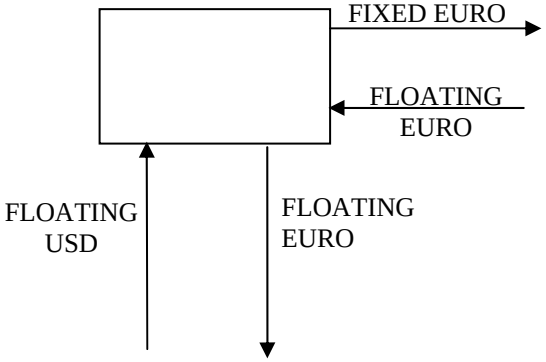
Part IV Risk Management Products

SWAPS (PART OF FUTURES CHAPTER)

1. Obviously candidates need to check the arrows for each of the positions. For (a) we have:



NET IS PAY FIXED EURO, RECEIVE FLOATING USD. THIS IS CORRECT. ALL THE OTHER COMBINATIONS GIVE THE WRONG RESULT.

Answer is (a)

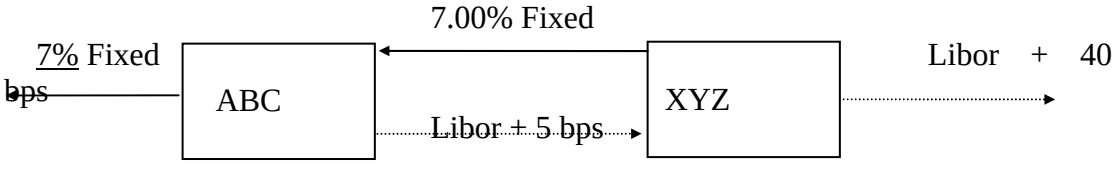
2. 1. If we receive fixed on a swap, we pay the floating;

2. If we own a floating rate note, we receive the floating;

Therefore, the net effect of receiving fixed on a swap and owning a floating rate note is to receive fixed on an asset package, which is the equivalent of owning a bond.

Answer is (a)

3. We can see the net saving by drawing the swap box diagram:



Net cost to XYZ is:

1. Negative Libor + 40 bps
2. Positive Libor + 5 bps

3. Negative 7% Fixed
Net: 7.35%

When compared to a fixed funding rate of 7.50% this is a saving of 15 bps.

Answer = (c)

4. The six month period October 1, 2001 through April 1, 2002 is 182 days.

LIBOR Payment = $- \$100,000,000 \times 0.05 \times \frac{182}{360}$

= - $2,527,777,78

Dividend = $\$100,000,000 \times 0.015 \times \frac{182}{360}$

= $758,333.33

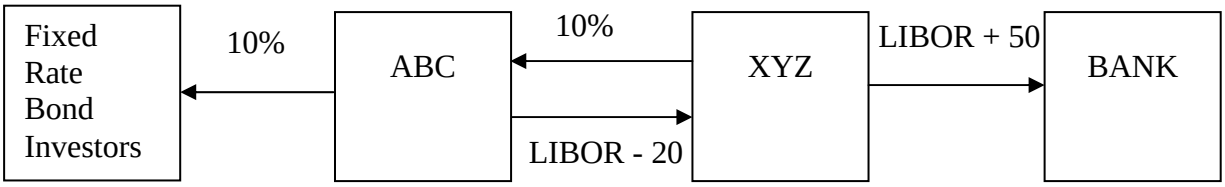
Capital Gain = $\$100,000,000 \quad \frac{100}{1200}$

= $8,333,333.33

Net Payment = + $6,563,889

Answer = (c)

5.



The net cost of fixed rate funding for XYZ is

10% - (LIBOR – 0.20) + LIBOR + 0.50)

= -10.70%

When compared to XYZ's usual fixed rate funding of 11% this represents a saving of 30 basis points

Answer = (a)

6. The question is the same as asking what would be the par yield on a three period bond given the specific zero curve.

Hence we have to find R in the following

$$100 = \frac{R}{1.05} + \frac{R}{(1.0525)^2} + \frac{R}{(1.055)^3} + \frac{100}{(1.055)^3}$$

$$R = 5.48$$

Hence the 3-period swap rate on the fixed side is 5.48%

Answer is (b)

7. Here we use simple bootstrapping to find the 3-year spot rate.

ONE YEAR

$$100 = \frac{100}{1.05}$$

TWO YEAR

$$100 = \frac{5.25}{1.05} + \frac{105.25}{(1+R_2)^2}$$

$$R_2 = 5.256579\%$$

THREE YEAR

$$100 = \frac{5.5}{1.05} + \frac{5.5}{(1.05256579)^2} + \frac{105.5}{(1 + R_3)^3}$$

$$R_3 = \underline{\underline{5.51867\%}}$$

ANSWER IS (c)

8. First we estimate the one, two and three year discount factors:

$$\frac{1}{1.10} = 0.90909091$$

$$\frac{1}{(1.10)(1.11)} = 0.81900082$$

$$\frac{1}{(1.10)(1.11)(1.1225)} = 0.72962211$$

Then we can find the three year per swap rate by finding the coupon yield on a three year bond priced at par.

$100 = C(0.90909091) + C(0.81900082) + C(0.72962211) + 100(0.72962211)$

$C = 11.001194\%$

ANSWER IS (b)