

ORIE 5270: Big Data Technologies Project Proposal

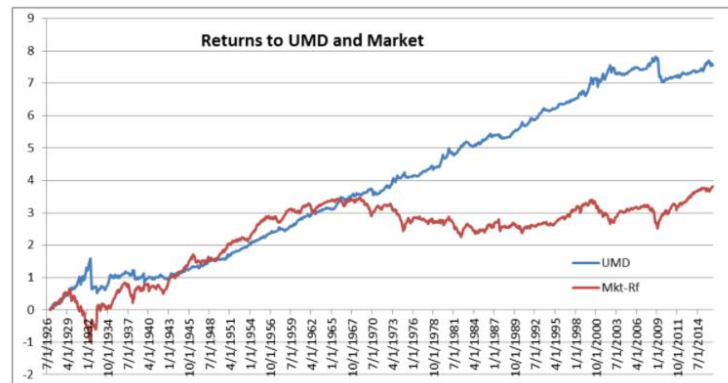
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Topic Title

- Quantitative investment strategy: Factor Model Portfolio Construction

Motivation for choosing the topic.

There are a lot of portfolio construction theories. For example, Markowitz mean variance portfolio optimization, Black litterman, factor model, etc. In the past several decades, many hedge funds have been very successful with factor model investment, such as value factor model and momentum factor model.



From the above graph(source: AQR and Ken French Data Library), we can see that momentum fund has much higher sharpe ratio(more return for one unit of risk) than the market excess return.

The data from the first part of the project contains only market information. Without accounting information, I can not replicate value factor. Therefore, I will implement vanilla momentum strategy and modify it by taking account of liquidity and transaction cost. In the end, result will be presented with bokeh. I will build a interface that gives user a choice for different transaction cost and universe selection models and present different corresponding backtest plots.