QF623: Portfolio Management Project

Objective: In this project, we aim to use ETFs to construct a strategy which maximizes Sharpe Ratio subject to some minimum portfolio risk. Price-volume data together with other fundamental characteristics of the ETFs can be downloaded from Yahoo Finance through a Python package called yfinance. The structure of the project is as follows:

1. Universe construction: Define and validate the choice of ETFs used in the strategy. Please exclude leveraged/inverse ETFs.
2. Strategy formulation: Describe the strategy used to generate the alpha signals for each ETF. Examples of a strategy are trend following and risk-parity approaches.
3. Portfolio construction: Long-only or long-short portfolio construction subject to a minimum risk of 3% such that the maximum absolute sum of portfolio weights is 100%. Long-short portfolios do not need to be strictly dollar-neutral. To be consistent, the risk calculation should be based on 1 year of daily returns.
4. Portfolio implementation: For any in-sample data up to close of time T, portfolio returns calculated should be from T+1 to T+2, i.e. portfolio rebalance implemented only at close of T+1
5. Performance Attribution: Identify key performance drivers. Quantify beta exposures to equity market factor and other common macro factors. Evaluate the effect of hedging on the overall portfolio performance.

Programming language: Python

Group size: To be decided