RAMA UNIVERSITY

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FACULTY OF COMMERCE AND MANAGEMENT

COURSE: BBA (DM)

SUBJECT: SECURITY AND PORTFOLIO MANAGEMENT

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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 Linterner and Jan Mossin
- It provides framework for determining the equilibrium expected return for risky assets

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

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