Risk

Risk is a term which refers to the probable disadvantageous, undesirable or unprofitable outcome of a fortuitous event, an event which is not desired, but nevertheless taking place. Risk is the chance of financial loss or more formally, the variability of returns associated with a given assets. Now, define the risk according to different scholars –

According to C.P. Jones, "Risk is defined as the chance that the actual outcome of an investment will differ from the expected outcome."

According to Khan & Jain, "Risk is to the variability of the actual return from the expected returns associated with a given asset."

According to J.C. Van Horn, "Risk is defined as the variability of possible return from a project."

According to J.F Weston & E.F Brigham, "Risk is the chance that some unfavorable events will occur."

Therefore, risk is defined as (1) the chance of loss, (2) the possibility of loss, (3) uncertainty, (4) the dispersion of actual from expected results, or (5) the probability of any outcome different from the one expected.

Distinguish between Risk and Uncertainty

Following are the major differences discuss –

Subject Matter	Risk	Uncertainty
Definition	Risk is the chance that some unfavorable events will occur.	If no information is available to formulate a probability distribution of the cash flows the situation is known as uncertainty.
Probability distribution	In case of risk, probability distribution of the cash flows of an investment proposal is known.	In case of uncertainty, probability distribution of the cash flows of an investment proposal is unknown.
Avoid ability	Risk can be measured by mathematical formula & models, so it can be avoid.	Uncertainty cannot be measured so it is difficult to avoid.
Relationship with income	There is a positive relationship between risk and income (return)	Uncertainty cannot measure so there have no option to income.

Measurement Techniques	There are various tools used to measure the risk such as Standard deviation, Variance, Range, Quartile deviation.	There is no technique for measuring the uncertainty.
Definitional advantage	Risk can measure so it can define easily and clearly.	It's so difficult to define the uncertainty.

Classification of Risk

Risk can be classified as follows:

1. ***Firm Specific Risks:***

   Business Risk: The chance that the firm will unable to cover its operating costs is called business risk.

   Financial Risk: The chance that the firm will be unable to cover its financial obligations is called financial risk.

2. ***Shareholders Specific Risks:***

   Interest Rate Risk: The chance that changes in interest rates will adversely affect the value of an investment is called interest risk.

   Market Risk: The chance that the value of an investment will decline because of market factors that are independent of the investment is called market risk.

   Liquidity Risk: The chance that an investment cannot be easily liquidated at a reasonable price.

3. ***Firm and Stockholder Risks:***

   Event Risk: The chance that a totally unexpected event will have a significant effect on the value of the firm or a specific investment.

   Purchasing Power Risk: The chance that changing price levels caused by inflation or deflation in the economy will adversely affect the firm's or investment's cash flows and value.

   Exchange Rate Risk: Exchange rate risk can be defined as the variability in returns on security caused by currency fluctuations. In other way, the chance that returns will be affected by changes in exchange rate because investments have been made in international markets.

Tax Risk: The chance, that unfavorable change in tax laws will occur. Firms and investments with value that are sensitive to tax law changes are more risky.

Sources of Risks

Risks	Sources/ Components
Systematic Risk/Unavoidable Risk/ Non-diversifiable Risk/ Uncontrollable Risk/Unique Risk	1. Liquidity Risk 2. Market Risk 3. Interest Rate Risk 4. Event Risk 5. Purchasing Power Risk 6. Exchange Rate Risk 7. Tax Risk
Unsystematic Risk/Avoidable Risk/ Diversifiable Risk/Controllable Risk/Common Risk	1. Business Risk 2. Financial Risk 3. Credit Risk

Note: Explanation is same as classification.

Return

Return is defined as any outcome of an investment. In other way, the total gain or loss experienced on an investment over a given period of time. It is calculated by dividing the asset's cash distributions during the period, plus change in value, by its beginning-of-period investment value.

According to Van Horne, "Return is the income received on an investment plus any change in market price."

According to Khan and Jain, "The return on an asset/investment for a given period is the annual income received plus any change in the market price."

According to I.M. Panday, "Return on a security consists of the dividend yield and capital gain."

Components of Return

Investments offer two potential sources of returns, income and price changes to be more specific yield and capital gains or loss.

Income or Yield: Income or yield is the rate of return that investors earn if they buy a stock or bond at specific price and hold it until to a certain period. For the common or preferred stocks, these returns are cash dividends received and bond holders & money market investors received interest during the period.

Capital gain or loss: If an investor sells a capital assets (stock or bond) for more than its initial purchase price, the difference between the sale price and the purchase price is called a capital gain. If investor's sells it for; the decrease in value is a capital loss. Investment held for more than a year provides long-term gain or losses.

Return = Income Yield + Capital gain/loss

$$R = \frac{D + (P1 - P0)}{P0}$$