Sample Quiz 4 International Finance Management C45.0030.001 Total points: 20, Time: 25 min

Q I. (4 points) (please answer <u>only one</u> of the two questions):

1. What is a <u>back-to-back</u> loan?

A back-to-back (or parallel) loan is an arrangement where two business firms in separate countries arrange to borrow each other's currency for a specific time period through their subsidiaries in the other firm's country. At an agreed terminal date they return the borrowed currencies. The operation is conducted outside of the foreign exchange markets.

So, for example a Hong Kong parent company can extend a loan to its US subsidiary by finding a US parent company that wants to extend a loan to its Hong Kong subsidiary, and then swap the two loans.

3. What is the difference between operating and transaction exposure?

Operating exposure differs from transaction exposure in two ways: first which cash flows are being managed, and second, how would these cash flows change when forex rate changes. Starting with the first point, the cash flow that is managed in transaction exposure is future cash flow that is already contracted for. The cash flow managed under economic exposure is future anticipated one. As for the second point, the operating exposure predicts that unexpected fluctuations of forex rate would eventually alter the cost, unit sales, and prices in foreign currency, so that this will impact the bottom line of the firm. On the other side, the transaction exposure predicts that forex rate changes might directly impact the cash flows that are already contracted for. **Q II.** (4 points) (please answer <u>only one</u> of the two questions):

1. British Petroleum (BP) and Exxon Mobil (Exxon) each wish to enter into a crosscurrency swap hedging agreement. BP is receiving US\$ from U.S. sales but wants pounds, & can borrow in pounds at low cost. Exxon is receiving pounds from British sales but wants US\$, & can borrow at a low cost in US bond market. Briefly, what would they do to arrange <u>a cross-currency swap</u>?

First, BP can borrow in Pounds, & Exxon can borrow in US\$, i.e. in the markets in which they can get a low cost. Then they can swap their debt services, i.e. BP would pay the Exxon's \$ debt service in exchange of Exxon paying its Pound debt service (so to speak, BP receives pounds from Exxon while it pays Exxon US\$). Doing so would lower BP's US\$ operating cash flow exposure since now it would have a corresponding US\$ outflow (i.e the \$ debt payments that it would make on Exxon's debt in exchange of Yen). Similarly, Exxon would lower its Pound operating exposure.

2. Levi Strauss & Co US exports jean garments to Germany. Quarterly sales are 1,000,000 units, at <u>US\$10 each</u>. EUR exchange rate is EUR 0.90/\$, but it is expected to drop to EUR 1/\$. Levi Strauss faces a pricing decision: (1) maintain <u>same EUR price</u> (German unit volume sales will not change), or (2) maintain <u>same US\$ price</u> (i.e. raise EUR price), & experience 20% drop in unit volume sales. US\$ cost per unit is 70% of \$ sales price. What is the \$ gross profit in cases (1) & (2)?

Case (1): Total unit sales are 1,000,000 at EUR price of EUR 0.90/\$ * US\$10 = EUR 9/ unit. After the depreciation the price is still <u>EUR 9/unit</u> but now this is equivalent to \$9/unit at the new exchange rate of EUR 1/\$. So, after the depreciation, the total sales revenue is 1,000,000 units * US\$ 9/unit = \$ 9 million. Since the cost per unit is 70% of the US\$ sales price, the gross profit is \$9,000,000 * (1 - 0.7) = \$2,700,000.

Case (2): maintaining the same \$ price (\$10/unit) after the depreciation results in 20% drop in sales to 800,000 units. So the sales revenues are 800,000 * 10 \$ = \$8 million. The gross profit will be \$8,000,000 * (1 - 0.7) = \$2,400,000, since 70 % of the sales revenues are subtracted because of the costs.

Q III. (4 points) (please answer <u>only one</u> of the two questions)

1. What is a balance sheet hedge?

Balance sheet hedge is a technique to lower the net exposed assets when consolidating a subsidiary's balance sheet items into parent's one. It requires an equal amount of exposed foreign currency assets and liabilities on a firm's consolidated balance sheet. It can be achieved in two ways: 1) reduced the exposed assets in the foreign currency without reducing at the same time the exposed liabilities in the foreign currency. 2) increase the exposed liabilities in the foreign currency without increasing the exposed assets.

2. If the European subsidiary of a U.S. firm has net exposed assets of EUR 500,000, and the euro drops in value from \$1/EUR to \$.90/EUR, what would be the translation gain (or loss) for the U.S. firm?

