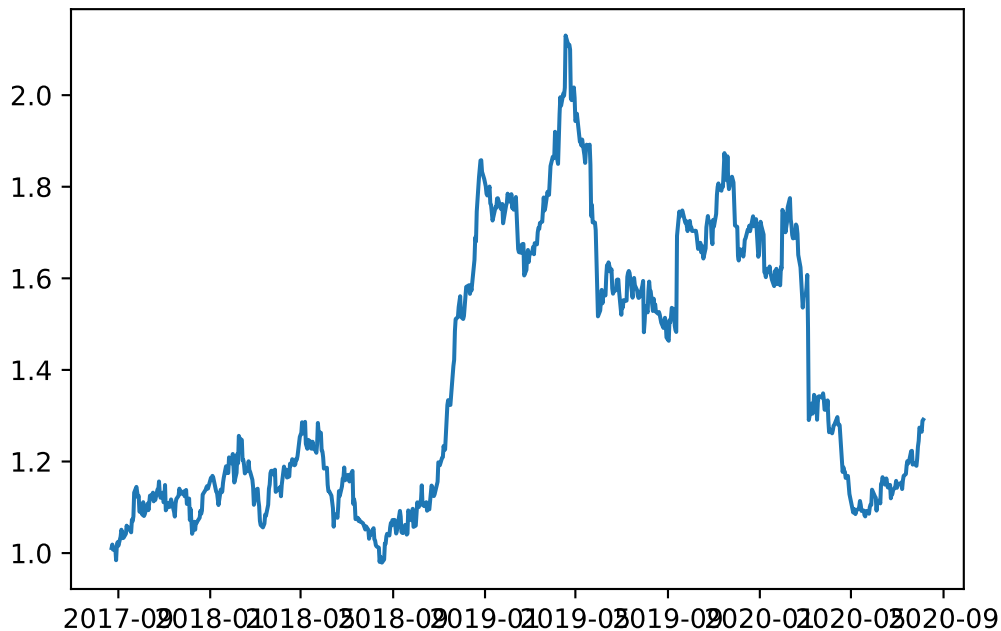
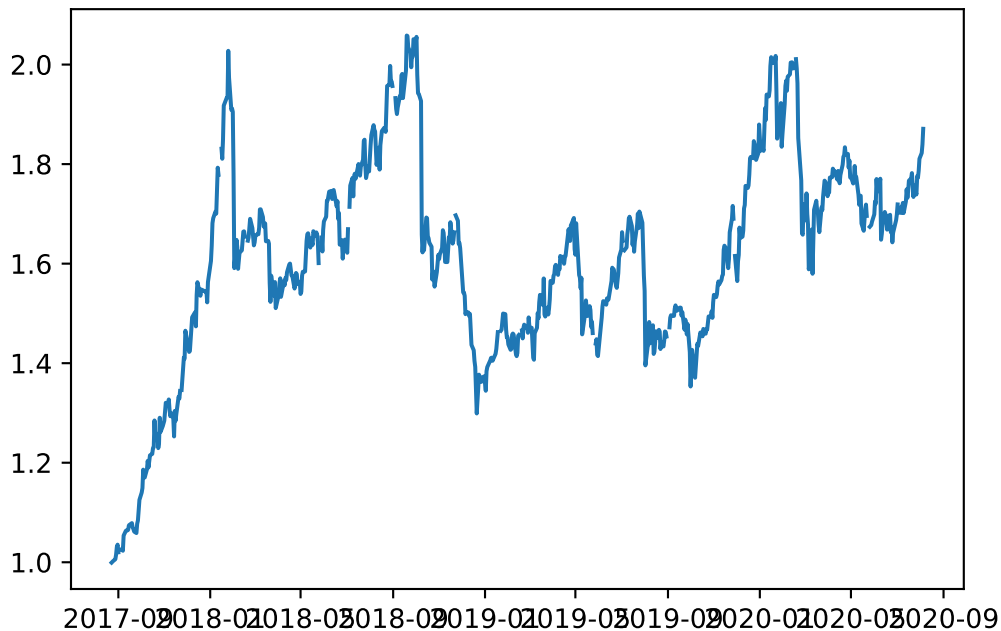


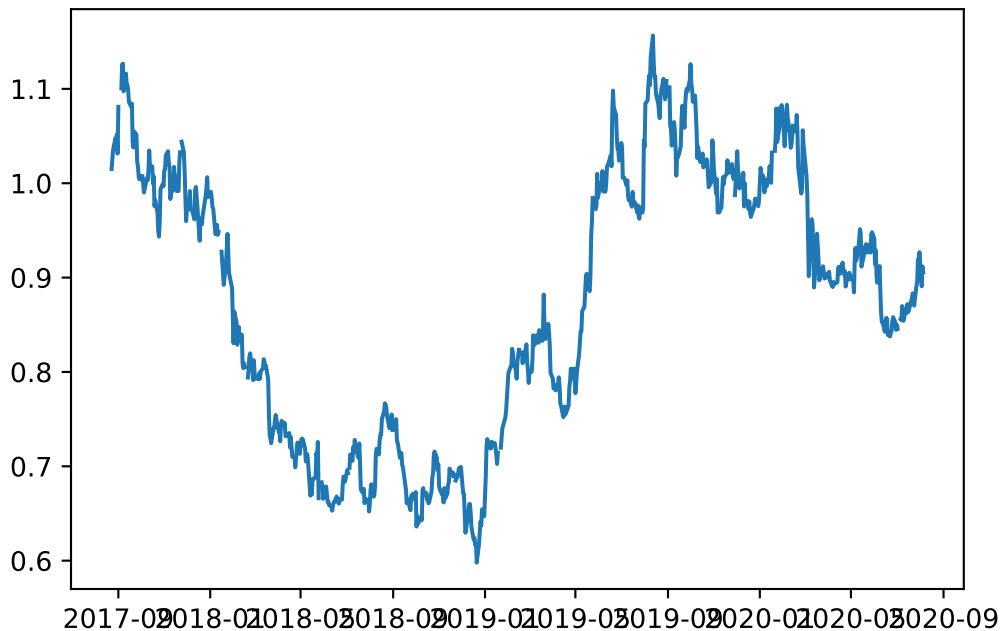
Out of sample results for \$1 invested with AdaBoost for CO1



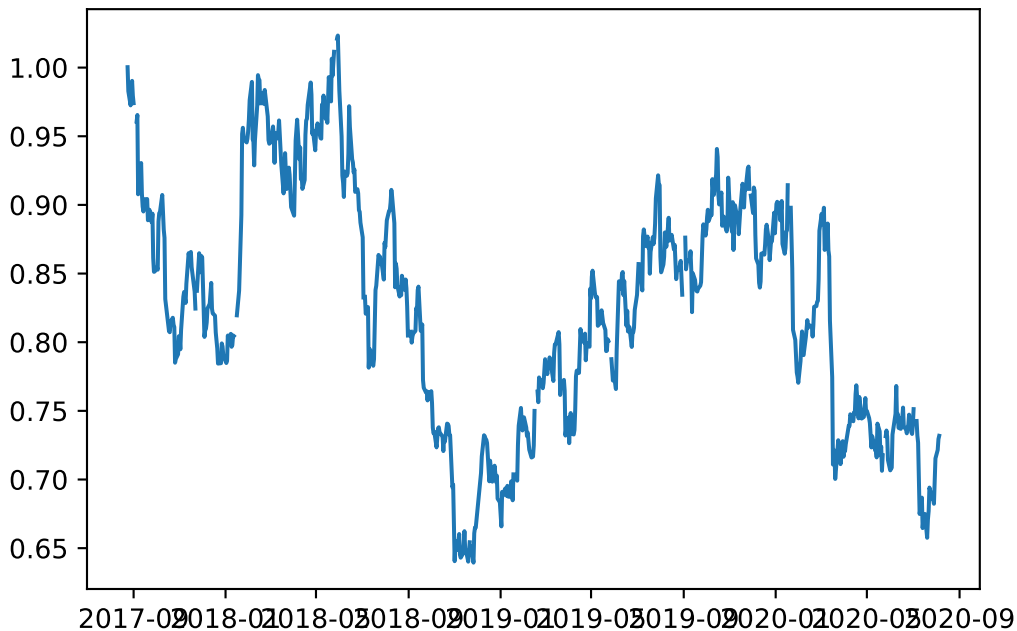
Out of sample results for \$1 invested with AdaBoost for SP1



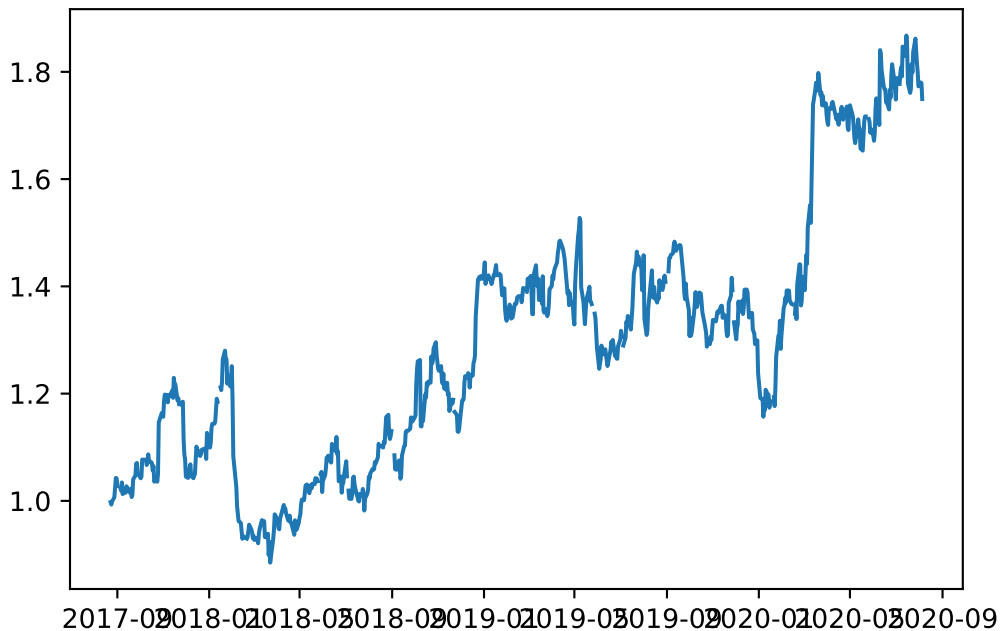
Out of sample results for \$1 invested with AdaBoost for TY1



