



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: 16

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CAPITAL ASSET PRICING MODEL (CAPM)

CAPITAL MARKET LINE (CML)

- CML is capital allocation line provided by one-month T-bills as a risk-free asset and a market-index portfolio like Dow Jones, Standard and Poor's and NYSE, as risky asset
- It is one of the two elements of CAPM, the other being security market line (SML)
- CML indicates - Locus of all efficient portfolios; Risk-return relationship and measure of risk for efficient portfolios; Relationship between risk (standard deviation) and expected return for efficient portfolio is linear; Appropriate measure of risk for portfolio is standard deviation of returns on portfolio

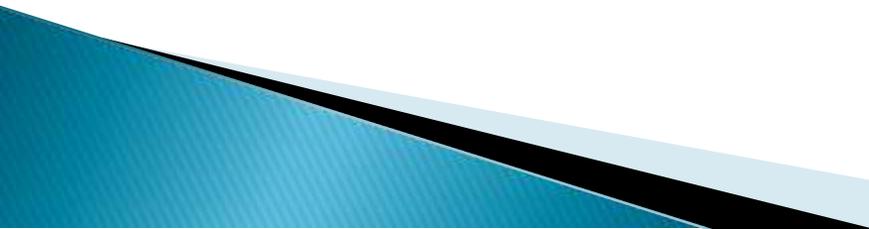
FUNCTIONS OF CML

- depicts risk-return relationship for efficient portfolios available to investors
- It shows the appropriate measure of risk for an efficient portfolios is the standard deviation of return on portfolio

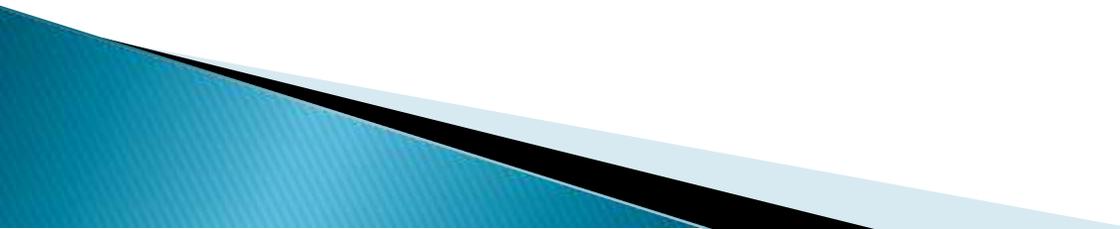
SECURITY MARKET LINE (SML)

- SML is a graphic depiction of CAPM and describes market price of risk in capital markets
- $E(r_i) = r_f + \beta (E r_m - r_f)$
- Expected return = Risk-free return + (Beta * Risk premium of market)
- On security i = Intercept + (Beta * Slope of SML)
- Risk premium on security i = Beta * Risk premium of market

CAPITAL ASSET PRICING MODEL (CAPM)

- CAPM is an equilibrium model of trade-off between expected portfolio return and unavoidable (systematic) risk; the basic theory that links together risk and return of all assets
 - It is a logical and major extension of portfolio theory of Markowitz by William Sharpe, John Lintner and Jan Mossin
 - It provides framework for determining the equilibrium expected return for risky assets
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IMPLICATIONS OF CAPM

- Risk-return relationship for an efficient portfolio
 - Risk-return relationship for an individual asset/security
 - Identification of under- and over-valued assets traded in the market
 - Effect of leverage on cost of equity
 - Capital budgeting decisions and cost of capital
 - Risk of firm through diversification of project portfolio
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ASSUMPTIONS OF CAPM

- All investors are price-takers. Their number is so large that
 - ▶ no single investor can afford prices
 - All investors use the mean-variance portfolio selection model of Markowitz
 - Assets/securities are perfectly divisible
 - All investors plan for one identical holding period
 - Homogeneity of expectation for all investors results in identical efficient frontier and optimal portfolio
 - Investors can lend or borrow at an identical risk-free rate
 - There are no transaction costs and income taxes
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