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Computational Investing, Part I

073: Capital Assets Pricing Model

Find out how modern electronic markets work, why stock prices change in the ways they do, and how computation can help our understanding of them. Learn to build algorithms and visualizations to inform investing practice.

CAPM: Implications

- Expected excess returns are proportional to beta.
- Beta of a portfolio = weighted sum of betas of components.

Portfolio Beta Example

CAPM Market Risk: Example

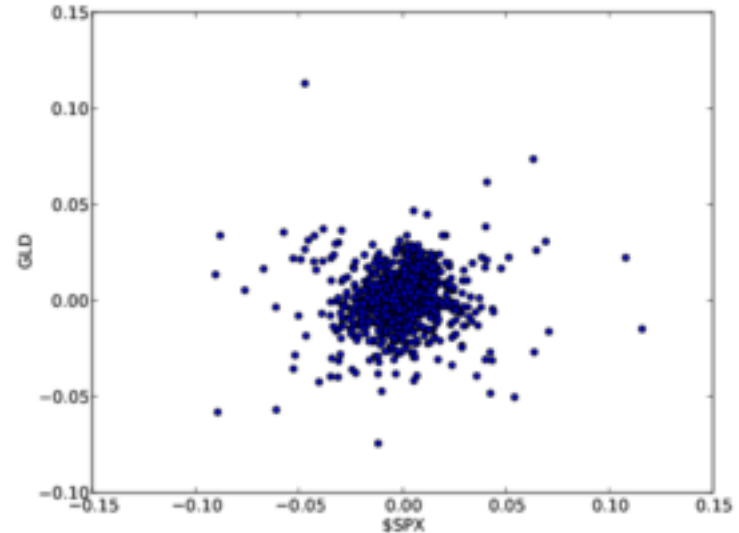
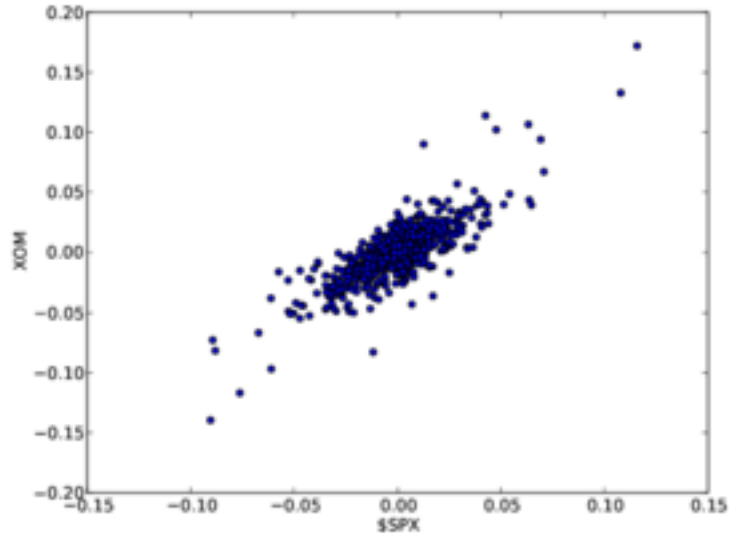
CAPM Market Risk: Example

CAPM Market Risk: Long & Short

Summary:

- Understand assumptions of the CAPM.
- Understand implications of the CAPM.
- Reading: Grinold & Kahn,
- chapter 2

Beta & Correlation with Market



CAPM: Expected Residual = 0

⊙ CAPM:

- $r_i(t) = \text{beta}_i * r_m(t) + \text{alpha}_i$
- $r_i(t) = \text{beta}_i * r_m(t) + \text{random}$

⊙ Active Portfolio Management View

- $r_i(t) = \text{beta}_i * r_m(t) + \text{alpha}_i$