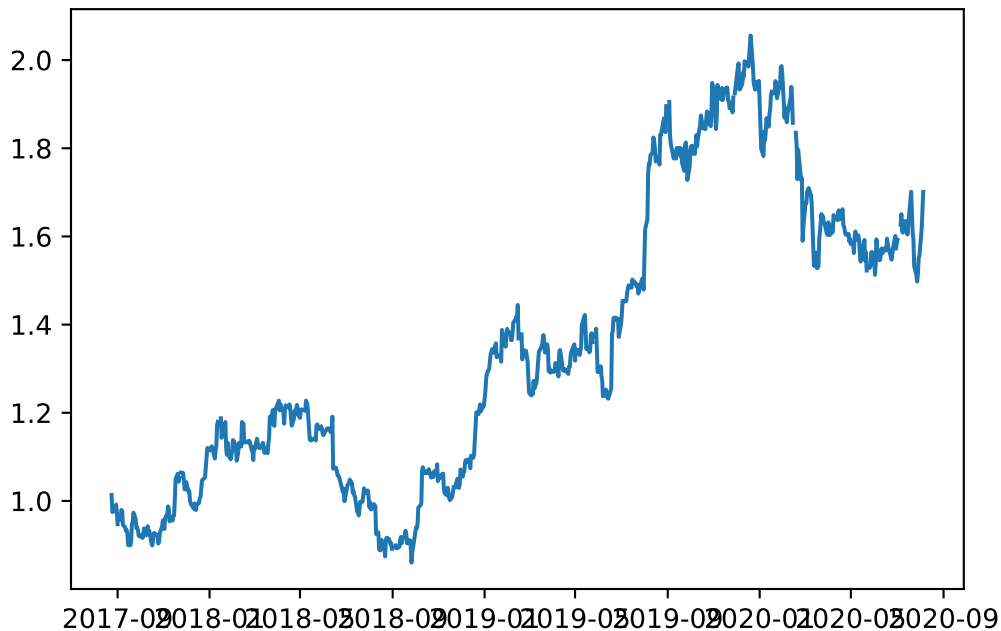
Out of sample results for \$1 invested with AdaBoost for HG1



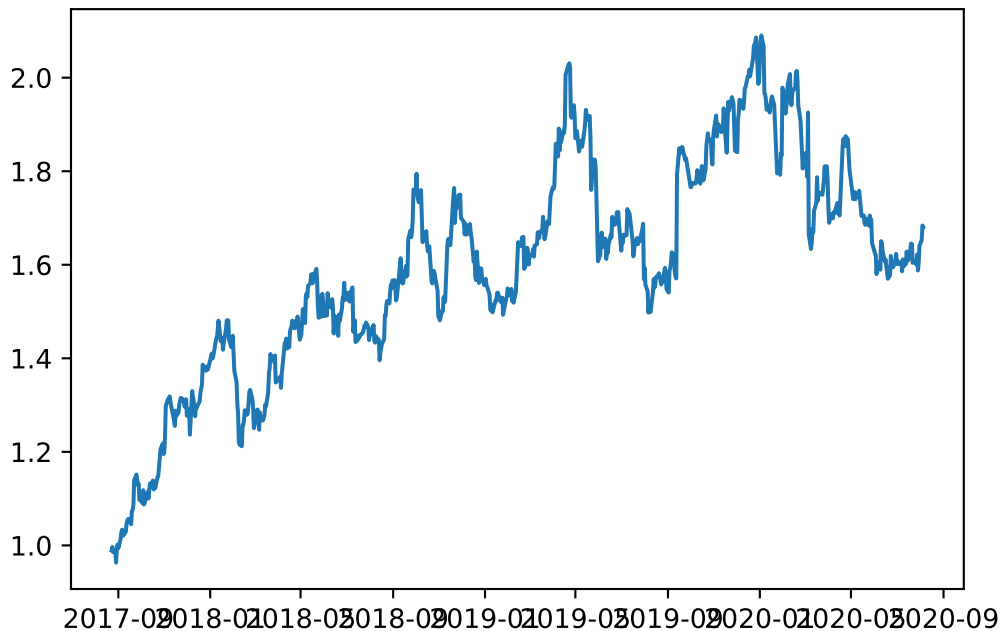
Out of sample results for \$1 invested with AdaBoost for NQ1



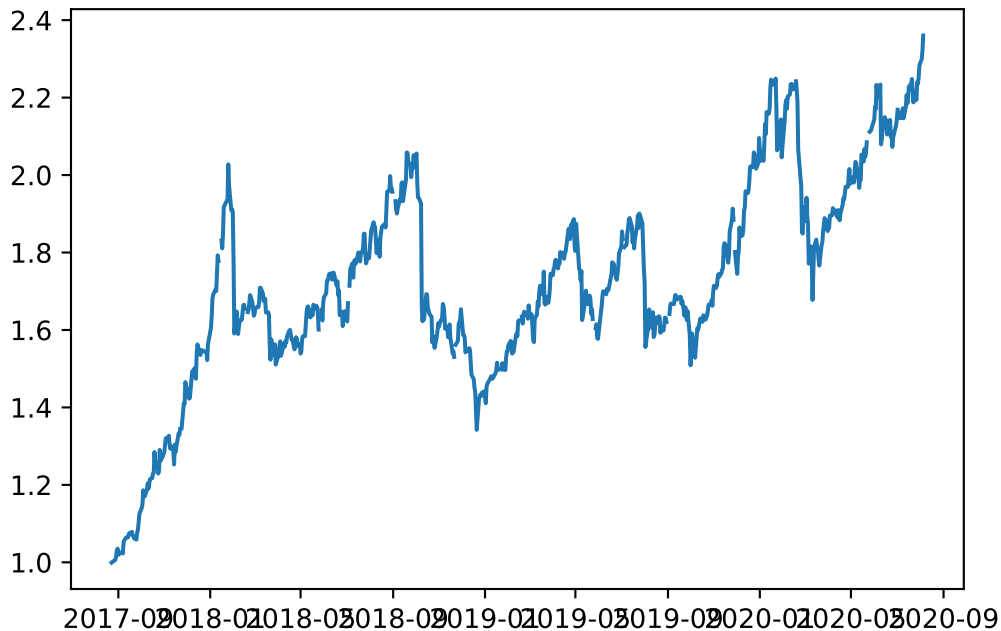
Out of sample results for \$1 invested with AdaBoost for GC1



