

Investment Analysis & Portfolio Management (FIN 730)



1. Star Company has 1 million shares outstanding, which are traded in the stock market at a price of Rs. 120 per share. In the recent Annual General Meeting, Board of Governors (BOG) of the company has decided to have a stock split i.e. split 1 share to 4. Discuss how it will affect the overall wealth of a shareholder who owns 100,000 shares of the company. Support your answer with proper calculation of shareholder's wealth before and after the stock split.

Answer:-

Earning before the stock split of shareholder.

No of shares = 100,000

Price = 120 per share

Wealth of share holder = $100000 \times 120 = 12,000,000/-$

Earning after the stock split of shareholder.

No of shares = 100000

Split 1 share to 4 then no of shares will be = $100000 \times 4 = 400,000$

Price = $120/4 = 30$ per share

Wealth of shareholder = $400,000 \times 30 = 12,000,000$

There will no be any change in the wealth of the owner bcz the stock price will also change with the same ratio as the stock split. As one piece of bread cost Rs,10/- if you can cut in to 4 piece or 10 piece the total wealth of the bread will be same

2. You are required to compute the missing figures in the following table by using Capital Asset Pricing Model (CAPM). Complete working is also required.

Asset	Return on risk free asset	Expected return on market	Beta	Expected return on the asset
1	2%	?	0.8	10.8%
2	?	8%	1.3	9.65%
3	3%	9%	0.9	?

For Asset # 1

$R_e = R_f + b(R_m - R_f)$

$10.8\% = 2\% + .8(R_m - 2\%)$

$10.8\% = 2\% + .8R_m - 1.6\%$

$10.8\% = .4\% + .8R_m$

$10.8\% - .4\% = .8R_m$

$10.4\% = .8R_m$

$10.4\% / .8 = R_m$

$13\% = R_m$

If you want to check this u can e.g.

$R_e = R_f + b(R_m - R_f)$

$= 2\% + .8(13\% - 2\%)$

$= .02 + .8(.13 - .02)$

$$\begin{aligned} &= .02 + .8 (.11) \\ &= .02 + .088 \\ &= 0.108 \\ &= 10.8\% \end{aligned}$$

For Asset # 2

$$\begin{aligned} R_e &= R_f + b (R_m - R_f) \\ 9.65\% &= R_f + 1.3 (8\% - R_f) \\ 9.65\% &= R_f + 10.4\% - 1.3R_f \\ 9.65\% - 10.4\% &= R_f - 1.3R_f \\ -.75\% &= R_f (1 - 1.3) \\ -.75\% &= R_f (-0.3) \\ -.75\% &= -0.3R_f \\ -0.75 / -0.3 &= R_f \\ 2.5 &= R_f \\ R_f &= 2.5\% \end{aligned}$$

For Asset # 3

$$\begin{aligned} R_e &= R_f + b (R_m - R_f) \\ R_e &= 3\% + .9 (9\% - 3\%) \\ &= 3\% + .9 (6\%) \\ &= 3\% + 5.4\% \\ &= 8.4\% \end{aligned}$$

3. Mr. A purchased 400 shares at Rs 60 per share with 50 % of margin and maintenance level of 25%. Suddenly the price low to Rs 40. Should Mr. a receive margin call or nor? Explain with calculation.

Answer:-

Total cost of the purchased stock = $400 \times 60 = 24,000/-$
Margin amount is 50% of the total = $24,000 \times 50\% = 12,000/-$
Now after the decline the amount = $24,000 \times 40 = 16,000/-$
The equity part falls to = $16,000 - 12,000 = 4,000$
Maintenance Margin is 25% its mean that after the declining the owner must maintain 25% of the total as equity Part as here $16000 \times 25\% = 4000/-$

As we calculated that after the declining Mr. A has equity of Rs. 4,000 (16000-12000) While he also need Rs.4000/- as maintenance margin to keep the minimum level of equity which he has already. So he will not receive a margin call.

4. Mr. Saeed has bought 200 shares of ANF Corporation at market price of Rs. 35 per share on margin requirement of 40%. Suddenly the market price of ANF shares has been increased to Rs. 42 per share for which Mr. Saeed has decided to sell the shares immediately. You are required to calculate Mr. Saeed's return on investment before commissions and interest.

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Answer:-

Return on investment =	(Earning-initial investment)/initial investment *100
Total purchased shares	200*35=7000
Margin of 40% =	7000 * 40% = 2,800/-
Mr. Saeed Equity 60%=	7000 * 60% = 4,200/-
Total amount after sales	200*42= 8400
the margin of 40%	700*40% = 2,800/-
Saeed Equity after sales	8400-2800 =5,600/-
Earning =	5600-4200=1400
Return on investment =	(5600-4200)/4200*100
Return on investment =	1400/4200*100
Return on investment =	33.33%

Mr Saeed's return on investment before commission and interest is 33.33%.

