



RAMA UNIVERSITY

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FACULTY OF COMMERCE AND MANAGEMENT

COURSE: BBA (DM)

SUBJECT: SECURITY AND PORTFOLIO MANAGEMENT

SUBJECT CODE: BBA (DM) 602

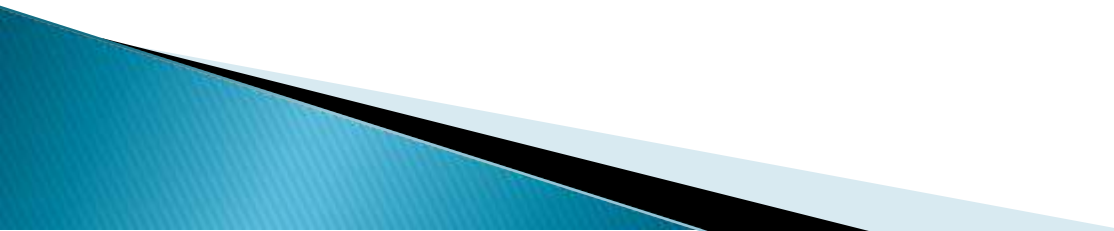
LECTURE: 19

NAME OF FACULTY: DR. NITIN GUPTA

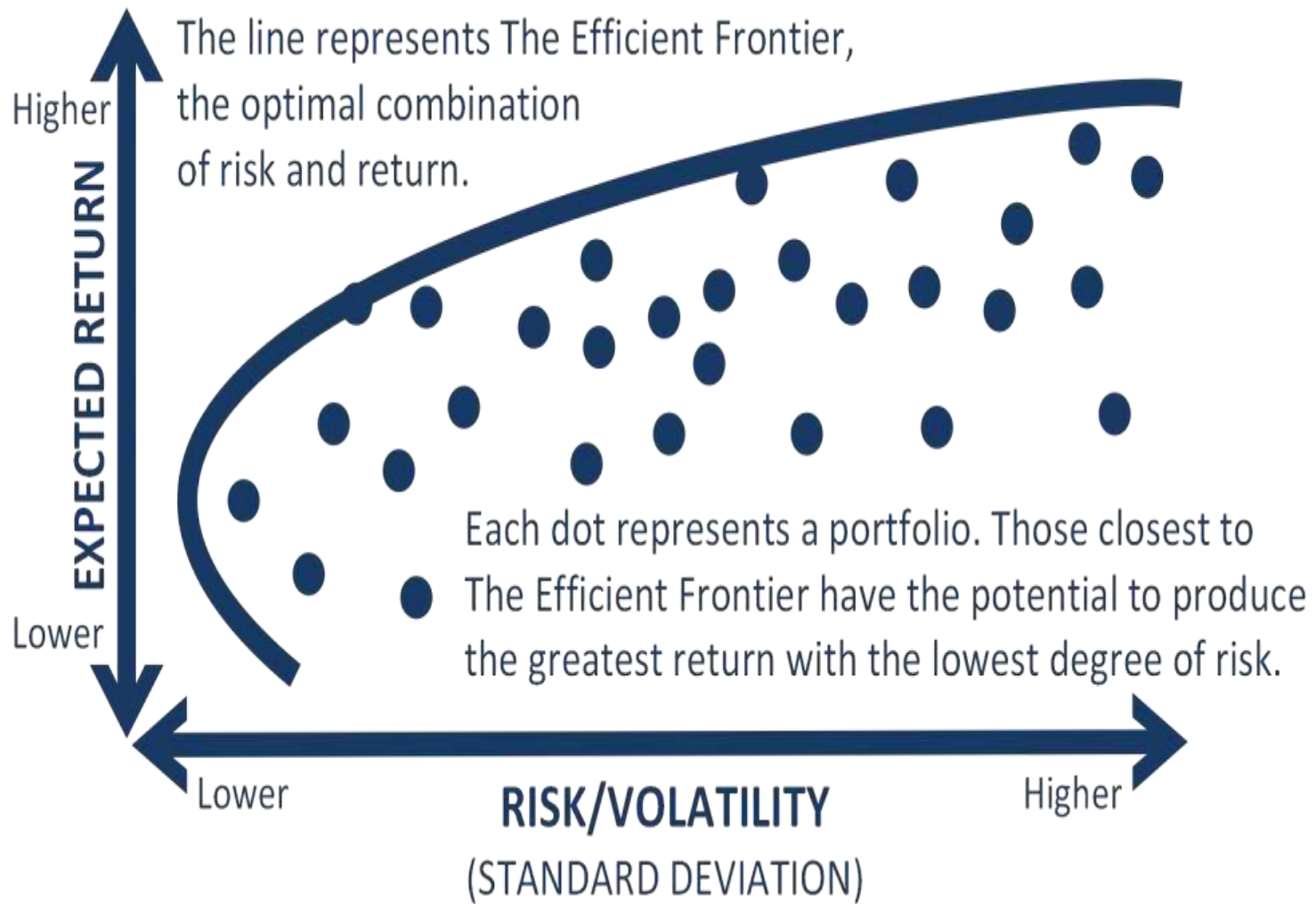
Assumption of the Markowitz Theory

1. The market is efficient and all investors have in their knowledge all the facts about the stock market and so an investor can continuously make superior returns either by predicting past behavior of stocks through technical analysis or by fundamental analysis of internal company management or by finding out the intrinsic value of shares. Thus, all investors are in equal category.
2. All investors before making any investments have a common goal.
This is the avoidance of risk because they are risk averse.
3. All investors would like to earn the maximum rate of return that they can achieve from their investments.

4. Markowitz brought out the theory to find out how the security returns are correlated to each other. By combining the assets in such a way that they give the lowest risk maximum returns could be brought out by the investor.
5. The investors base their decisions on the expected rate of return of an investment. The expected rate of return can be found out by finding out the purchase price of a security dividend by the income per year and by adding annual capital gains.
6. From the above, it is clear that every investor assumes that while making an investment he will combine his investments in such a way that he gets a maximum return and is surrounded by minimum risk.

