

**NEW YORK UNIVERSITY**  
*The Stern School of Business*

**Global Banking and Capital Markets**

**Fall 1999**

**Professor Giddy**

**Sample Final Exam**

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1. If the dollar is trading at 130 yen in the spot market, and the 6-month Eurodollar and Euroyen rates are 10% and 7.5% respectively, what is the 6-month yen/dollar forward exchange rate?
  - (a) 127.045
  - (b) 131.567
  - (c) 128.452
  - (d) 133.023
  - (e) 127.500
  
2. What is the real exchange rate?
  - (a) The sum of the rate of inflation and a "real" component that represents the return to capital in the absence of inflation.
  - (b) An index designed to measure deviations from purchasing power parity.
  - (c) An index of the exchange rate constructed by weighting each foreign currency by the country's share in trade with the home country.
  - (d) Your own definition (explain).
  
3. A yen/dollar corporate trader at J.P. Morgan has sold a customer ¥10 million forward for delivery in 1 year. What alternative methods could the foreign-exchange trading manager use to offset this exposure?
  
4. In 1987 Sallie Mae issued currency-linked bonds that were sold to U.S. individual investors. These bonds had the characteristic that the principal amount would rise if the U.S. dollar value of the Japanese yen fell, and vice versa. Explain why Sallie Mae, a federal agency, would issue such bonds; and explain why investors would buy them.
  
5. The Republic of Turkey can issue a four year Dutch Guilder Eurobond at 8.35% annual

with 1.3% up front issuance costs. What LIBOR-based floating cost of funds can Turkey attain? (Use the swap quotations below if necessary.)

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***Interest Rate and Currency Swaps***

<i>Years</i>	<i>US \$ Interest Rate Swaps Act/365 sa</i>	<i>DFI Currency Swaps 30/360 pa</i>
2	6.88-92	6.32-35
3	6.04-08	7.20-27
4	5.68-73	7.50-56

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6. Teletas A.S., newly privatized, has decided to raise funds abroad by issuing a DM Eurobond that is convertible into the company's stock. The five-year bond will be issued at 99.5 with an annual coupon of 7.5% and fees of 1.77%. If similar bonds without equity features yield 8.5%, what is the investor in effect paying for the option she is receiving?
7. List the functions of the buyer's advisor in a global M&A deal
8. What are the key issues to address in assessing a corporation's suitability for the securitization of its accounts receivable? What legal risks did investors face in the Belenus case (securitization of French mortgage loans)
9. Contrast the underwriting methods in the United States, Great Britain and the euroequity market
10. What are the three principal sources of value added in the acquisition of one bank by another? What method would you use to evaluate the potential purchase price of NatWest by the Royal Bank of Scotland, and how would it differ from the method you would use in evaluating the potential purchase price by the Bank of Scotland?

## Suggested solutions

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1. (c) 128.452
2. (b) An index designed to measure deviations from purchasing power parity.
3.
  1. Money market hedge: borrow dollars, buy yen, invest in 1 -ear Euroyen deposit.
  2. Forward hedge: purchase yen for 1 year forward delivery
  3. Rollover forward hedge: buy 3-month yen forward and roll over this forward contract 3 times
  4. Buy yen futures
  5. Synthetic forward with options: buy a 1-year call and sell a 1-year put on yen.
4. Why Sallie Mae issues currency-linked bonds: purely as an arbitrage. Investors do not work out the implied forward rate in the SLMA bond, and the agency is able to enter into a currency swap or long dated forward exchange contract with a bank, *completely* hedging out the exchange risk, and give it an all-in cost of funds lower than it could get with a straight bond.

Why U.S. individual investors buy them: they do not know exactly what the terms should be, and they have a *view that the dollar will be strong against the yen* in the next few year. They accept a lower interest rate in exchange for this position. Also because of counterparty risk, they cannot enter into a forward exchange contract to short the yen for a similar maturity. Even if the futures market is more efficient, it may not go out that far and it is much more of a day-to-day hassle.

5. We will do this by first ignoring the up front issuance costs. To avoid currency risk on the coupon, Turkey would wish to match the 8.35% it pays on the Eurobond with an equal receipt of 8.35% from the swap (check this by drawing the diagram). Since the swap rate is 7.50%, and we want to receive 8.35%, we need to figure out how the 0.85% difference translates to a spread over LIBOR on Turkey's floating payments. From the swap quotation sheet, the US\$ swap rate is 5.73%. Using the basis point conversion formula to convert the Dfl basis points to \$ basis points:

$$BP_{\text{DFL}} 85 = BP_{\$} 83$$

Therefore Turkey would pay LIBOR + .83% disregarding the up front cost.

The up front cost of 1.3% could be annuitized using the \$ fixed rate of 5.73% semi-annual. The annuity formula gives 0.32% per annum. Therefore Turkey's LIBOR-based cost of funds will be:

$$\text{LIBOR} + 0.83\% + 0.32\% = \text{LIBOR} + 1.15\%$$

6. The embedded option is costing the difference between the price of this bond and the price of the same bond without a convertible feature.

This bond's price: 99.5

At the current straight bond's yield (8.5%), a bond paying 7.5% annual should be worth: 96.06.

Difference:  $99.5 - 96.06 = 3.44$ .

So 3.44% of face is the price the investor is paying for the right to convert the bond into equity.

7.

1. Thoroughly review target & subs
2. Advise on probable price range
3. Advise on target's receptiveness
4. Evaluate target's options and anticipate actions
5. Devise tactics
6. Consider rival buyers
7. Recommend financial structure and plan financing
8. Advise on initial approach and follow-up
9. Function as liason
10. Advise on the changing tactical situation
11. Arrange the purchase of shares through a tender offer
12. Help arrange long term financing and asset sales

8.

1. Does the originator currently face a **high cost of funding** assets that would be recognized as sound, cash-generating assets if taken in isolation?
2. Does it have a regulatory or **capital constraint** that makes freeing up the balance sheet important?
3. Does it have **data** about the assets (required by rating agencies and financial guarantors)?
4. Does it have the **servicing** process and systems that can meet the more demanding standards of the asset-backed market?
5. Is the originator **willing** to undertake a complex, time-consuming transaction to obtain a broader, potentially cheaper, ongoing source of funding?

Belenus – see case and class notes.

9. See Global Banking, Ch 11, and class discussion on the concept of “euroequity”

10. M&A:

- Synergies, including revenue-enhancement and cost-cutting such as economies of scale
- Divestitures and other M&A opportunities
- Financial restructuring, including recapitalization and changing the debt mix

For evaluation of the situation in the NatWest case, see class notes and handouts