SIMILAR QUESTION:-

5. Mr. A has bought 200 shares at Rs.35 with initial margin of 50% suddenly after purchase the price of share increased to Rs. 42 per share now he wants to sell it. Calculate ROI before commission and interest.

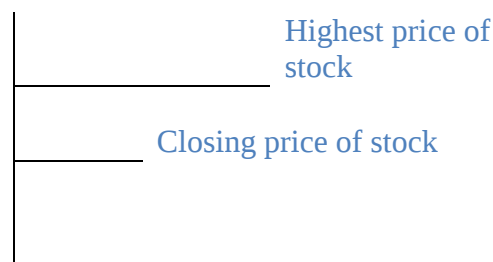
Answer:

Purchase price of share 200*35	=	7000
Margin amount as =	50%*7000	= 3500
Total equity of Mr. A for investment =	7000-3500	= 3500
Sale of shares 200*42	=	8400
Margin of 50% has to be paid	=	-3500
Total amount Mr. A has after sales	=	4900
Total Earning as 4900-3500	=	1400
ROI before commission and interest	= 1400 /3500 * 100	= 40%

6. Mr. Saleem has recently been hired as an analyst in a multinational firm. He is interested in analyzing the actual price movements of a particular stock and also wants to observe active market activity. One of his objective is to make support and resistance levels. In this situation which type of chart he will draw? Support your answer with conceptual rationale.

Answer:-

He will use Bar chart because bar chart tell about price movement from down to upper level. Bar chart show the periodic movement of price which I am explaining below by drawing a chart.



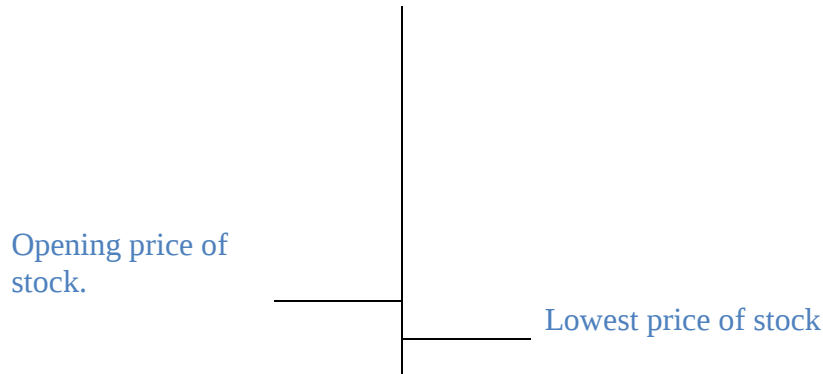


Chart is clearly showing the price movement of stock in the start price is lowest and on the top price is highest. Bar chart give very clear representation and this chart is very efficient from any others chart types. with the help of this chart Mr. Saleem is able to tell the multinational company about that when they should purchase and when they should sale.

7. $D_1 = \text{Rs } 2.00$, $D_2 = \text{Rs } 2.50$ $D_3 = \text{Rs } 3.13$ $D_4 = \text{Rs } 3.53$

First three years growth rate is 25% and from 4th year the growth rate will decrease to 8% and will remain stable. The required rate of return is 15%. Market value of stock is 35.

Calculate intrinsic value to find out stock is under value or overvalue

Year	Dividend (Rs.)	PV of Dividend @15%
1	2	$(2/1.15)$ 1.739
2	2.5	$(2.5/1.15^2)$ 1.890
3	3.13	$(3.13/1.15^3)$ 2.058
4	3.53	$(3.53/1.15^4)$ 2.018
Total PV		7.705

Answer:-

First of all we need to find the P_4 as $P_4 = D_4(1+g)/r-g$

$$P_4 = 3.53(1.08)/0.15-0.08$$

$$P_4 = 3.812 / 0.07 = 54.462$$

$$P_0 = D_1/(1+r) + D_2/(1+r)^2 + D_3/(1+r)^3 + D_4/(1+r)^4 + P_4/(1+r)^4$$

$$P_0 = 1.739 + 1.890 + 2.058 + 2.018 + 54.462/1.749$$

$$P_0 = 1.739 + 1.890 + 2.058 + 2.018 + 31.138$$

$$P_0 = 38.84$$

Since V_0 i.e. 38.84 > P_0 i.e. 35 the stock is undervalued and should be bought or held if already bought.

8. A company EPS is Rs. 5 and paid 40 % as dividend. For the next three years the dividend and earning will grow at 20% and in 4th year the company will pay 100% dividend and after that it will grow at 5 %. The required rate of return is 14%. What is the price today?

