INVESTMENT DECISION PROCESS

WHAT WILL YOU LEARN?

- How is the investment decision process related to the mean-variance optimization?

INVESTMENT DECISION PROCESS

- 1. Capital allocation decision between the risky portfolio and the risk-free asset
- 2. Asset allocation decision in the risky portfolio across broad asset classes
- 3. Security selection of individual assets within each asset class

INVESTMENT DECISION PROCESS

- 1. Capital allocation decision between the risky portfolio and the risk-free asset
  - Determines an investor's risk exposure to risk.
  - Optimal capital allocation is determined by risk aversion and the expectations for the risk-return trade-off of the optimal risky portfolio

INVESTMENT DECISION PROCESS

- 2 + 3. Asset allocation decision in the risky portfolio across broad asset classes; Security selection of individual assets within each asset class
  - Construction of an efficient frontier and finding the combination of risky assets that maximizes the Sharpe ratio

ONE ADDITIONAL PRACTICAL POINT

- Some investors may be subject to additional constraints.
  - Restrictions on short positions
  - May require a minimum dividend yield
  - Socially responsible investing – ruling out investments in industries or countries considered ethically or politically undesirable
- At the expense of an inferior Sharpe ratio!

SUMMARY

- Capital allocation decision between the risky portfolio and the risk-free asset
  - Determines an investor's risk exposure to risk.
- Asset allocation decision – finding the optimal combination of risky assets
  - Determined by maximizing the Sharpe ratio

WHAT'S WRONG WITH MEAN-VARIANCE OPTIMIZATION?

WHAT WILL YOU LEARN?

- What are the short-comings of mean-variance optimization?

SHORTCOMING #1

- Only mean and variances matter.

SHORTCOMING #2

- Mean-variance preferences treat gains and losses symmetrically.

SHORTCOMING #3

- Risk aversion is constant.

SHORTCOMING #4

- Short horizon (one-period) vs. long-run

SHORTCOMING #5

- Garbage-in-garbage out: Mean-variance frontier is VERY sensitive to inputs.
  - Where should we get the inputs – estimates of expected returns and variances?

SUMMARY

- Mean variance preferences have several shortcomings.
- Solutions are extremely sensitive to inputs.