

Cut-off portfolio

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Content

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- 2 Cut-off ratio
- 3 Example of application

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- It can very easy solve the problem with short sell ban

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- **Ultimately, it can be concluded that mutual covariances of assets are determined by their sensitivity to macroeconomic factors**

Simplifying the computational task

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$$E((r_i - \beta_i R_m)(r_j - \beta_j R_m)) = 0$$

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- The subsequent ranking of the ratio results determines the asset's suitability for portfolio creation

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- If a certain asset with $\frac{r_i - r_f}{\beta_i}$ is included in the portfolio, **all** available assets with **higher** ratio values will be part of the portfolio

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- If a certain asset with $\frac{r_i - r_f}{\beta_i}$ **is not** included in the portfolio, **all** other assets with **lower** ratio values will **not** be part of the portfolio

Portfolio creation - Short selling ban

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Procedure for choosing the optimal portfolio

- 1 Calculate the ratios ... $\frac{r_i - r_f}{\beta_i}$
- 2 Make ranking of the ratios
- 3 All assets that satisfy the following condition will be included to the portfolio:

$$\frac{r_i - r_f}{\beta_i} > C^*$$

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Determining C^*

The **cut-off**, or the last included asset according to the previous condition will with its C_j serve as the C^*

Determination of weights

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$$w_i = \frac{Z_i}{\sum_{i=1}^n Z_i}$$

Cut-off also for portfolio with allowed short selling

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$$C^* \dots C_n$$

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