**RISK AND RETURN PROBLEMS AND SOLUTIONS**

**Illustration 1:**

Calculate the expected rate of return from the following information relating to B Ltd.

|  |  |  |
| --- | --- | --- |
| **State of the Economy** | **Probability of Occurrence** | **Rate of Return** |
| Boom  Normal  Recession | 0.30  0.50  0.20 | 40%  30%  20% |

**Solution:-**

Expected Rate of Return = 

= 0.30 x 40 + 0.50 x 30 + 0.20 x 20

= 12 + 15 + 4

= 31%

**Illustration 2:**

An investor would like to find the expected return on the share of Golden Ltd. The following data have been available:

|  |  |  |
| --- | --- | --- |
| **State of the Economy** | **Probability of Occurrence** | **Rate of Return (%)** |
| Boom  Normal  Recession | 0.30  0.50  0.20 | 30  18  10 |

Calculate the expected return from the share.

**Solution:-**

Expected Rate of Return = 

= 0.30 x 30 + 0.50 x 18 + 0.20 x 10

= 9 + 9 + 2

= 20%

**Illustration 3:**

Given below are the likely returns in case of shares of VCC Ltd. and LCC Ltd. in the various economic conditions. Both the shares are presently quoted at Rs. 100 per share.

|  |  |  |  |
| --- | --- | --- | --- |
| **Economic**  **Conditions** | **Probability** | **Returns of**  **VCC Ltd.** | **Returns of**  **LCC Ltd.** |
| High Growth  Low Growth  Stagnation  Recession | 0.3  0.4  0.2  0.1 | 100  110  120  140 | 150  130  90  60 |

Which of the two companies are risky investments?

**Solution:-**

**VCC Ltd.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Economic Condition | P | R |  |  |  |  |
| High Growth | 0.3 | 100 | 30 | – 12 | 144 | 43.2 |
| Low Growth | 0.4 | 110 | 44 | – 2 | 4 | 1.6 |
| Stagnation | 0.2 | 120 | 24 | 8 | 64 | 12.8 |
| Recession | 0.1 | 140 | 14 | 28 | 784 | 78.4 |
|  |  |  | 112 |  |  | Variance 136 |

 Expected Return = 112%

Risk = Standard deviation = =  = 11.66%

**LCC Ltd.**

*Genius ain't anything more than elegant common sense.*

*... Josh Billings*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Economic Condition | P | R |  |  |  |  |
| High Growth | 0.3 | 150 | 45 | 29 | 841 | 252.30 |
| Low Growth | 0.4 | 130 | 52 | 9 | 81 | 32.40 |
| Stagnation | 0.2 | 90 | 18 | – 31 | 961 | 192.20 |
| Recession | 0.1 | 60 | 6 | – 61 | 3721 | 372.10 |
|  |  |  | 121 |  |  | Variance 849 |

 Expected Return = 121%

Risk = Standard deviation = =  = 29.14%

|  |  |  |
| --- | --- | --- |
|  | **VCC Ltd.** | **LCC Ltd.** |
| Return  Risk (σ) | 112%  11.66% | 121%  29.14% |

**Comment :**

1. The risk in LCC is more than VCC Ltd.
2. The choice of an Investor totally depends upon the risk return profile of the Investors.

An Investor, who is willing to take risk, would invest in LCC, since the return is higher.

An Investor who is willing to take less risk, will Invest in VCC Ltd.