Out of sample results for \$1 invested with Random Forest for CO1

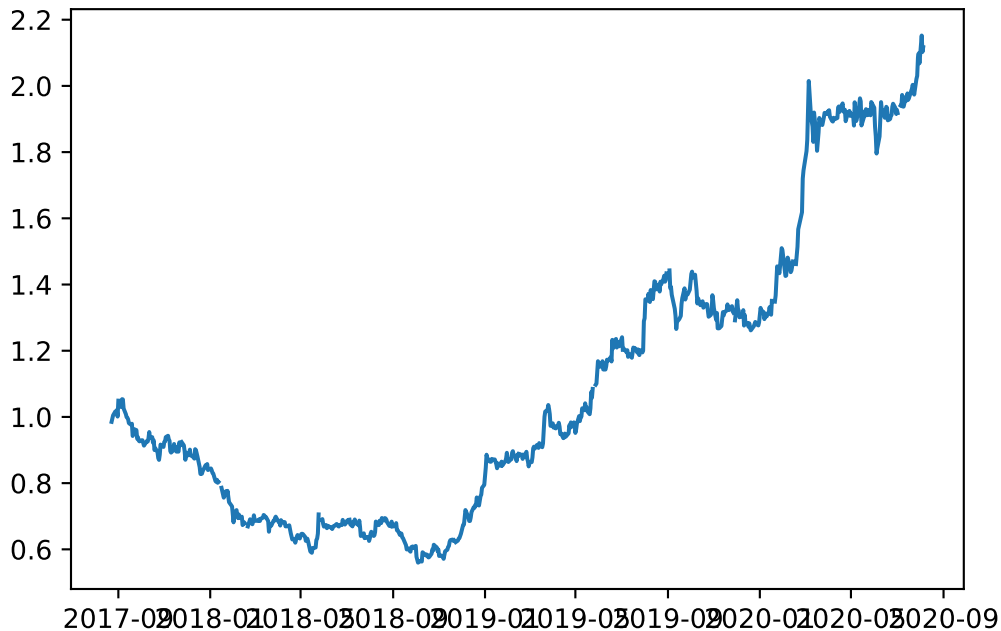


Out of sample results for \$1 invested with Random Forest for SP1

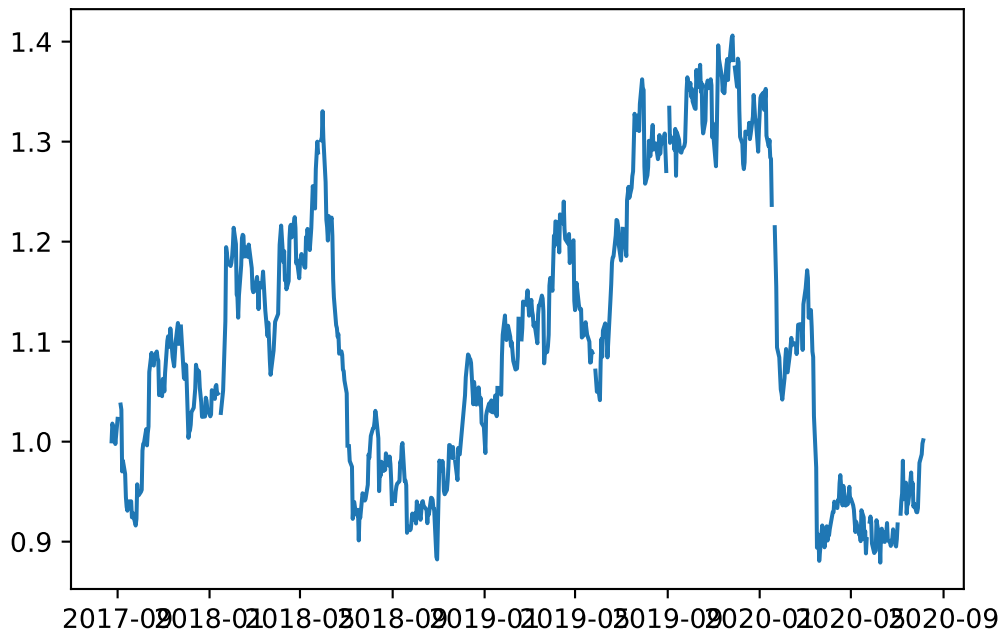




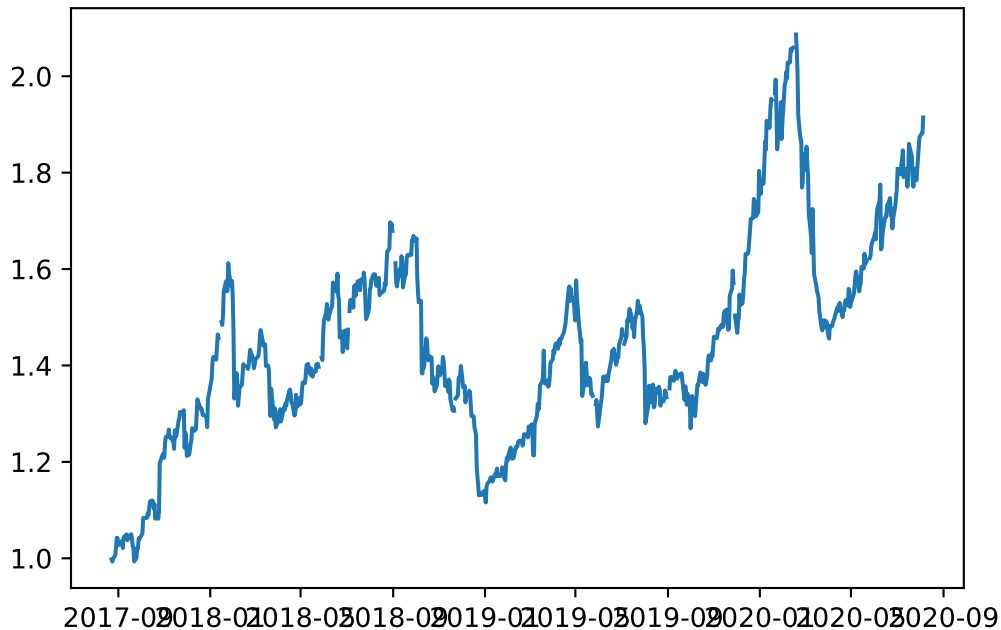
Out of sample results for \$1 invested with Random Forest for TY1



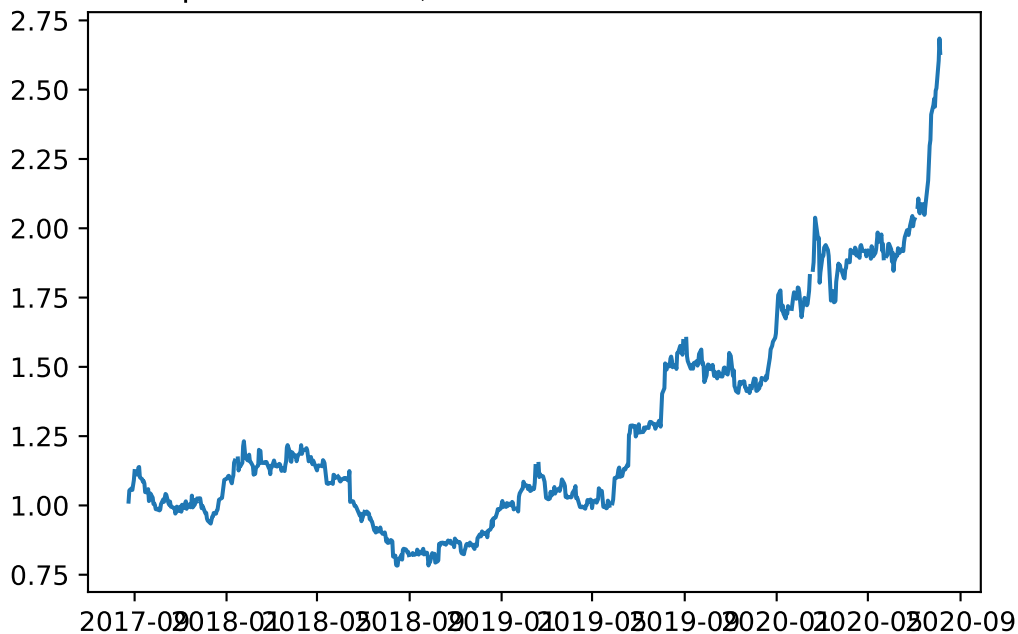
Out of sample results for \$1 invested with Random Forest for HG1



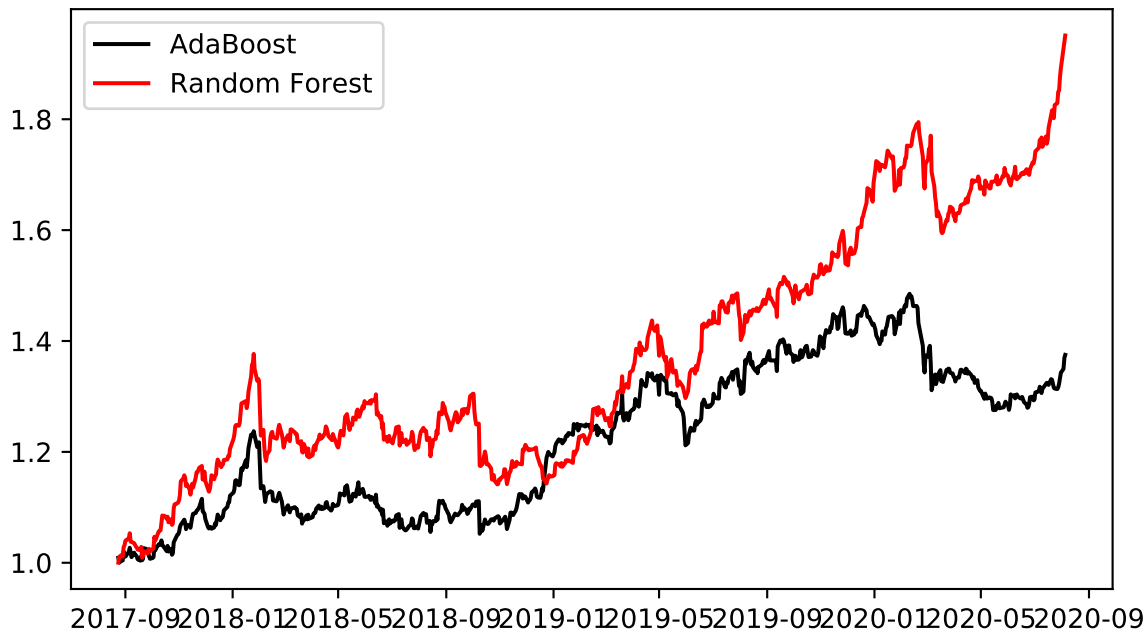
Out of sample results for \$1 invested with Random Forest for NQ1



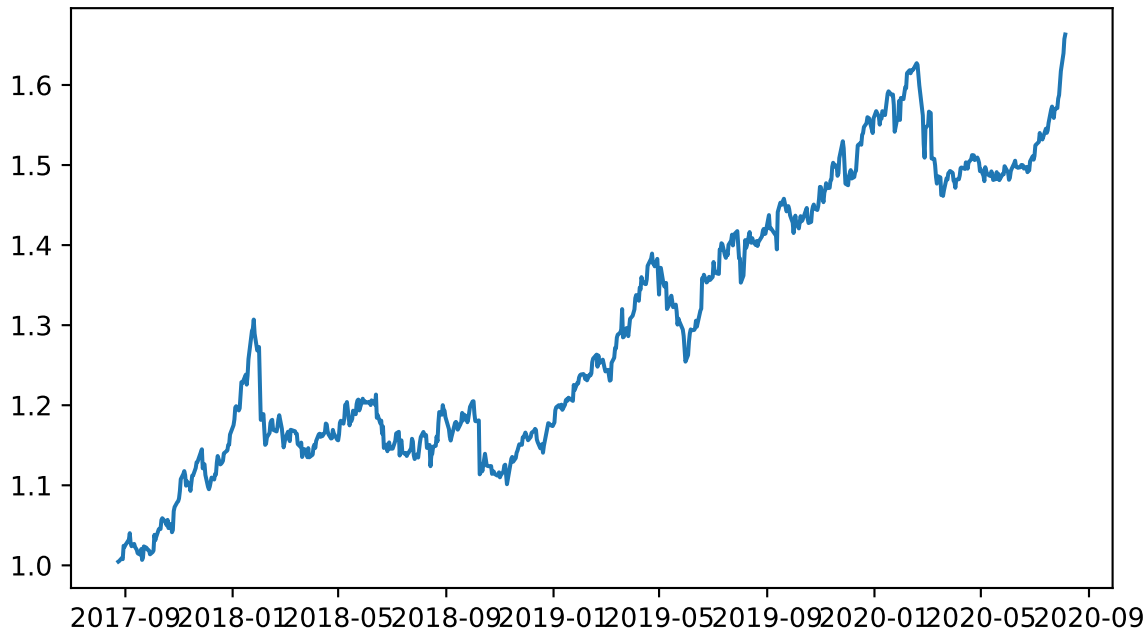
Out of sample results for \$1 invested with Random Forest for GC1



