

Unit II — Portfolio Theory: Risk, Return & Markowitz

Investment and Portfolio Management | BMB FM 01 / KMBN FM 01

Unit II: Portfolio Theory — Risk, Return and Portfolio Selection

Syllabus: Risk and return — concept of risk, components and measurement of risk, covariance, correlation; fundamental analysis — economic, industry and company analysis; portfolio risk and return; beta as a measure of risk, calculation of beta; selection of portfolio — Markowitz's theory, Single Index Model.

Exam Blueprint (2022–2025 papers)

Topic	Years asked	Marks
Components and measurement of risk	2022, 2025	2 & 7
Systematic vs Unsystematic risk	2022, 2024, 2025	2 & 7
Markowitz's Portfolio Theory	2024, 2025	2, 7 & 10
Beta as a measure of systematic risk	2024, 2025	2 & 7
Markowitz vs Single Index Model	2024	10
Fundamental analysis — Economic, Industry, Company	2022, 2024	10
Risk premium, purchasing power risk	2022	2

YE QUESTION BAAR-BAAR AAYA HAI

Markowitz theory aur **systematic vs unsystematic risk** — ye do lagbhag har paper me hain. Aur **beta ka formula** yaad rakhna, kyunki numerical bhi aa sakta hai.

1. Return — Concept and Measurement

DEFINITION - RATTA MAARO

Return is the **total gain or loss** on an investment over a period, expressed as a percentage of the amount invested. It has two components: **current income (dividend/interest)** and **capital appreciation (change in price)**.

1.1 Formulas for Return

Holding Period Return (HPR):

$$\text{HPR} = \frac{(P_1 - P_0) + D}{P_0} \times 100$$

$$P_0$$

where P_0 = purchase price, P_1 = selling price, D = dividend received

Example: Bought at Rs. 100, sold at Rs. 115, dividend Rs. 5. $HPR = [(115 - 100) + 5] / 100 = 20\%$

Expected Return of a single security (probability-weighted):

$$E(R) = \sum P_i \times R_i \quad (\text{sum of probability} \times \text{return for each outcome})$$

Expected Return of a portfolio (weighted average):

$$E(R_p) = \sum W_i \times E(R_i) \quad \begin{array}{l} \text{where } W_i = \text{proportion of funds in security } i \\ \text{and } \sum W_i = 1 \end{array}$$

Example: 60% in A (expected return 15%) and 40% in B (expected return 10%). $E(R_p) = 0.6 \times 15 + 0.4 \times 10 = 9 + 4 = 13\%$

YAHAN 90% STUDENTS GALTİ KARTE HAIN

Portfolio return is a simple weighted average of individual returns — but portfolio RISK is NOT. Ye is poore unit ka sabse important insight hai, aur yahi diversification ka poora aadhaar hai.

1.2 Risk Premium

DEFINITION - RATTA MAARO

Risk premium is the **excess return** an investor expects over the **risk-free rate**, as compensation for bearing the additional risk of a security.

$$\text{Risk premium} = \text{Expected return} - \text{Risk-free rate} = E(R) - R_f$$

(A 2-mark question in 2022-23.) The risk-free rate is normally taken as the return on **government treasury bills**, since they carry no default risk.

2. Risk — Concept, Components and Measurement

DEFINITION - RATTA MAARO

Risk is the **variability or uncertainty of actual returns around the expected return**. It is the probability that the actual outcome will differ from what was expected — including the possibility of loss.

(A 2-mark question in 2025-26 — keep this definition ready.)