

HW - Chapter 9 - Dividend Policy - Q6

- (i) The EPS of the firm is Rs. 10 (i.e., Rs. 2,00,000/ 20,000), $r = \text{Rs. } 2,00,000 / (20,000 \text{ shares} \times \text{Rs. } 100) = 10\%$. The P/E Ratio is given at 12.5 and the cost of capital (K_e) may be taken at the inverse of P/E ratio. Therefore, K_e is 8 (i.e., $1/12.5$). The firm is distributing total dividends of Rs. 1,50,000 among 20,000 shares, giving a dividend per share of Rs. 7.50. the value of the share as per Walter's model may be found as follows:

$$P_o = \{D + R / K_e (E-D)\} / K_e = \{7.5 + 0.1 / 0.08 (10 - 7.5)\} / 0.08 = \text{Rs. } 132.81$$

The firm has a dividend payout of 75% (i.e., Rs. 1,50,000) out of total earnings of Rs. 2,00,000. Since, the rate of return of the firm (r) is 10% and it is more than the K_e of 8%, therefore, by distributing 75% of earnings, the firm is not following an optimal dividend policy. The optimal dividend policy for the firm would be to pay zero dividend and in such a situation, the market price would be:

$$P_o = \{D + R / K_e (E-D)\} / K_e = \{0 + 0.1 / 0.08 (10 - 0)\} / 0.08 = \text{Rs. } 156.25$$

So, theoretically the market price of the share can be increased by adopting a zero payout.

- (ii) The P/E ratio at which the dividend policy will have no effect on the value of the share is such at which the K_e would be equal to the rate of return (r) of the firm. The K_e would be 10% ($= r$) at the P/E ratio of 10. Therefore, at the P/E ratio of 10, the dividend policy would have no effect on the value of the share.

- (iii) If the P/E is 8 instead of 12.5, then the K_e which is the inverse of P/E ratio, would be 12.5 and in such a situation $k_e > r$ and the market price, as per Walter's model would be:

$$P_o = \{D + R / K_e (E-D)\} / K_e = \{7.5 + 0.125 / 0.08 (10 - 7.5)\} / 0.125 = \text{Rs. } 76$$