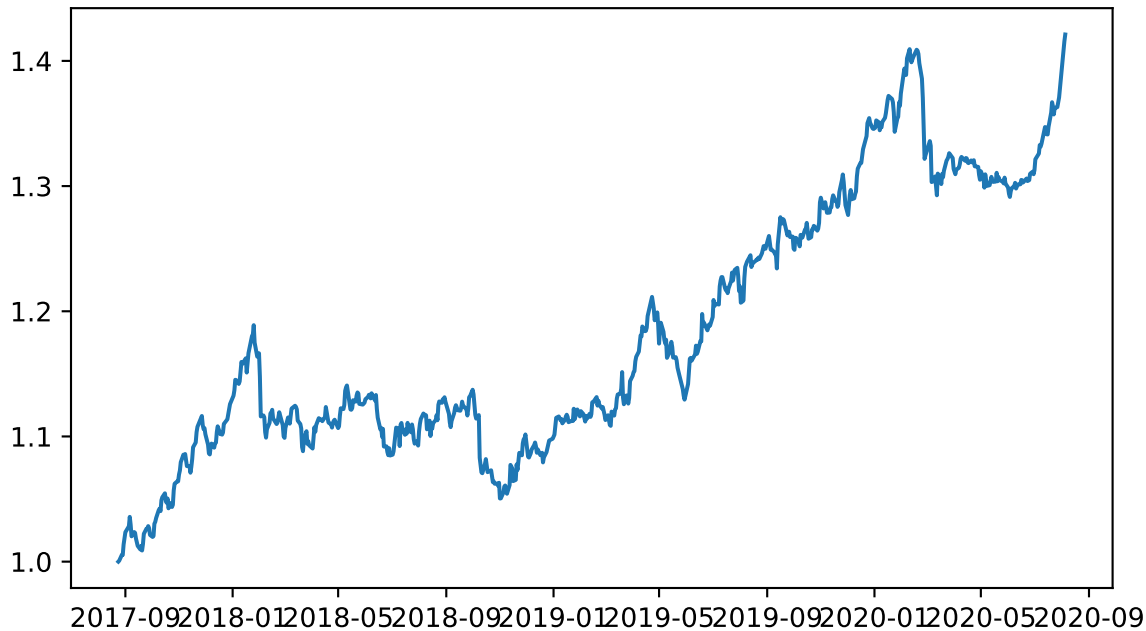
AdaBoost and Random Forest out of sample



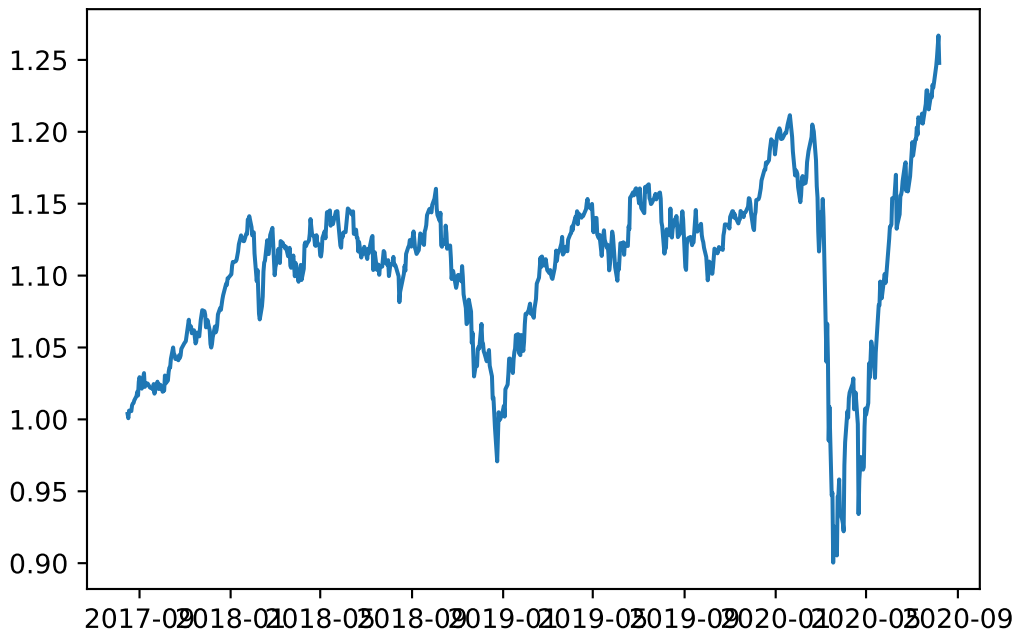
Average of ML models, weight1= 0.5, weight2= 0.5



