</u> to US current
	transfer of CA, credit to Singapore current
	transfer of CA.
h. A London-based insurance company buys U.S.	<u>Debit</u> to portfolio investment section of UK
corporate bonds for its investment portfolio.	financial account;
	<u>Credit</u> to portfolio investment section of US
	financial account;
k. Cathay Pacific Airlines buys jet fuel at Los Angeles	<u>Debit</u> to the goods part of Hong Kong CA.
International Airport so it can fly the return segment of a	<u>Credit</u> to the goods part of the US current
flight from Hong Kong.	account.

2. [parts **a**, **b**, & **d** of Problem 3.4 on page 61 of MSE]

Use the Argentine balance of payments data from the IMF to answer the following questions.

a. What is Argentina's balance on services?

From the spreadsheet, know that the balance of services is the <u>difference between credits</u> <u>and debits on services</u>: for 1998: -4,509, for 1999: -4,155, for 2000: -4,335. Steady net inflow of services from abroad for which Argentina had to pay...

b. What is Argentina's current account balance?

Summing up over the goods, services, income, & current transfers balances, we obtain the balance on CA, shown in the table below. As we can see, the main reason for the CA deficit was the presence of deficits on the income transfers (i.e. payments to overseas investors on investments made in previous periods).

d. What is Argentina's financial account balance?

Summing up over the direct investment, portfolio investment, & other investments balances, we obtain the balance on FA, shown in the table below. As you can see there was a stable inflow of capital in Argentina.

Argentina s Datailee of Payments			
(Million US\$)	1998	1999	2000
A. Current Account			
Goods: exports	26,433	23,309	26,409
Goods: imports	29,532	24,103	23,851
Balance on goods	-3,099	-794	2,558
Services: credit	4,618	4,446	4,536
Services: debit	9,127	8,601	8,871
Balance on services	-4,509	-4,155	-4,335
Income: credit	6,121	6,085	7,397
Income: debit	13,537	13,557	14,879
Balance on income	-7,416	-7,472	-7,482
Current Transfers: credit	711	688	641
Current Transfers: debit	313	306	352
Balance on current transfers	398	382	289
Balance of Current Account	-14,626	-12,039	-8,970
B. Capital Account	73	88	87
C. Financial Account			
Direct Investment Abroad	2,326	1,354	1,113
Direct Investment in Argentina	7,292	23,984	11,665
Balance on direct investments	4,966	22,630	10,552
Portfolio Invest. Assets, net	-1,905	-2,129	-1,060
Portfolio Invest. Liab's, net	10,693	-4,782	-1,332
Balance on portfolio investments	8,788	-6,911	-2,392
Balance on other invest, net	5,217	-1,026	-50
Balance on financial account	18,971	14,693	8,110
D. Net Errors & Omissions	-328	-729	-403

Argentina's Balance of Payments

3. What is the Official Reserves Account (ORA) and why is it more important for countries under a fixed exchange rate regime than for ones under a floating exchange rate regime?

The total reserves held by the monetary authority of the country. Usually consists of the main reserve currencies (or hard currencies, such as the US\$, SDR, Euro). The balance on this account is very important for a country w/ fixed exchange rate systems because it the government may have to use these reserves to guarantee the stability of the exchange rate. (it is government's responsibility to maintain the rate fixed under fixed exchange rate arrangement). So, if for example there is an oversupply of the domestic currency, to prevent the value of the currency falling the government has to have its official reserves standing by ready to exchange for and maintain the fixed rate.

Chapter 4.

1. Suppose that one-year interest rates are 6% in the US and 8% in UK. The current spot rate b/n the British pound and US\$ is \$ 1.48/pound. What would you expect the spot rate for the pound to be one year hence if you believe that the international Fisher effect holds?

Know that the Fisher open states

$$\frac{S_2}{S_1} = \frac{1+i^{\$}}{1+i^{FC}}$$

where S1 and S2 are <u>direct quotes</u>, that is, US\$ per Brit pounds (note if we had <u>indirect</u> quotes, the Fisher open would look like this $\frac{S_2^{INDIRET}}{S_1^{INDIRECT}} = \frac{1+i^{FC}}{1+i^{\$}}$). What this tells us in

approximate terms is that the difference between the interest rates shall be equal to the change in the spot rate, but in the opposite direction.

So, how can we obtain S_2 ? Know that $S_1=1.48$ \$/BP. I^{\$}=0.06, I^{BP}=0.08.

So, let's plug in & play with these.

$$S_2 = S_1 \frac{1+i^{\$}}{1+i^{FC}} = 1.48 \frac{1+0.06}{1+0.08} = 1.45 \$ / BP.$$

What is the logic behind this expected spot rate in one year? Well, it must be the case, that if I want to invest today 1,000 \$ in UK and then convert them back in one year, I would reap the same interest and principal, as if I decided to stay in the US, so that there is no stimulus for me (arbitrage) to do this UK deposit trip. The Fisher open assures us that indeed that is the case, when there ate interest rate differentials.

