# AFM UPDATES-SESSION 5

## CASE STUDY BASED QUESTION

### CASE STUDY 1 : INDIAN SOFTWARE COMPANY (FOREX)

An Indian software company had approached State Bank of India (SBI) for forward sale of £100,000 delivery on May 31, 2001. The bank had quoted a rate of Rs.65.60/£ for the purchase of pound sterling from the customer. But on 31st May, the customer informed the bank that it was not able to deliver the pound sterling as anticipated receivable from London has not materialized and requested the bank to extend the contract for delivery 31st July.

Note : Consider FEDAI charges of Rs. 100

The following are the market quotes available on May 31, 2001:

| | | |
|---|---|---|
| Spot | Rs/£ | 66.60/65 |
| 1m forward | | 20/25 |
| 2m forward | | 41/46 |
| 3m forward | | 62/68 |

You are required to find out:

**Question 1:**

Exchange difference per sterling payable by customer

A. 0.40
B. 1.05
C. 0.30

**Question 2:**

On extension of the forward contract..... will be recovered as cancellation charges from the customer

A. Rs.105,100
B. Rs.105,000
C. Rs.100,000

**Question 3:**

Fresh contract will be booked at.....

A. Rs. 70.12
B. Rs. 59.10
C. Rs.67.01.

**ANSWER:**

**Question 1:**

**A is correct**

**Question 2:**

**C is correct**

**Question 3:**

**B is correct.**

## Explanation:

The forward purchase contract will be first cancelled at the spot rate.

| | |
|---|---|
| Sterling bought from the customer under original contract at | 65.60 |
| Sterling sold to customer under cancellation contract at | 66.65 |
| Exchange difference per sterling payable by customer | 1.05 |

Exchange difference is for Rs.105,000

**Charges for cancellation:**

| | |
|---|---|
| Exchange difference | Rs.105,000 |
| (+) Flat charge | Rs.100 |
| | Rs.105,100 |

The bank will book a fresh forward purchase of sterling on 31st July.

| | |
|---|---|
| Spot buying rate for sterling | 66.60 |
| (+) Two month premium | 0.41 |
| | Rs.67.01 |

On extension of the forward contract, Rs.105,100 will be recovered as cancellation charges from the customer and fresh contract will be booked at Rs.67.01

## CASE STUDY 2: FIRM A (DERIVATIVES ANALYSIS AND VALUATION)

An investor holds the shares of Firm A. He bought the shares at Rs.250. He bought a 3 month put option on the share of A at exercise price of Rs.210. The premium on the put option was Rs.5.

**Question 1:**

What is the name of strategy used in Firm A?

A. Protective put
B. Covered call writing
C. Naked call writing

**Question 2:**

Calculate the profit of the strategy if stock price on maturity happens to be 275:

A. 20
B. 25
C. 35

**Question 3:**

Calculate the profit of the strategy if stock price on maturity happens to be 150

A. -60
B. -45
C. -55

**Question 4:**

What is the maximum possible profit on this strategy?

A. 30
B. 50
C. Unlimited

**Question 5:**

What is the break even point?

A. 215
B. 255
C. 205

**Question 6:**

What is the maximum loss on this strategy?

A. 45
B. 55
C. 65

**Question 7:**

This strategy is synthetically equivalent to which of the following in terms of profit profile:

A. Long call
B. Short put
C. Covered put writing

## ANSWER:

**Question 1:**

**A is correct.**

$S^+$, $P^+$ is called protective put

**Question 2:**

**A is correct**

Initial outflow on S+, P+ = 250 + 5 = 255
At $S_T$ = 275, put lapses and the stock is sold at 275
Profit = 275 - 255 = 20

**Question 3:**

**B is correct.**
Initial outflow on S+, P+ = 250 + 5 = 255
At $S_T$ = 150, put exercised and the stock is sold at 210
Loss = 255 – 210 = 45 i.e., profit = -45

**Question 4:**
**C is correct.**
Initial outflow on S+, P+ = 250 + 5 = 255
At $S_T$> 210, put lapses and the stock is sold in the market at a higher price and there is no limit to where stock price can go. So, profit is unlimited.

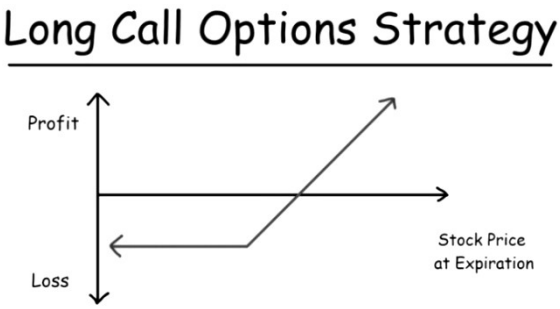
**Question 5:**
**B is correct.**
Break even point = Initial outflow on $S^+$, $P^+$ = 250 + 5 = 255

**Question 6:**

**A is correct.**

Initial outflow on S+, P+ = 250 + 5 = 255
If $S_T$< 210, put is exercised and we sell the stock at 210
So, maximum loss = 255 -210 = 45

**Question 7:**
**A is correct.**
If we compare the profit diagram of long call and protective put, it is the same.



## CASE STUDY 3 : SUN INDUSTRIES LTD.(EQUITY VALUATION)

The dividends on the equity shares of Sun Industries Ltd. (SIL) have been experiencing a growth rate of 12% per annum in the recent years, which is considered to be above normal. The above normal growth rate in dividends is expected to continue for four years after which the growth rate will reduce to 5% per annum which will continue indefinitely. The company has recently announced a dividend of Rs.2.00 per share. The required rate of return on the equity shares is 15%.