Portfolio: 50% in ATS optimization + 25% in AdaBoost + 25% in Random Forest

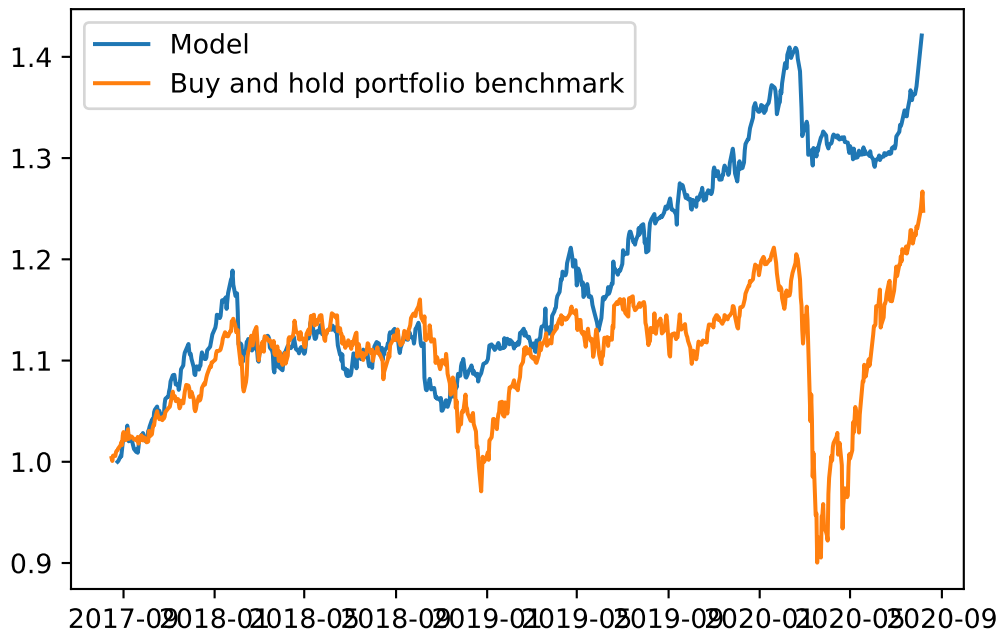


Buy and Hold portfolio of futures contract, rebalanced daily

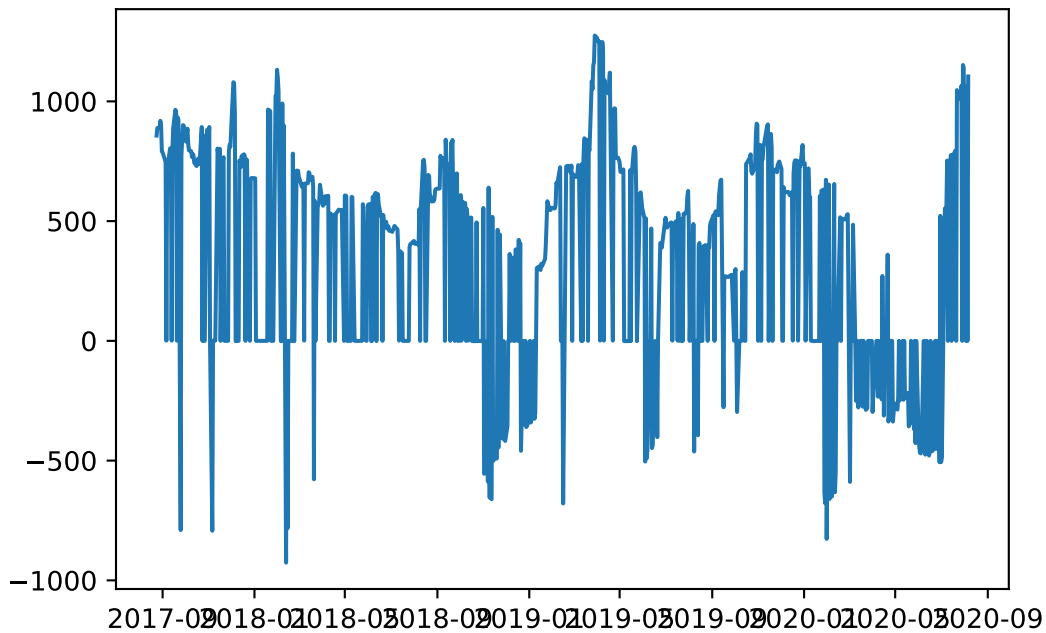




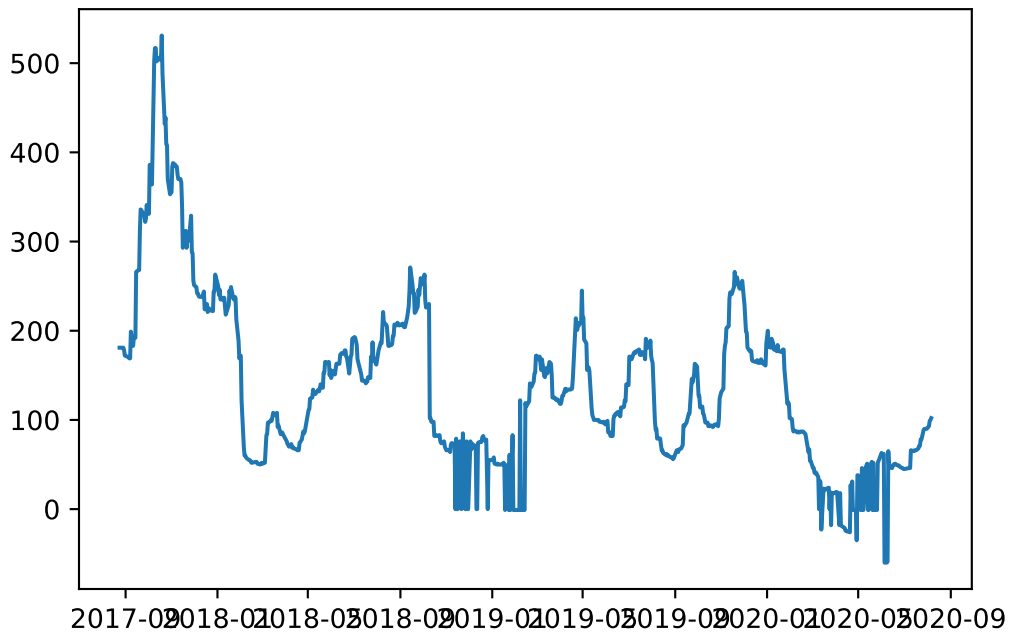
# Model vs Benchmark of Buy and Hold



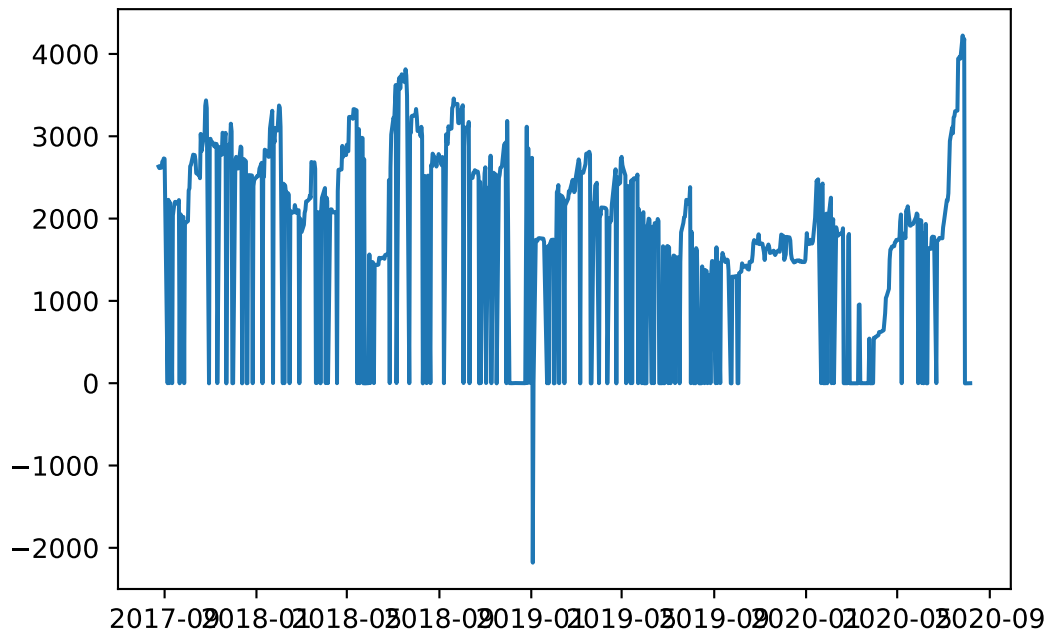
