Slides 13 - Empirical Evidence on Security Returns

1. a. Which of the following practices used by the financial community show that the implications of CAPM and APT have been widely accepted?

   Check all that apply:

   - [x] Many firms provide a rating for portfolio managers based on the reward-to-volatility ratios they maintain relative to the CML.
   - [x] Many firms provide a rating for portfolio managers based on their average returns compared to the CML.
   - [ ] Expected alpha is often used in order to analyze bond prices.
   - [ ] Expected alpha is often used by portfolio managers in order to evaluate the attractiveness of a given asset.
   - [x] The return/beta relationship is widely used by regulatory commissions in order to determine the cost of capital for regulated firms.

   There are several practices used by the financial community that show that implications of CAPM and APT have been widely accepted. For example, many firms provide a rating for the portfolio managers based on the reward-to-volatility ratios they maintain relative to the CML or their average returns compared to the CML. Also, the return/beta relationship is widely used by regulatory commissions in order to determine the cost of capital for regulated firms.

2. a. Which of the following variables are used to explain stock returns in the Fama-French three-factor model?

   Check all that apply:

   - [x] Return on the market index
   - [x] Company size (market capitalization)
   - [x] Company price-to-book ratio
   - [ ] Industry size
   - [ ] Interest rate

   The three variables used to explain stock returns in the Fama-French three-factor model are:

   1. The return on the market index
   2. Company size (market capitalization)
   3. Company price-to-book ratio

3. a. Which of the following steps were used to test the implications of the CAPM in the early simple tests?

   Check all that apply:

   - [x] Collecting sample data
   - [x] Estimating the security characteristic line (SCL)
   - [ ] Estimating the expected alpha
   - [ ] Testing the explanatory power
   - [x] Estimating the security market line (SML)

   The early simple tests used three steps to test the CAPM: Collecting sample data, estimating the security characteristic line (SCL) and estimating the security market line (SML).

4. a. Which of the following statements are true about the results of the early simple tests on the CAPM?

Check all that apply:

- [x] The SML was less steep than predicted by the CAPM.
- [ ] The SML was steeper than predicted by the CAPM.
- [ ] The intercept was equal to 0, as predicted by the CAPM.
- [x] The intercept was greater than 0, contradicting the CAPM.
- [ ] The slope of the SML was negative.

Results of the early simple tests on the CAPM were only partially consistent with the CAPM. The slope of the SML line was positive, but less than predicted by the CAPM (the SML was too flat) and the intercept was greater than 0, unlike the CAPM prediction of 0.

5. a. Which of the following statements are part of Roll's critique?

Check all that apply:

- [x] The CAPM holds when performance is measured against a mean-variance efficient market portfolio.
- [ ] The CAPM is testable using the S&P 500 as a proxy for the market portfolio.
- [x] The CAPM is testable only if we know the exact composition of the true market portfolio.
- [ ] Average excess returns can be explained by nonsystematic risk.
- [ ] Average excess returns can be explained by three main factors called factor loadings.

Roll's critique refers to the analysis of the validity of empirical tests of the capital asset pricing model (CAPM). Some of the following statements are part of Roll's critique: The CAPM holds when performance is measured against a mean-variance efficient market portfolio. The CAPM is testable only if we know the exact composition of the true market portfolio. The linear relationship between beta and the expected return is not independently testable because it follows from the assumption of market portfolio efficiency.

b. Which of the following statements is true about the benchmark error?

Check all that apply:

- [x] It refers to the use of an incorrect proxy for the market portfolio in tests of the CAPM.
- [ ] It implies that using T-bills as a benchmark for the risk-free rate can be wrong.
- [ ] It implies that only the S&P 500 can be used as a proxy for the market portfolio.
- [x] It implies that using different proxies for the market portfolio can lead to different conclusions.
- [x] It implies that the benchmark portfolio can be mean-variance efficient even when the true market portfolio is not.

The benchmark error is part of Roll's critique. It refers to the use of an incorrect proxy for the market portfolio in tests of the CAPM. The proxy (benchmark portfolio) can be mean-variance efficient even when the true market portfolio is not. It also implies that using different proxies for the market portfolio can lead to different conclusions, even if these proxies are highly correlated with the market portfolio.