You are required to calculate:

**Question 1:**

Present value of the dividends payable during the period of above-normal growth

A. Rs. 5.50
B. Rs. 6.30
C. Rs.7.49

**Question 2:**

Value of the share at the end of 4 years (Value at normal growth in dividends)

A. Rs.33.044
B. Rs. 43.001
C. Rs. 49.547

**Question 3:**

Present value of the value of the share at the normal growth rate

A. Rs. 20.56
B. Rs.18.89
C. Rs. 16.90

**Question 4:**

Value of the equity share of SIL.

A. Rs. 30.59
B. Rs. 29.00
C. Rs.26.38.

**ANSWER:**

**Question 1:**

**C is correct.**

**Question 2:**

**A is correct.**

**Question 3:**

**B is correct.**

**Question 4:**

**C is correct.**

## Explanation :

Dividend stream during the period of abnormal growth:

$D_1 = 2.00\ (1.12)$

$D_2 = 2.00\ (1.12)^2$

$D_3 = 2.00\ (1.12)^3$

$D_4 = 2.00\ (1.12)^4$

**Present value of the dividends payable during the period of above-normal growth**

$$= \frac{2(1.12)}{1.15} + \frac{2(1.12)^2}{(1.15)^2} + \frac{2(1.12)^3}{(1.15)^3} + \frac{2(1.12)^4}{(1.15)^4} = \text{Rs.}7.49$$

**Value of the share at the end of 4 years (Value at normal growth in dividends)**

$$= \frac{2(1.12)^4(1.05)}{0.15-0.05} = \text{Rs.}33.044$$

**Present value of the value of the share at the normal growth rate**

$$= \frac{33.044}{(1.15)^4} = \text{Rs.}18.89$$

**Value of the share = 7.49 + 18.89 = Rs.26.38.**

## CASE STUDY 4 : MERGERS & ACQUISITIONS

The following information is available for company X and Y-

| Particulars | X | Y |
|---|---|---|
| PAT | 90 Crore | 60 crore |
| No of shares Outstanding | 30 crore | 10 crore |
| MPS | 22 | 35 |

Company X is planning to acquire company Y. The acquisition is expected to be done through swap of stocks in which two shares of X will be given for every 1 share of Y.

The management of X makes projection that the combined entity will have an expected P/E ratio of 8 with an SD of 2. The shareholders of company will accept the merger if the probability of the merger being beneficial is more than 70%.

Left cumulative Z table-

| Z score | Probability (Area in 1 tail) |
|---|---|
| 0.32 | 0.3745 |
| 0.33 | 0.3707 |
| 0.34 | 0.3669 |
| 0.35 | 0.3632 |

**Question 1:**

Calculate post merger EPS assuming no synergy in earnings

A. 2.5
B. 3
C. 3.5

**ANSWER:**

**B is correct.**

Earning after merger = 150 crore

Shares after merger = 30cr+ 2×10

= 50crores

EPSab = 150/50

= 3

**Question 2:**

You are required to state whether merger is acceptable to shareholders of X?

A. Not acceptable to shareholders of X
B. Acceptable to shareholders of X
C. Cannot be determined.

**ANSWER:**

**A is correct.**

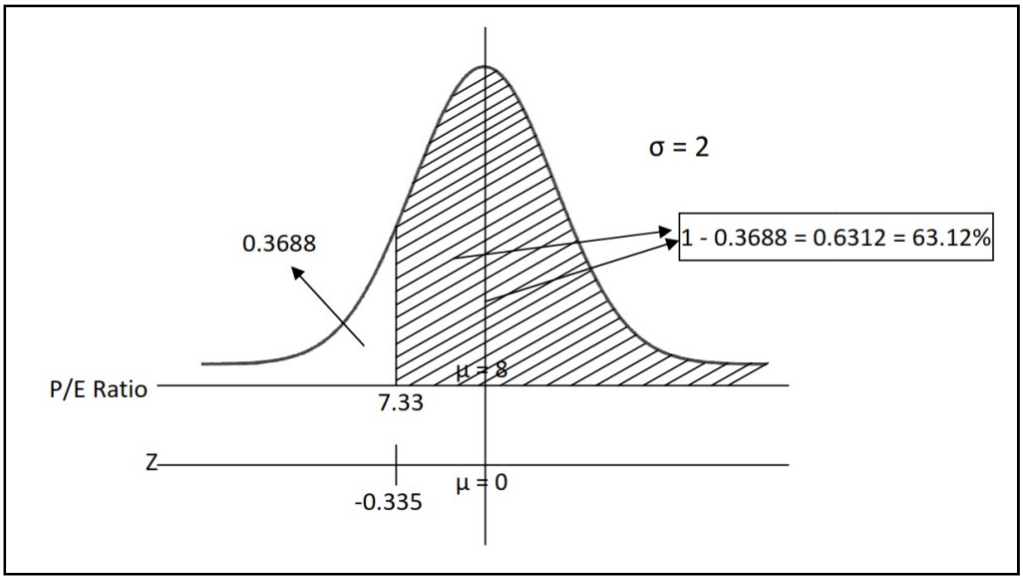
For merger to be viable

Pab>Pa and Probability of Pab>22 should be greater than 70%

P/Eab×EPSab = 22 at least

P/Eab = 22/3

= 7.33 at least




Z = x-u/sd

= 7.33-8/2

= -0.335

Probability of P/E ratio less than 7.33 = (0.3707+0.3669)/2

= 0.3688 (Area in the left tail)

Probability of P/E ratio greater than 7.33 = 1-0.3688

= 63.12%

So shareholders will reject the project.