

Lab2 - -Portfolio Theory - Abalfazl Zareei

Lab:

1. Draw the efficient frontier of risky assets
2. Find the tangency portfolio
3. Find the minimum variance portfolio
4. Draw the efficient frontier and the capital market line

Questions (Deadline: Two weeks after the lab course):

- 1 – Read the 30 industry portfolios from the Kenneth French Website
- 2– Select your opportunity set (simply choose a subset of assets that you are interested to invest in)
- 4– Estimate the Expected Returns and Covariance Matrix for these set of assets using the data from Jan 2000 to Dec 2010.
5. Find the Minimum-Variance Portfolio using the data from Jan 2000 to Dec 2010.
6. What is the Minimum-Variance Portfolio Return and Variance using the estimated values from Jan 2000 to Dec 2010.
7. Next, let's invest out-of-sample: **Invest based on the estimated portfolio weights of Minimum-Variance Portfolio from Jan 2011 to Dec 2018. What is the Portfolio Return, Variance and Sharpe Ratio.**
8. In the same period of Jan 2011 to Dec 2018, invest using a naïve 1/N rule. Compute the Portfolio Return, Variance and Sharpe Ratio.
9. Based on the Sharpe Ratios of Minimum Variance Portfolio and 1/N rule, which strategy you pick?