Positions CO1



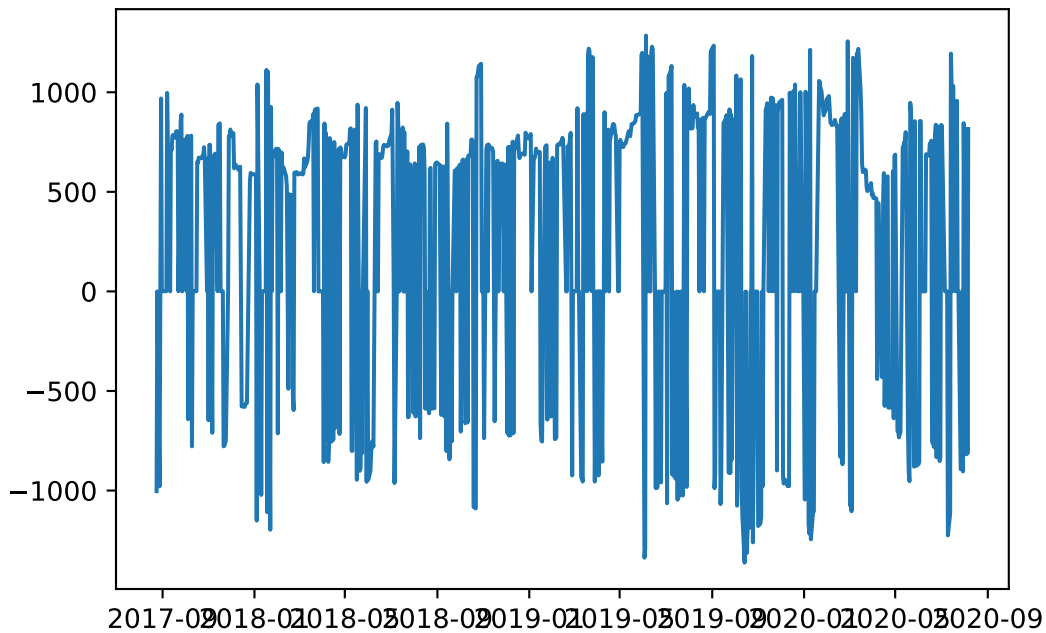
## Positions SP1



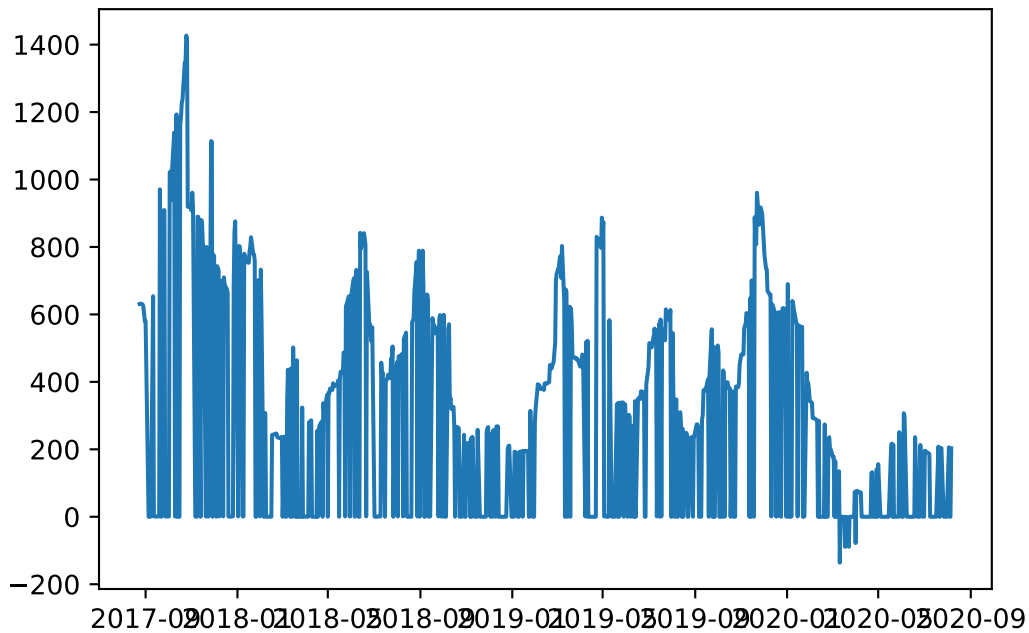
Positions TY1



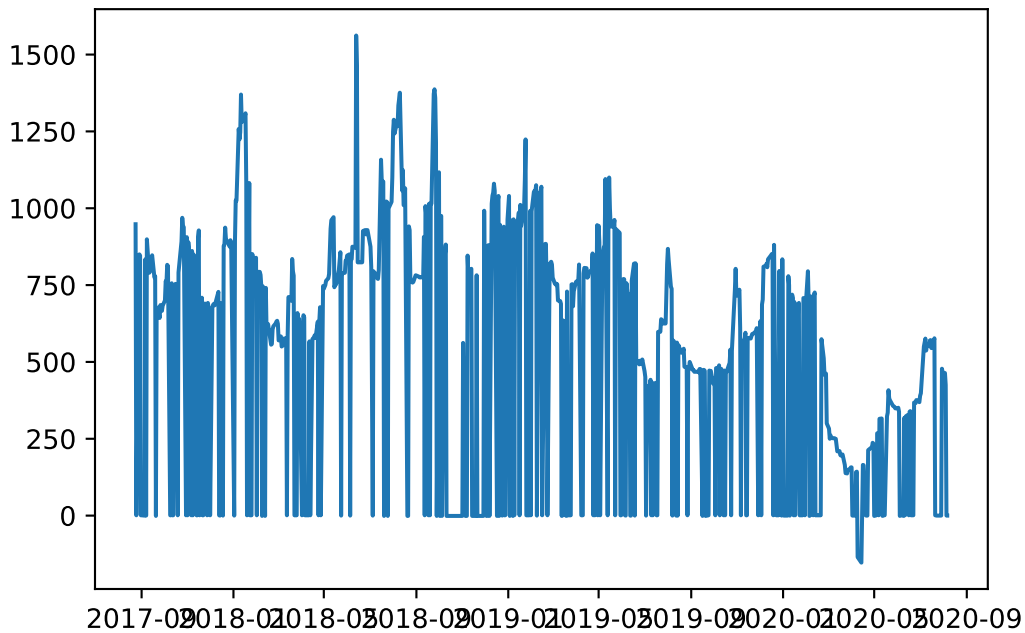
Positions HG1



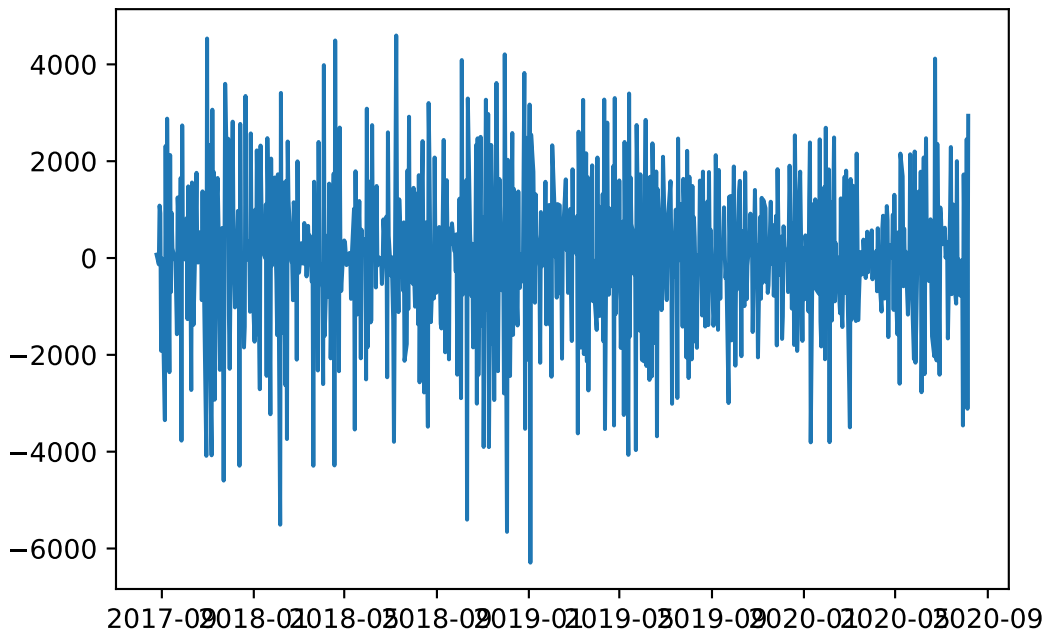
Positions NQ1



Positions GC1

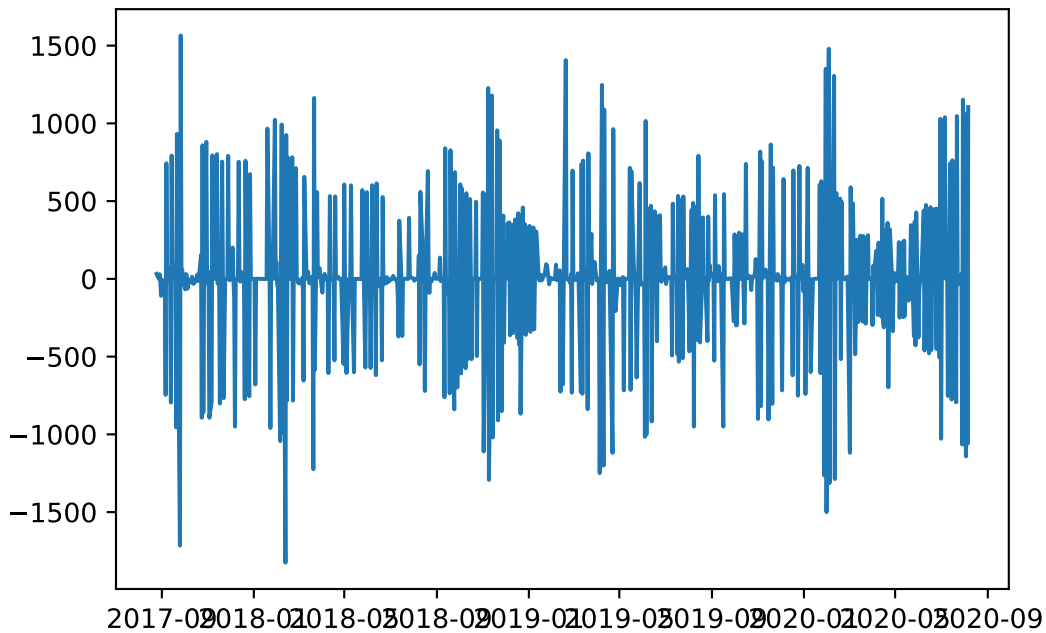


Total lots trades

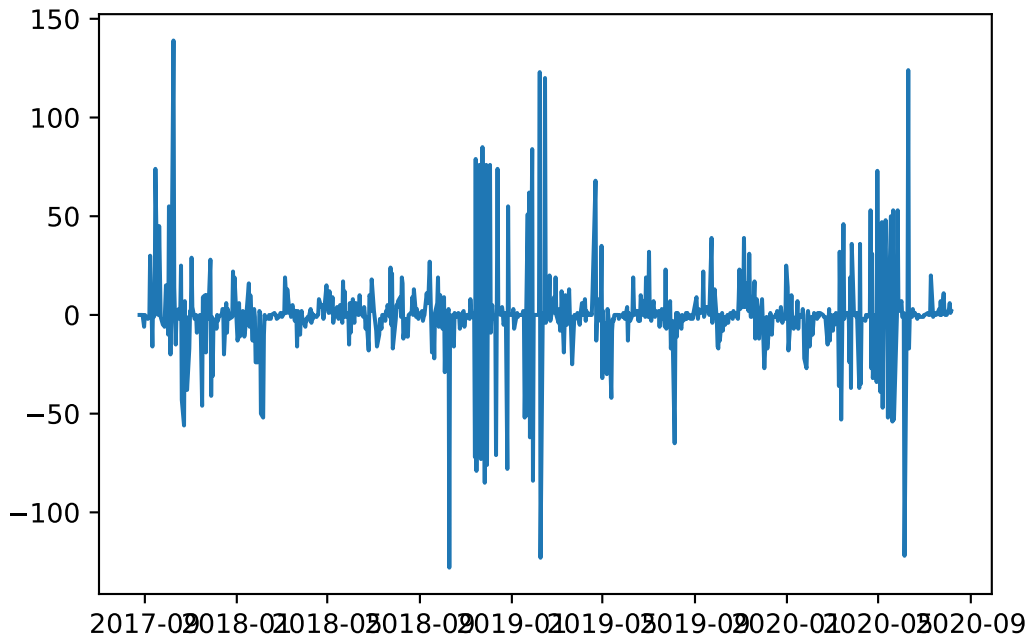