7. The investor can reduce his risk if he adds investment to his portfolio.
 8. The investor assumes that greater or larger the return that he achieves on his investments, the higher the risk factor surrounds him. On the contrary, when risks are low the return can also be expected to be low.
 9. An investor should be able to get higher return for each level of risk “by determining the efficient set of securities”.
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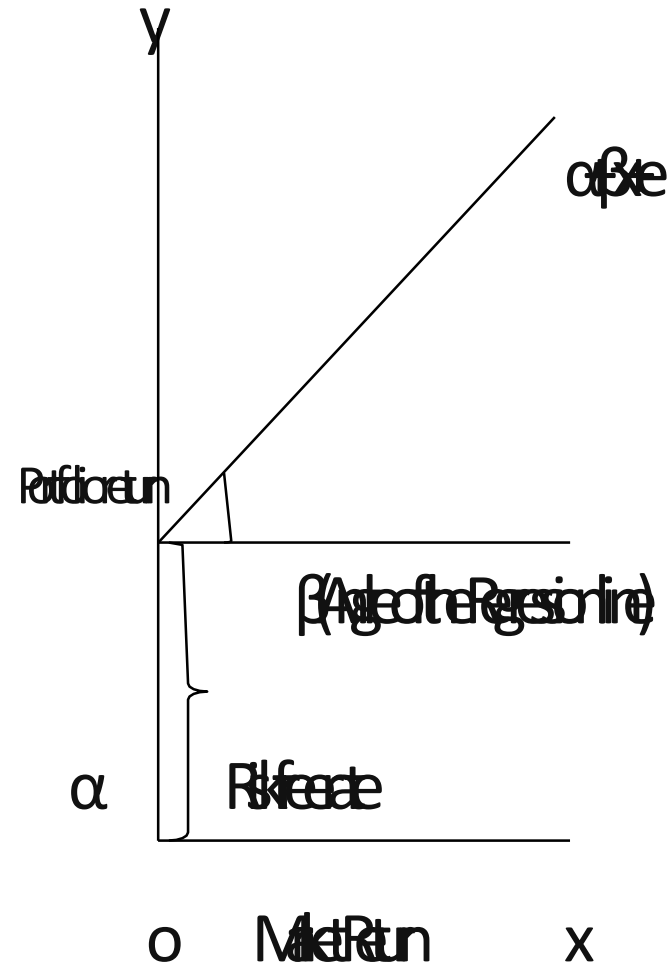
Markowitz Efficient Frontier



- The chart above shows a **hyperbola showing all the outcomes for various portfolio combinations of risky assets**, where Standard Deviation is plotted on the X-axis and Return is plotted on the Y-axis.
- The Straight Line represents a **portfolio of all risky assets and the risk-free asset**, which is usually a government bond.
- **Tangency Portfolio** is the point where the **portfolio of only risky assets meets the combination of risky and risk-free assets**. This portfolio maximizes return for the given level of risk.
- Portfolio along the lower part of the hyperbola will have lower return and eventually higher risk

Treynor based his formula on the concept of characteristic line. this line is the least squares regression line relating to the risk and beta is the slope of the line. the regression line takes the form of:

- $R_p = \alpha + \beta x + e$
- R_p is the return of portfolio,
- α is the intercept reflecting the risk free return
- β is the slope of the line and x is the market return and e is the error term.
- Thus, concept can be graphically represented as follows:
- Based on this characteristics line, Treynor's formula is



- $$T_n = \frac{R_n - R_f}{\beta}$$