2. In Japan, Honda's export price per vehicle, FOB (that means <u>free of board</u>) Yokohama, was 5 million yen at a time when the exchange rate was 125 yen per US\$. The expected rate of inflation in Japanese yen for the coming year is 1 %. The expected rate of inflation in US is 3 %. Honda actively tries to limit pass through of exchange rate changes into prices to 60 % of annual changes. <u>Please show your</u> <u>work ⊕</u>.

a. What was the US\$ price of a Honda @ the beginning of the year?

 $\frac{Yen5,000,000}{125Yen/\$} = 40,000\$.$ (well, you can think of a Honda SUV ⁽²⁾).

b. Assuming purchasing power parity, what was the expected spot exchange rate @ the end of the coming year?

As we know from class lectures, $\% \Delta s_{\$/Yen} = \% \Delta p_{US} - \% \Delta p_{JAPAN}$, i.e the percentage change in the spot exchange rate is same as the difference between the percentage inflation in US and Japan (look, it is easy to remember O – the quotation is direct, \$/Yen and the difference is b/n \$ inflation and Yen inflation). An even easier way to write it down is the following:

$$\frac{S_2^{YEN/\$}}{S_1^{YEN/\$}} = \frac{1 + \pi^{JAPAN}}{1 + \pi^{US}},$$

where S_2 is the spot rate @ the beginning of <u>next year</u>, and S_1 is the <u>current spot rate</u>. Now, we know that:

S₁=Yen 125/ \$.

Expected Inflation Japan: 1%

Expected Inflation US: 3%.

So,
$$S_2^{YEN/\$} = \frac{1 + \pi^{JAPAN}}{1 + \pi^{US}} S_1^{YEN/\$} = \frac{1 + 0.01}{1 + 0.03} 125 = Yen 122.57/\$.$$

c. Assuming 60% pass-through of exchange rate changes, what would the price of a Honda be @ the end of the coming year in US\$?

Here is how to determine the price of a Honda using pass-through of 60%.

<u>Step 1.</u> First, what will be the price of a Honda in YEN one year from now?

 $Yen5,000,000 \times (1+0.01) = Yen5,050,000.$

<u>Step 2.</u> What is expected percentage change of the exchange rate, assuming relative *PPP*?

$$\frac{S_1^{YEN/\$} - S_2^{YEN/\$}}{S_2^{YEN/\$}} = \frac{S_1^{YEN/\$}}{S_2^{YEN/\$}} - 1 = \frac{125}{122.57} - 1 = 0.0198, \text{ or } 1.98\%.$$

<u>Step 3.</u> What is the proportion of exchange rate change passed through by Honda?

We know that only 60 % of the exchange rate change will be passed through to the price.

$$0.6 \ge 1.98\% = 1.188\%$$
.

<u>Step 4.</u> What is the effective exchange rate used by Honda to price its car in US\$, @ end of year?

$$\frac{S_1^{YEN/\$}}{(1 + \text{passed \% change})} = \frac{125}{(1 + 0.01188)} = Yen123.532/\$.$$

<u>Step 5.</u> Use the effective exchange rate to transfer the Yen price (@ end of year) in price in US\$.

$$\frac{Yen5,050,000}{Yen123.532/\$} = \$40,880.$$

3. [Also in textbook as problem 11 on pages 87-88 of MSE]

Money and foreign exchange markets in Frankfurt and New York are very efficient. The following information is available:

	Frankfurt	New York
Spot exchange rate	\$0.9000/Euro	\$0.9000/Euro
One-year treasure bill rate	6.50%	3.20%
Expected inflation rate	Unknown	2.00%

a. What do the financial markets suggest for inflation in Europe next year?

If we believe Fisher-open, then the real interest rates should be equal between the two markets (remember, they are very efficient, which means there are almost no arbitrage opportunities left). But what are the real interest rates? From class, know that

(1 + nominal interest rate) = (1+expected inflation) x (1+real interest rate) (**Fisher effect**)

or if you will a shortcut,

nominal interest rate = real interest rate + inflation.

Let's use the first one (more precise ⁽ⁱ⁾). This equality holds for NY & Frankfurt alike.

Europe: $1+6.5\% = (1 + unknown) \times (1 + real interest rate),$ US: $1+3.2\% = (1+2\%) \times (1 + real interest rate)$

So, find out real interest rate from the US,

Re *al* interest $rate = \frac{1+0.032}{1+0.02} - 1 = 0.0117$, or 1.17%

Now, the real interest rates in the two are the same. So apply the real interest rate from US to Europe:

 $1+6.5\% = (1 + \text{unknown}) \times (1+1.17\%),$

from where the expected inflation (i.e. the unknown) is determined as:

Expected inflation in Europe = $\frac{1+0.065}{1+0.0117} - 1 = 0.0527$, or 5.27%.

b. Estimate today's one-year forward exchange rate between the dollar and the euro.

Know that

$$F_{360}^{\text{$$/EURO$}} = S^{\text{$$/EURO$}} x \frac{\left[1+i^{\text{$$}}\right]}{\left[1+i^{\text{$EURO$}}\right]} = \text{$$0.9/Euro$} \frac{\left[1+0.032\right]}{\left[1+0.065\right]} = \text{$$0.872/Euro$}.$$

(how to remember this formula – if you start w/ direct quotation \$/Euro, then take spot rate and multiply by ratio of gross <u>\$-rate</u> to gross <u>Euro-rate</u> O)