

PORTFOLIO MANAGEMENT

Class Assignment 2

GROUP No. _____

(Group Reg. Numbers on the answer sheet)

/10 MARKS

1. Discuss the following terms as used in 'Portfolio management':

- a) Portfolio selection;
- b) Portfolio diversification;
- c) Capital Asset Pricing Model;
- d) Municipal bond;
- e) Preferred stock.

2. Consider the two assets A and B for which returns (%) under different conditions of economy are given as below. Find the expected return and risk (as measured by standard deviation of return) of each asset.

		Returns	
Condition of Economy	Prob.	Stock A	Stock B
Recession	0.10	-18.0	-10.0
Below avg.	0.20	-4.0	2.0
Average	0.40	12.0	8.0
Above avg.	0.20	24.0	12.0
Boom	0.10	30.0	18.0
	1.00		
Answer:			

Ans.:

Condition of Economy	Prob.	Return			Prob.*Return			Prob.*(Return - Exp. Return) ²	
		Stock A	Stock B		Stock A	Stock B		Stock A	Stock B
Recession	0.1	18.00	14.00		1.80	1.40		13.92	6.08
Below avg.	0.2	(4.00)	2.00		(0.80)	0.40		41.47	15.49
Average	0.4	12.00	8.00		4.80	3.20		30.98	14.40
Above avg.	0.2	24.00	12.00		4.80	2.40		15.49	9.25
Boom	0.1	30.00	18.00		3.00	1.80		11.24	5.48
				Exp. Return (%)	13.6	9.2	Variance (%Square):	113.10	50.70
							Standard Deviation (%):	10.63	7.12

3. The weights, returns and variance of returns of two stocks that constitute an investment portfolio are given below. Find the portfolio return and risk. Correlation coefficient between returns of Stocks A and B = 0.8

Stock	E(R _i)	W _i	Variance (σ ²) _i	Standard Deviation (σ _i)
A	0.12	0.40	0.0064	0.08
B	0.18	0.60	0.0100	0.10

Answer:

Stock	E(R _i)	W _i	Variance (σ _i ²)	Standard Deviation (σ _i)
A	0.12	0.40	0.0064	0.08
B	0.18	0.60	0.0100	0.10

Correlation coefficient between returns of Stocks A and B = 0.8

$$\text{Portfolio Return} = 0.40 \times 0.12 + 0.60 \times 0.18 = 0.156 = 15.6\%$$

$$\sigma_{\text{port}} = \sqrt{\sum_i w_i^2 \sigma_i^2 + \sum_{i=1}^n \sum_{j=1}^n w_i w_j \text{Cov}_{ij}}$$

$$\text{Portfolio Standard Deviation} = (0.4 \times 0.4 \times 0.08 \times 0.08 + 0.6 \times 0.6 \times 0.10 \times 0.10 + 0.4 \times 0.6 \times 0.8 \times 0.08 \times 0.10 + 0.6 \times 0.4 \times 0.8 \times 0.10 \times 0.08)^{1/2} = (0.0049312)^{1/2} = 0.070223 = 7.02\%$$

4. Ken Limited has just declared \$6.00 as dividend per share (DPS). The beta of Ken's stock is 0.8. The market rate of return and risk free rate of return are 14% and 7% respectively.
- If the DPS of Ken Limited is expected to remain constant, what is the value of share?
 - If the DPS is expected to grow @6% per annum constantly, what is the value per share?

Answer:

Ans.:

Applying capital asset pricing model,

$$\text{The expected rate of return} = k_e = R_f + \beta \times (R_m - R_f) = 0.07 + 0.8 \times (0.14 - 0.07) = 0.126 = 12.6\%$$

- Value per share = DPS / k_e = Rs.6.00 / 0.126 = Rs.47.62
- DPS₁ = DPS₀ * (1 + g) = Rs.6.00 * 1.06 = Rs.6.36
Value per share = DPS₁ / ($k_e - g$) = Rs.6.36 / (0.126 - 0.06) = Rs.98.18

5. Consider the valuation of a share of common stock that paid a RWF 2,000 dividend at the end of last year and is expected to pay a cash dividend every year from now to infinity. Each year, the dividends are expected to grow at a rate of 10%. Based on an assessment of the riskiness of the common stock, the investor's required rate of return is 15%. What is the value of this common stock?

Answer

Value of Common stock

= Present Value of future cash flows

= Present Value of (dividend + expected selling price)

.....finish this question

THE END.