At \$1/EUR the value of the net exposed assets in US\$ is \$500,000. At \$0.90/EUR, the net exposed assets are worth US\$450,000. So the effect of the EUR depreciation would be a translation loss of \$50,000.

Q IV. (4 points) (please answer <u>only one</u> of the two questions):

1. Marriott International (US) Canadian subsidiary balance sheet for Jan. 1 is shown below. The Jan. 1^{st} 2003 exchange rate is 0.7/C.

Assets		Liabilities & Net Worth	
Cash	C\$ 100	Current Liabilities	C\$ 80
Accounts Receivable	C\$ 100	Long-term Debt	C\$ 200
Inventory	C\$ 40	Capital Stock	C\$ 300
Net Plant & equipment	C\$ 400	Retained Earnings	C\$ 60
	C\$ 640		C\$ 640

Balance Sheet, 01/01/2003, million C\$

What is the US\$ value of the net exposed assets of Marriott on January 1, using the current rate method?

Under the current rate method, know that total exposed assets are sum of all asset line items in the balance sheet above. However, <u>exposed liabilities</u> are sum of <u>current</u> <u>liabilities</u> and <u>long-term debt only</u>. So, the total exposed assets are C\$640 million, while the total exposed liabilities are C\$ 280 million (i.e. the total liabilities net of the capital stock and retained earnings). The difference is C\$ 360 million, which at the rate of Jan 1^{st} is C\$ 360,000,000 * \$0.7/C\$ = \$252,000,000.

2. Give me <u>two</u> differences in how current rate method & temporal method translate foreign subsidiary financial statements into parent's consolidated statements?

First, the non-monetary asset items would be translated differently under the two method. The temporal method would translate them at the historic rate, while the current rate method would translate them at the current rate.

Second, the gains and losses from translation would be kept in the Cumulative Translation Adjustment (CTA) account under the current rate method, while under the temporal method translation losses are not accumulated in a separate account. Q V. (4 points) (please answer <u>only one</u> of the two questions):

1. Qualcomm has a beta of <u>1.2</u>. The company's cost of debt is 8%, risk-free rate of interest is 3%, & expected return on market portfolio is 12%. Income taxes are 20%, and company's target financial mix is 60% equity, 40% debt. What is Qualcomm's weighted average cost of capital, using the CAPM?

Know that the after-tax cost of debt is $8\%^*(1-0.2)=6.4\%$. Need to find out the cost of the equity. To find it out, use CAPM. Know that $k_e = k_{rf} + \beta(k_m - k_{rf})$, where $\underline{k_e} = expected$ return on equity = cost of equity, $k_{rf} = risk$ free rate on bonds = 3%, $k_m = expected$ rate of return on the market = 12%, $\beta = coefficient$ of firm's systematic risk = 1.2. So, the cost of equity is equal to 3%+1.2*(12%-3%) = 13.8%.

Then, the WACC=0.6*13.8% + 0.4*6.4% = 10.84%.

2. Describe briefly how to compute the <u>cost of equity</u> using the <u>integrated-segmented</u> <u>CAPM</u>.

First we compute <u>the world cost of capital</u> using a CAPM setup: the world cost of capital is equal to the US risk free rate plus the world risk premium times the estimate of the <u>world beta</u> (notice that this is a world beta, i.e. a beta computed from a CAPM on the world portfolio, such as the ones of MSCI, http://www.msci.com/equity/index2.html).

Then we compute <u>the local cost of capital</u> using a CAPM setup: the local cost of capital is equal to the <u>local risk free rate</u> plus <u>the local risk premium times the estimate of the</u> <u>local beta</u> (notice that this is a local beta, i.e. a beta computed from a CAPM on the local market portfolio, usually a portfolio representing 90+% of the local stock market capitalization).

Finally we average the world and local cost of capital. What weights to use? If the country is only partially integrated with the rest of the world, it will be better if we give more percentage weight on the local cost of capital. Vice versa, if the country is highly integrated in the world economy, then we have to give more weight on the world cost of capital. So, we can use the ratio of the country's size of international trade (can get it from the BOP stats) to the total GDP (gross domestic product) as a weight on the world cost of capital. The reason is, if international trade represents substantial part of the GDP, then the country is well integrated (in financial & economic terms) w/ the rest of the world, so it is more appropriate to put a higher weight on the world cost of capital.