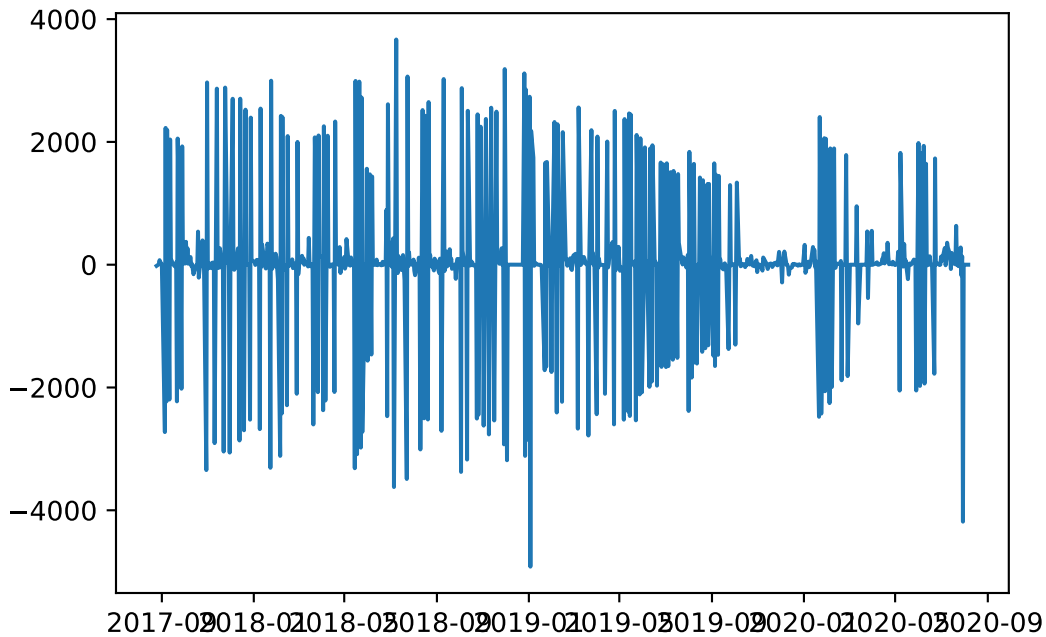
# Trades CO1



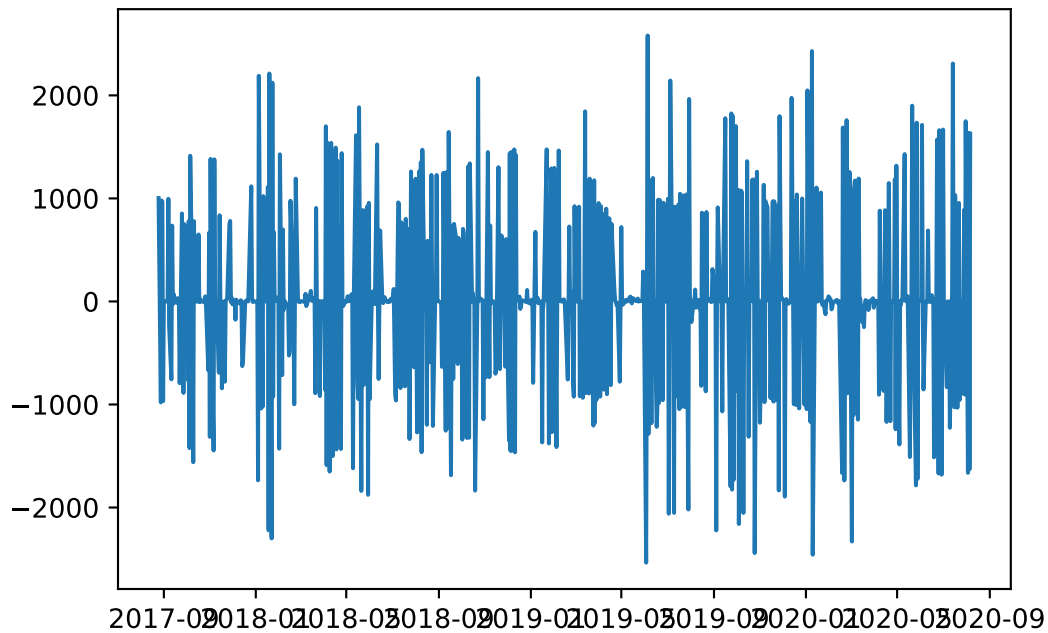
## Trades SP1



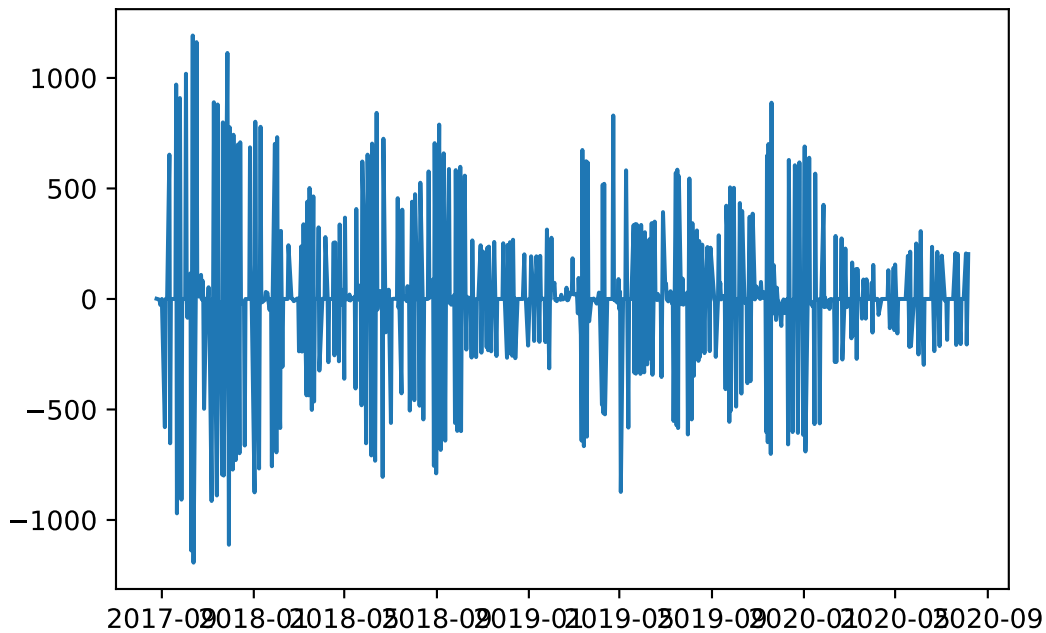
Trades TY1



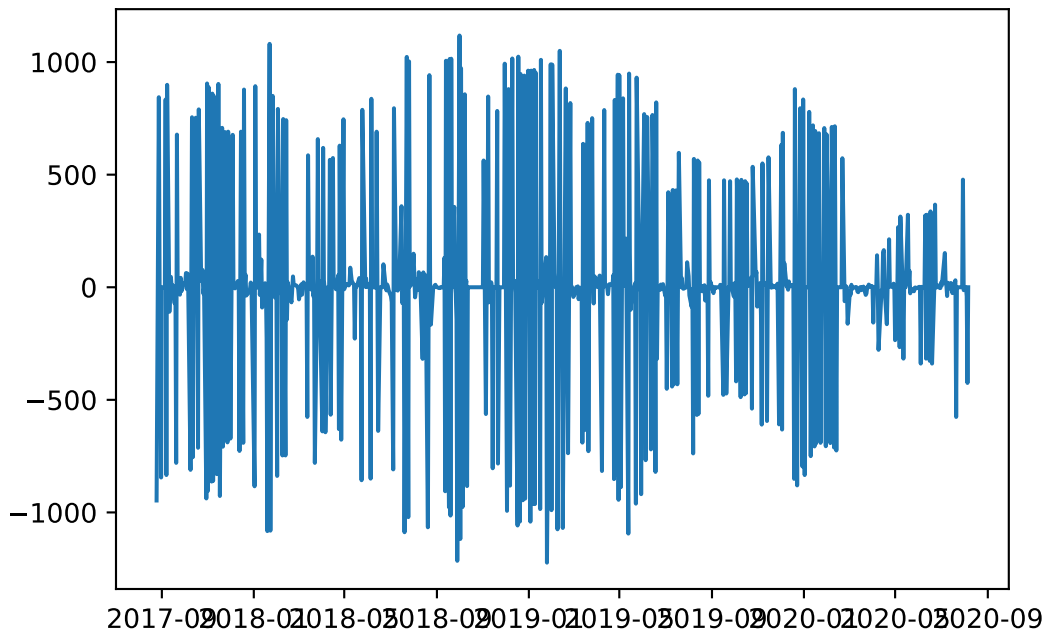
# Trades HG1



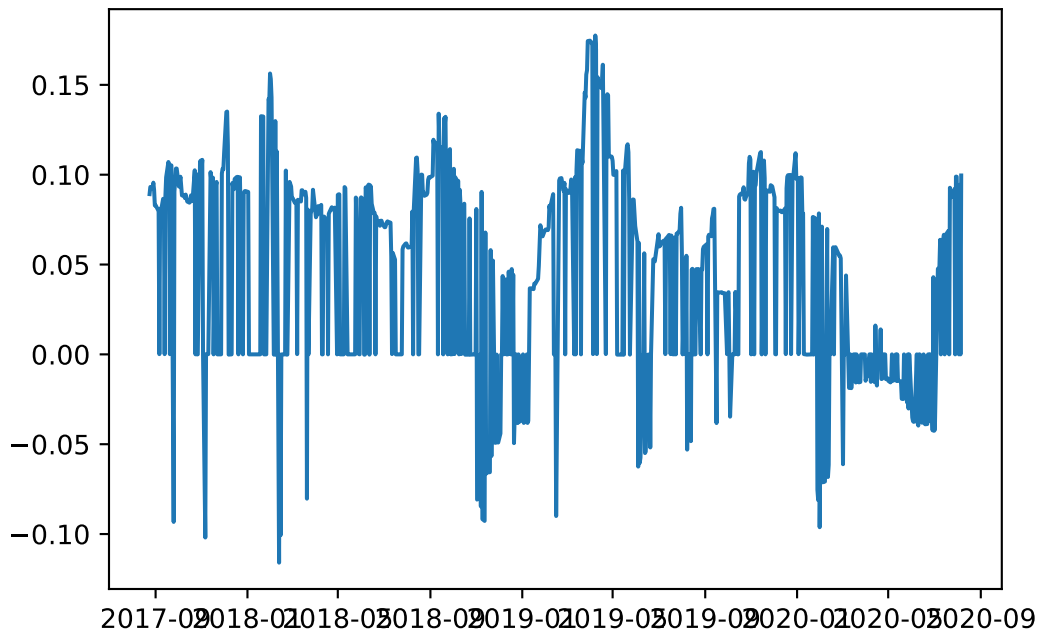
# Trades NQ1



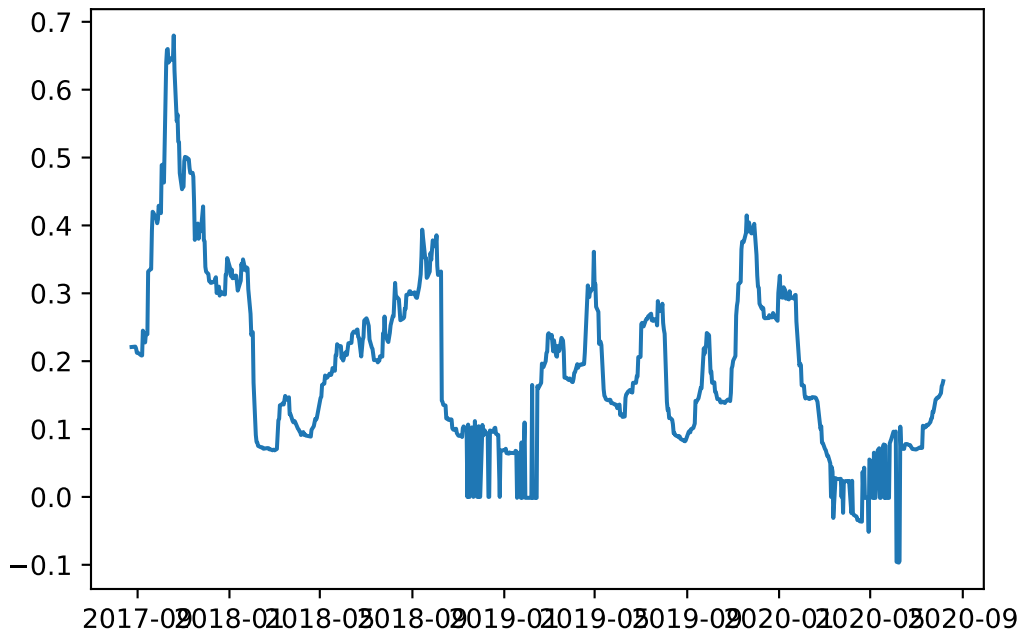
# Trades GC1



Leverage CO1

