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Combining Naive Diversification with Simple and Sophisticated Strategies

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Abstract

The research of DeMiguel, Garlappi, and Uppal (2009) revealed the shortcomings of 14 asset allocation strategies in comparison to naive diversification. This thesis investigates whether the combination of simple and sophisticated portfolio strategies with naive diversification is beneficial in dealing with estimation errors and improving the out-of-sample performance. For this reason, the out-of-sample performance, measured with the Sharpe ratio, certainty equivalent return and turnover, is evaluated with recent data and across five different empirical data sets. The estimation of the expected returns and the covariance matrix is carried out with fixed window rolling estimation. As a result, the analysis showed that the combinations of optimized strategies with naive diversification led to some performance improvement over the worse performing strategy, but mostly failed to outperform naive diversification. The combinations of simple strategies with naive diversification sometimes surpassed the naive benchmark, but often did no better than the simple strategy per se. The analysis conducted in this thesis improves over the research of DeMiguel, Garlappi, and Uppal (2009) in affirming the superior performance of a portfolio strategy over naive diversification. Further, it shows that forming beliefs about future performance helps to outperform the naive benchmark.

Keywords: naive diversification, shrinkage estimation, portfolio combination, estimation errors