Finance 4335 Portfolio and Capital Market Theory
Outline and Study Questions

Here is a summary of the key points from the *Portfolio and Capital Market Theory* reading, along with Study Questions and Answers:

Portfolio Theory

- Portfolio expected return and risk calculations
  - Use expected returns, standard deviations, and covariances of individual securities to calculate portfolio expected return and risk
- Mean-variance efficiency
  - Efficient frontier: the subset of portfolios that maximize expected return for a given level of risk
  - Determine efficient frontier using mathematical programming
  - Investors select portfolios to maximize expected utility based on risk aversion
- Optimal portfolio selection
  - Tangency portfolio: point of tangency between the efficient frontier and the investor's highest indifference curve
  - More risk averse investors select portfolios on the lower part of the efficient frontier

Capital Market Theory

- All risk-return tradeoffs are equal
  - In equilibrium, the risk-return tradeoff is equal for all securities
- Capital Asset Pricing Model (CAPM)
  - Expected return = risk-free rate + beta*(market risk premium)
  - Beta measures the sensitivity of security to market movements

    - Securities with higher betas have higher expected returns
- Equilibrium processes
    - Buying undervalued assets and selling overvalued assets causes expected returns to return to the CAPM equilibrium.

Key Formulas

- Portfolio variance equation: $\sigma_p^2 = \sum_{i=1}^{n}\sum_{j=1}^{n} w_i w_j \sigma_{ij}$
- CAPM equation: $E(r_i) = r_f + \beta_i (E(r_M) - r_f)$

Here are some potential study questions and answers:

Study Question	Answer
How is a portfolio's expected return calculated?	As a weighted average of the expected returns of the individual securities in the portfolio.
What is the efficient frontier?	The set of portfolios that offer the highest expected return for each level of portfolio risk.
How can an investor determine their optimal portfolio?	Find the tangency portfolio between their highest indifference curve and the efficient frontier.
What does the CAPM state?	The expected return on a security is equal to the risk-free rate plus beta times the market risk premium.
What causes mispriced securities to return to CAPM equilibrium?	The process of investors bidding up undervalued securities and selling overvalued securities.