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Answer:-

Year	EPS (Rs.)	Dividend PS (Rs.)	PV of dividend
0	5	2 = (5 * 40%)	-
1	6 = (5 * 1.20)	2.40 = (6 * 1.20)	2.105 = (2.40 / (1.14)^1)
2	7.2 = (6 * 1.20)	2.88 = (2.40 * 1.20)	2.216 = (2.88 / (1.14)^2)
3	8.64 = (7.20 * 1.20)	3.456 = (2.88 * 1.20)	2.332 = 3.456 / (1.14)^3)
4	8.64 (7.20 * 20%)	8.64 (8.64 * 100%)	5.115 = (8.64 / (1.14)^4)
Total PV			10.153

- $P_4 \text{ as } P_4 = D_4(1+g)/r-g$
- $P_4 = 5.115(1.05)/0.14-0.05$
- $P_4 = 5.371 / 0.09 = 59.675$
- $P_0 = D_1/(1+r) + D_2/(1+r)^2 + D_3/(1+r)^3 + D_4/(1+r)^4 + P_4/(1+r)^4$
- $P_0 = 2.105 + 2.216 + 2.322 + 5.115 + 59.675 / 1.689$
- $P_0 = 2.105 + 2.216 + 2.322 + 5.115 + 35.33 = 47.10$

9. It was from leverage ratio findout krni thi.. debt n equity n asset prcntage was given.. it was totly dfrnt or

Liquidity ratios have to be calculated based on the data provided in the question, Was to calculate the current ratios. Data was given and to comment upon the ratios or

Find current and leverage ratios

Current ratio = current assets / current liabilities

As of March 31, 2014, for example, Microsoft's (MSFT) balance sheet listed the following:

- Current Assets:

Cash and cash equivalents	\$11,572,000
Short-term investments	\$76,853,000
Net receivables	\$14,921,000
Inventory	\$1,920,000
Other current assets	\$3,740,000
Total current assets	\$109,006,000

- Current Liabilities:

Accounts payable	\$9,958,000
Short-term debt	\$2,000,000
Other current liabilities	\$21,945,000
Total current liabilities	\$33,903,000

Answer:-

To determine MSFT's current ratio, we divide current assets by current liabilities:

MSFT current ratio = \$109,006,000 / \$33,903,000 = 3.22

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A debt ratio is simply a company's total debt divided by its total assets. The formula is:

Debt Ratio = Total Debt / Total Assets

For example, if Company XYZ had \$10 million of debt on its balance sheet and \$15 million of assets, then Company XYZ's debt ratio is:

Debt Ratio = \$10,000,000 / \$15,000,000 = 0.67 or 67%

This means that for every dollar of Company XYZ assets, Company XYZ had \$0.67 of debt. A ratio above 1.0 indicates that the company has more debt than assets.

The debt-to-equity ratio is a measure of the relationship between the capital contributed by creditors and the capital contributed by owners. It also shows the extent to which shareholders' equity can fulfill a company's obligations to creditors in the event of a liquidation.

Here is the formula for the debt-to-equity ratio:

Debt-to-Equity Ratio = Total Debt/Total Equity

For example, if Company XYZ had \$10 million of debt on its balance sheet and \$10 million of total equity, then Company XYZ's debt ratio is:

Debt-to-Equity Ratio = \$10,000,000/\$10,000,000 = 1.0 times or 100%

This means that for every dollar of Company XYZ owned by the shareholders, Company XYZ owes \$1 to creditors.

LEVERAGE = DEBT / EQUITY

LEVERAGE = TOTAL ASSETS / EQUITY

Leverage = long term debt / total equity

10. CAPM with missing figures(numerical)

$K_e = K_{rf} + \text{Beta} (K_{mp} - K_{rf})$

$\text{Beta} = (K_{rf} - K_e) / (K_{rf} - K_{mp})$

$R = R_{rf} + \text{beta} (R_m - R_f)$

Missing values were required to be found using CAPM

The capital asset pricing model is a statement of the principles explained

$$E(r_i) = R_f + \beta_i(E(r_m) - R_f)$$

where $E(r_i)$ is the cost of equity capital

R_f is the risk-free rate of return

$E(r_m)$ is the return from the market as a whole

β_i is the beta factor of the individual security

3.9 Example: CAPM (1)

3.12.1 Example : Dividend growth model and CAPM

The following data relates to the ordinary shares of Stilton.

Current market price, 31 December 20X1	250c
Dividend per share, 20X1	3c
Expected growth rate in dividends and earnings	10% pa
Average market return	8%
Risk-free rate of return	5%
Beta factor of Stilton equity shares	1.40

- (a) What is the estimated cost of equity using the dividend growth model?
- (b) What is the estimated cost of equity using the capital asset pricing model?

Solution

- (a)
$$k_e = \frac{d_0(1+g)}{P_0} + g$$
$$= \frac{3(1.10)}{250} + 0.10$$
$$= 0.1132 \text{ or } 11.32\%$$
- (b)
$$k_e = 5 + 1.40(8 - 5) = 9.2\%$$