INTERNATIONAL INVESTMENT

1.   The equilibrium forward rate (FR) is simply the rate that prevents arbitrage. But remember that Sterling money markets operate on a 365 day year and US Dollar rates on a 360 day year.

Therefore we have:

$$\left\{1+\left(0.06 \text{ x } \frac{91}{365}\right)\right\} = 1.5500 \left\{1+\left(0.0525 \text{ x } \frac{91}{360}\right)\frac{1}{FR}\right\}$$

$$FR = 1.5500 \text{ x } \frac{\left\{1+\left(0.0525 \text{ x } \frac{91}{360}\right)\right\}}{\left\{1+\left(0.06 \text{ x } \frac{91}{365}\right)\right\}} = 1.5474$$

Answer = (d)

2.   **Answer = (d)**

Standard role of economic or operating exposure

3.   We can calculate the forward rate in the usual manner.

$$\$1.5250 \quad \frac{\left[1+\left(0.075 \times \frac{90}{360}\right)\right]}{\left[1+\left(0.065 \times \frac{90}{365}\right)\right]} = \quad \text{FORWARD RATE}$$

F   = $\underline{\$1.5291}$

Answer is (e)

4.   **Answer is (e)**

5.   The bank will:

1.   Borrow USD 1.5250 at 7.50% for 90 days =

$$USD \ 1.525 \left(1+\left[0.075 \text{ x } \frac{90}{360}\right]\right) = USD \ 1.5536$$

2. Sell USD 1.5250 for GBP 1 Spot Value

3. Invest GBP 1 at 6.50% for 90 days $= 1 + \left(0.065 \text{ x } \dfrac{90}{365} \right) =$ GBP1.0160

Therefore in 90 days:

GBP 1.0160 = USD 1.5536

GBP 1 = USD 1.5536 / 1.0160 = **USD 1.5291**

Note that USD are 360 day base whilst GBP are 365 day base.

Answer is (e)

6. The bank will work through the USD to achieve the quote:

1. The bank will buy CHF and sell USD at 1.4130
2. The bank will sell GBP and buy USD at 1.5860

Therefore if USD 1 = CHF 1.4130
And GBP 1 = USD 1.5860

Then GBP 1 must be the equivalent of : CHF 1.4130 x USD 1.5860
$$= \underline{\textbf{CHF 2.2410}}$$

Answer is (d)

7. We use the usual FRA payment formula

$$\text{PAYMENT} \quad = \quad \frac{[R - 0.07]\,\$100,000,000\left[{}^{N}\!/_{360}\right]}{1 + R\,{}^{N}\!/_{360}}$$

The number of days between July 15, and October 15, is 92 days.

$$\text{PAYMENT} \quad = \quad \frac{[0.085 - 0.07]\,\$100,000,000\left[{}^{92}\!/_{360}\right]}{\left[1 + \left(0.085 \times \frac{92}{360}\right)\right]}$$

$$= \quad \underline{\$375,184}$$

Answer is (d)

8. If the company has to go through the dollar FX market, then he will rationally buy dollars for Swiss Francs and sell dollars for Sterling.

    He will pay CHF 1.4130 for his dollars and pay \$1.5860 for his Sterling. Hence, the effective CHF/Sterling rate will be

    CHF (1.4130) (1.5860) per £ or CHF 2.2410

    Answer = (d)

9. We can calculate the forward rate in the usual manner.

    $$\$1.5250 \quad \frac{\left[1+\left(0.075\times\frac{90}{360}\right)\right]}{\left[1+\left(0.065\times\frac{90}{365}\right)\right]} \quad = \quad \text{FORWARD RATE}$$

    $F \quad = \quad \underline{\$1.5291}$

    Answer = (e)

10. We work out the rate at which pounds can be offered in three months for dollars to avoid an arbitrage.

    > Borrow dollars 3-months
    > Sell dollars for sterling spot
    > Invest sterling 3-months

    At what rate sell sterling for dollars in 3-months to breakeven

    > Borrow \$ at 4 1/8%   :   360 day year
    > Sell \$ at 1.9010
    > Invest £ at 10%   :   365 day year

    $$\frac{1}{1.9010}\left[1+0.10\,\frac{92}{365}\right] X\,Forward\,Rate$$

    $$=\left[1+0.04125\,x\,\frac{92}{360}\right]$$

    $$F = \quad 1.9010\,\frac{\left[1+0.04125\,X\,\frac{92}{360}\right]}{\left[1+0.010\,X\,\frac{92}{365}\right]}$$

    $$= \quad 1.8738$$

Answer = (d)

11. **Answer = (d)**