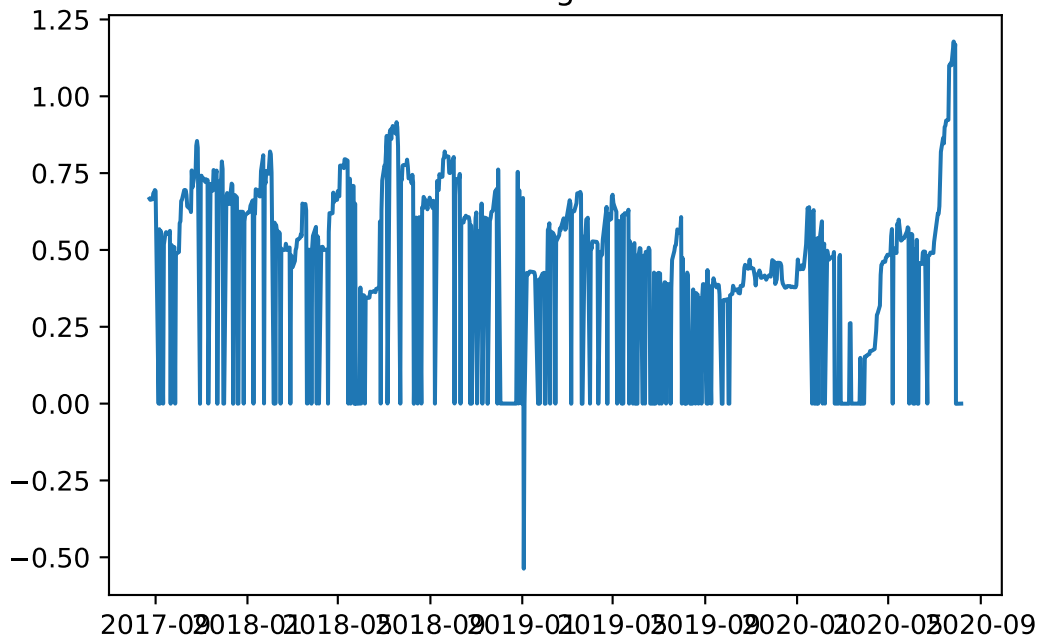


Leverage SP1

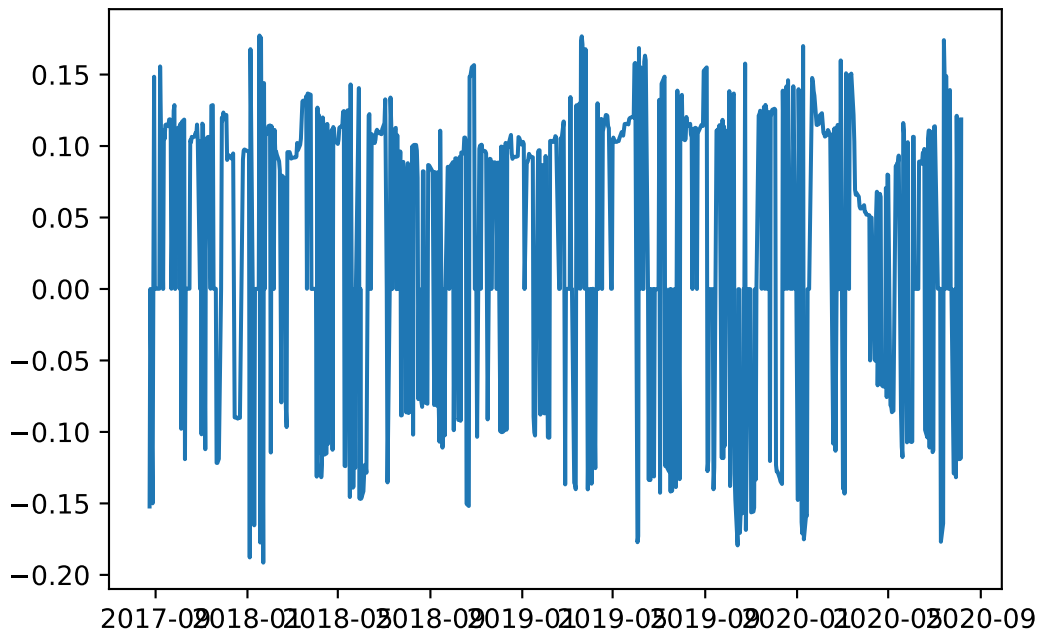




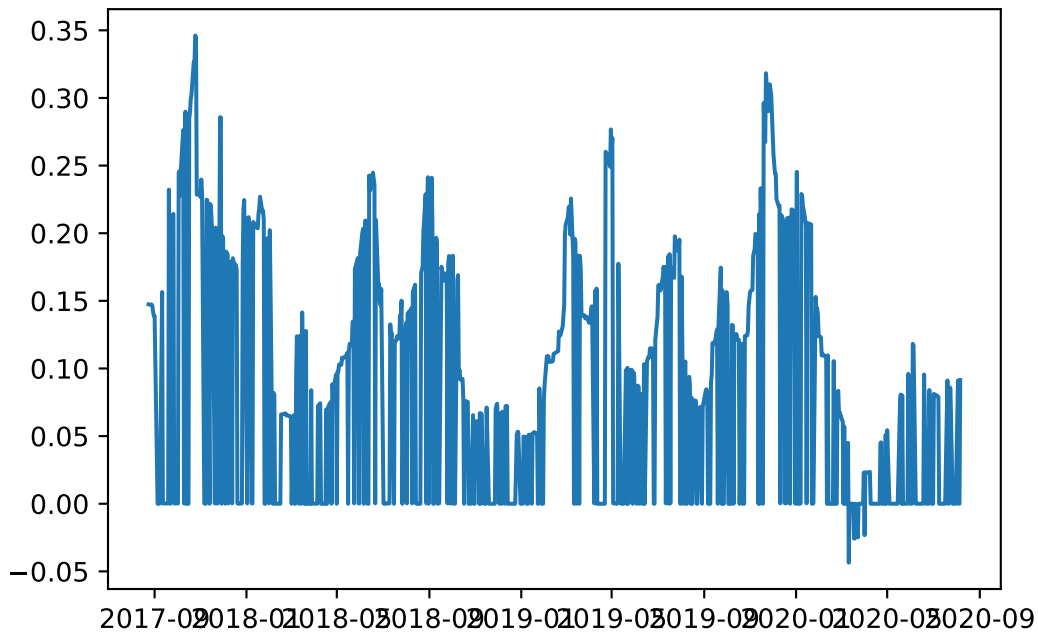
Leverage TY1



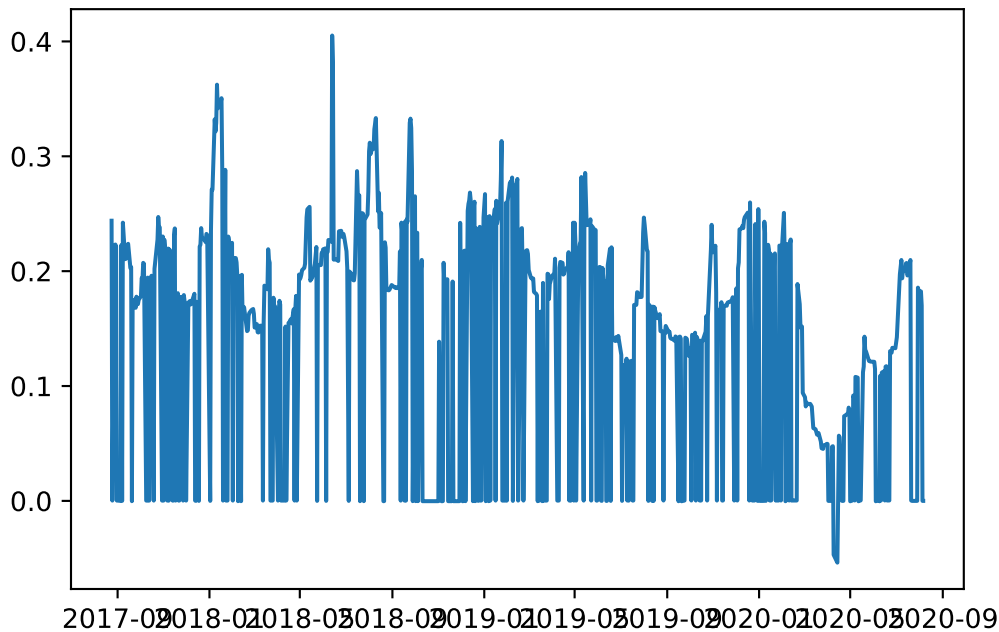
Leverage HG1



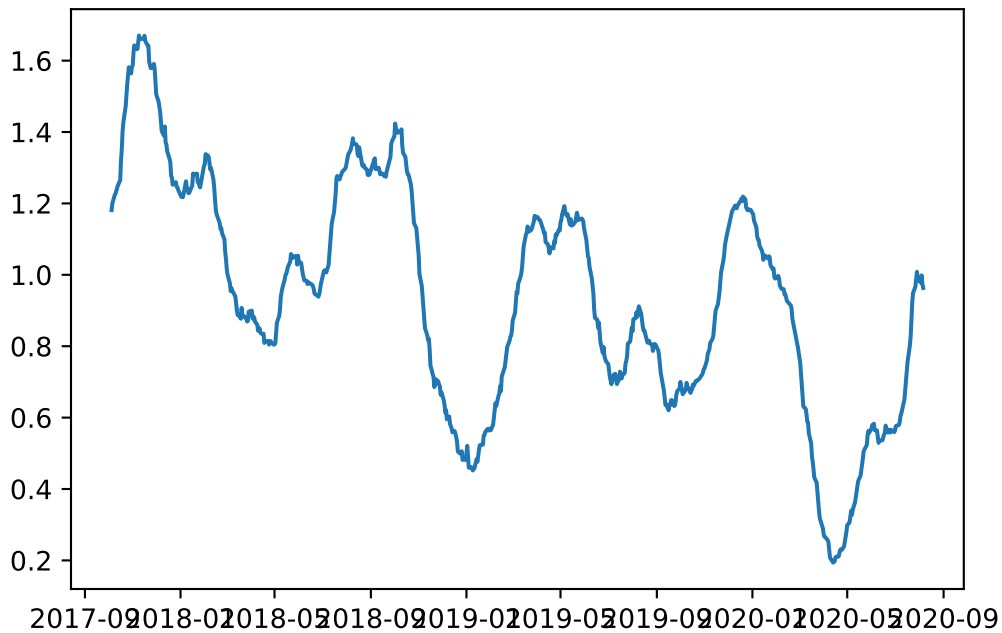
Leverage NQ1



Leverage GC1



Total leverage



Transaction costs as a percentage of AUM

