Capital Asset Pricing Model

Does the Capital Asset Pricing Model Work?

Bruno Asobo
Siege Lehman
Ihar Zubovich

Intro

The capital asset pricing model (CAPM) is an idealized portrayal of how financial markets price securities and thereby determine expected returns on capital investments

The model provides a methodology for quantifying risk and translating that risk into estimates of expected return on equity

Capital Asset Pricing Model

- It considers only systematic risk
- Explains the behaviour of security price
- Suggest the determination of price securities
- Refers that the securities are valued line

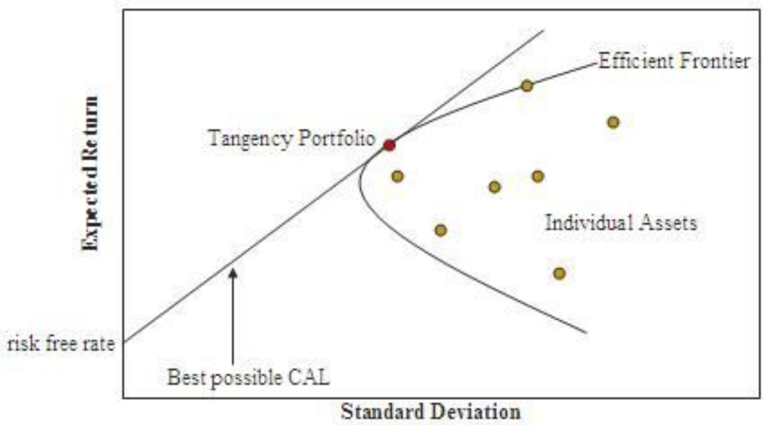
$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

where:

- $E(R_i)$ is the expected return on the capital asset
- R_f is the risk-free rate of interest such as interest arising from government bonds
- β_i (the *beta*) is the sensitivity of the expected excess asset returns to the expected excess market returns,

Security Market Line

- Expresses the basic term of CAPM
- It upward sloping straight line with an intercept at the risk free return securities and passes through the market portfolio
- It displays the expected rate of return of an individual security



Benefits of CAPM

- Ease-of-Use
- Diversified Portfolio
- Systematic Risk
- Business and Financial Risk Variability

Drawbacks of CAPM

- Risk-Free Rate
- Return on the Market
- Ability to Borrow at Risk-Free Rate
- Determination of Project Proxy Beta

Jupyter Notebook Demo

Final point

Imperfect, But Useful

- CAPM represents a new and different approach to an important task
- Our test of the model confirm that it has much to say about the way returns are determined in financial markets
- CAPM's deficiencies appear no worse than those of other approaches.
- Financial decision makers can use the model in conjunction with traditional techniques and sound judgment to develop realistic, useful estimates of the costs of equity capital.

CAPM helps us to calculate investment risk and what return on investment we should expect

No matter how much diversify our investment, it's impossible to get rid of risks.