

MGT411 - Money & Banking
Assignment # 02 (Solution)

Question No 01 (08 marks)

A portfolio of Rs. 1,000 entitles the investor to receive dividend of Rs. 150 at the end of year 2011. Expected future sale price at the end of year is Rs. 998. If the investor plans to sell the stock in the market after holding it for one year, what will be the holding period return for one year on this portfolio (in terms of percentage)?

Solution:

Holding period return

$$= \frac{D \text{ next year}}{P \text{ today}} + \frac{P \text{ next year} - P \text{ today}}{P \text{ today}}$$

$$= \frac{\text{Rs. 150}}{\text{Rs. 1,000}} + \frac{\text{Rs. 998} - \text{Rs. 1,000}}{\text{Rs. 1,000}}$$

$$= \frac{\text{Rs. 148}}{\text{Rs. 1,000}}$$

$$= 0.148$$

Holding Period Return is 14.8%

Question No 02 (08 marks)

Find the variance and standard deviation for the stock of a newly listed public limited company purchased at Rs. 1,000. While making this investment there are 50% chances that the price of investment will fall to Rs. 900 and 50% chances are that it will rise to Rs. 1200 after six months

Solution:

Possibilities	Probability	Pay off	Payoff * probability
1	1/2	900	450
2	1/2	1,200	600

$$\begin{aligned}\text{Expected return} &= p_1 \cdot r_1 + p_2 \cdot r_2 \\ \text{Expected return} &= (0.5 \cdot 900) + (0.5 \cdot 1,200) \\ \text{Expected return} &= 450 + 600 = 1,050\end{aligned}$$

$$\text{Variance} = \{ \text{prob} (\text{return} - \text{exp return})^2 + \text{prob} (\text{return} - \text{exp return})^2 \}$$

$$\text{Variance} = \{ (0.5(900-1,050))^2 + 0.5(1,200-1,050)^2 \}$$

$$\text{Variance} = \{ (0.5 \times 22,500) + (0.5 \times 22,500) \}$$

$$\text{Variance} = \{ 11,250 + 11,250 \}$$

$$\text{Variance} = \{ 22,500 \}$$

$$\text{Standard deviation} = \sqrt{22,500}$$

$$\text{Standard deviation} = 150$$

Question No 03 (04 marks)

In stock market XYZ company is offering 16% annual return on bonds, however, Treasury Bills are providing 7% annual return. Calculate the risk premium if an investor invest in XYZ company.

Solution:

$$\text{Risk premium} = \text{Return on risky securities} - \text{Return on risk free securities}$$

$$\text{Risk premium} = 16\% - 7\%$$

$$\text{Risk premium} = 9\%$$