Foundation of Financial Economics Projects Descriptions

Project 1: Optimal Portfolios

This project focuses on constructing optimal portfolios using a dataset containing total return factors for five ETFs, including the iShares Core S&P 500 Index and iShares Gold Trust. Various portfolio optimization strategies are applied, including the calculation of the Minimum Variance Portfolio, Mutual Fund Theorem weights, Maximum Sharpe Ratio Portfolio (MSRP), and Global Minimum Variance Portfolio. These portfolios help analyze risk-return profiles and asset allocations across diverse asset classes like equities, bonds, and gold, offering insights into diversified investment strategies. The results showcase optimal weighting strategies that achieve either minimum variance or maximum risk-adjusted returns.

GitHub: Optimal portfolios code and output

Project 2: S&P 500 Mean Reversion and Predictability

This project examines mean reversion in U.S. equity returns and the predictive power of dividend yield for returns and dividend growth using a long-term dataset (1940-2023) on the S&P 500 and 3-month T-bill rates. Variance ratio tests and return predictability regressions across multiple horizons (1-10 years) suggest that higher dividend yields often predict stronger future returns, especially over longer horizons, with statistically significant results. However, dividend growth predictability regressions reveal a weak, inverse relationship with low explanatory power, indicating that dividend yield does not substantially forecast dividend growth.

GitHub: S&P 500 mean reversion and predictability code and output