Financial Management (University Elective Course – Odd term 2021)

Topic: Risk and Return

Numerical 1

"DJ" equity analyst firm has information about two companies, namely, Raj Co. and DK Co. During recessionary period, the stock of Raj Co gives better returns, while the stock of DK Co. performs better during the growth period, relative to the stocks of other companies. The current market price of the stocks of both the companies is Rs. 15 per stock.

The firm further provides additional information about the rupee return (dividend plus price change) of both the stocks in the next year:

	Economic Condition			
	High Growth	Low Growth	Stagnation	Recession
Probability	0.3	0.2	0.4	0.1
Return (Raj Co.)	20	18	25	28
Return (DK Co.)	25	20	18	16

As an intern at the firm, you are required to prepare a note showing the calculation of expected return and standard deviation for the following cases:

1. Rs. 1200 in the equity stock of Raj Co.
2. Rs. 1200 in the equity stock of DK Co.
3. Rs. 600 in the equity stock of Raj Co. and Rs. 600 in the equity stock of DK Co.
4. Rs. 900 in the equity stock of Raj Co. and Rs. 300 in the equity stock of DK Co.

Numerical 2

You are a student of an elective course on financial management. Recently, the course instructor discussed about the concept of beta. As a stock market enthusiast, you are interested in calculating beta of Golden Co and also draw up a characteristic line for the same company. For this purpose, you collected the following information:

Year	Return on Golden Co (%)	Return on Market Portfolio (%)
1	4	5
2	-2	2
3	6	6
4	11	7
5	5	6
6	8	11
7	2	-2
8	8	9
9	7	6
10	9	9
11	4	5

Numerical 3

You are interested in investing in two stocks, namely, KL Ltd. and VK Ltd. For this purpose, you want to calculate standard deviation, covariance and coefficient of correlation between the returns on the stock of KL Ltd. and VK Ltd. You have information about the probabilistic returns on both the stocks for 4 different situations.

Situation	Probability	Return on KL Ltd (%)	Return on VK Ltd (%)
1	0.4	-0.5	2
2	0.3	2	2.5
3	0.2	3	3
4	0.1	2.5	4

Numerical 4

According to a report, stocks of RS Ltd, AP Ltd, MS Ltd and JB Ltd have been performing well over a few years. You are interested in investing in at least one stock and thus want to calculate return for portfolios consisting of any one stock, two stocks, three stocks and four stocks respectively. Assume equal proportion of investment in each stock in a given portfolio. You have the following information on the returns of these 4 stocks for a period of 6 years:

	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)
RS Ltd	7	9	-9	12	-3	17
AP Ltd	5	1	12	9	7	3

MS Ltd	4	5	9	6	7	9
JB Ltd	6	6	8	1	5	13

Practice Numericals

Numerical 5

"DPR" equity analyst firm is analysing two companies, namely, DP Ltd. and E&C Ltd. Based on their preliminary research, during recessionary period, the stock of DP Ltd company gives better returns, while the stock of E&C Ltd performs better during the growth period, relative to the stocks of other companies. The current market price of the stocks of both the companies is Rs. 10 per stock.

The firm further collects additional information about the rupee return (dividend plus price change) of both the stocks in the next year:

	Economic Condition			
	High Growth	Low Growth	Stagnation	Recession
Probability	0.4	0.2	0.3	0.1
Return (DP Ltd)	11	10	12	14
Return (E&C Ltd)	15	13	10	8

The firm intends to prepare a note showing the calculation of expected return and standard deviation for the following cases:

1. Rs. 200 in the equity stock of DP Ltd.
2. Rs. 200 in the equity stock of E&C Ltd.
3. Rs. 100 in the equity stock of DP Ltd. and Rs. 100 in the equity stock of E&C Ltd.
4. Rs. 140 in the equity stock of DP Ltd. and Rs. 60 in the equity stock of E&C Ltd.

Numerical 6

Kuber is an IT professional. He is inclined to learn concepts related to stock market. Recently, he learnt about the concept of beta. He thought of applying

the concept by calculating beta of FCA Co and also draw up a characteristic line for the same company. For this purpose, he collected the following information:

Year	Return on FCA Co (%)	Return on Market Portfolio (%)
1	9	12
2	-3	3
3	18	15
4	30	12
5	12	15
6	24	30
7	3	-3
8	21	24
9	18	15
10	24	24
11	9	12

Numerical 7

You are interested in investing in two stocks, namely, SS Ltd. and AB Ltd. For this purpose, you want to calculate standard deviation, covariance and coefficient of correlation between the returns on the stock of SS Ltd. and AB Ltd. You have information about the probabilistic returns on both the stocks for 4 different situations.

Situation	Probability	Return on SS Ltd (%)	Return on AB Ltd (%)
1	0.4	-5	10
2	0.3	15	15
3	0.2	20	15
4	0.1	25	20

Numerical 8

According to a report, stocks of JR Ltd, AR Ltd, HR Ltd and KR Ltd have been performing well over a few years. As a stock market enthusiast, you are interested in evaluating the return of different portfolios consisting of any one stock, two stocks, three stocks and four stocks respectively. Assume equal proportion of investment in each stock in a given portfolio. You have the following information on the returns of these 4 stocks for a period of 6 years:

	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)
JR Ltd	18	22	-14	28	-2	38
AR Ltd	14	6	28	22	18	10
HR Ltd	12	14	22	16	10	22
KR Ltd	16	16	20	6	14	30