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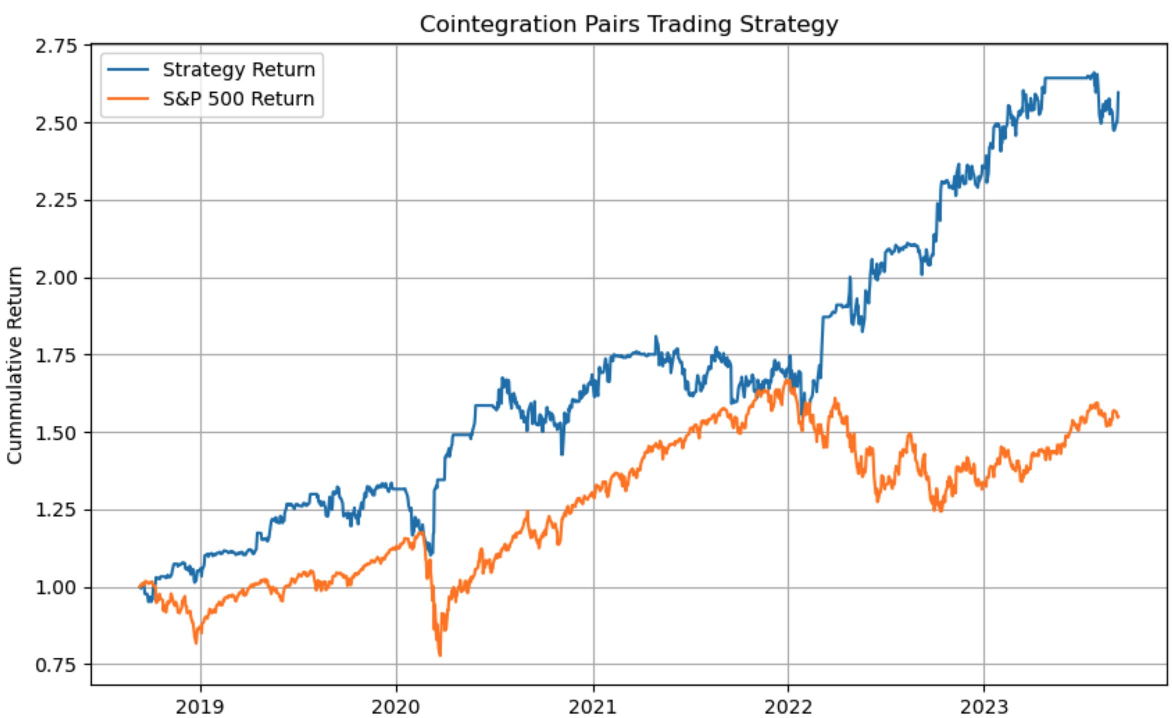
Cointegration Pairs Trading Strategy

Investment Strategy and Approach

This strategy identifies all pairs of S&P 100 equities that were cointegrated over September 2013 – September 2018. It initially returns 35 such pairs, out of which only 3: (AMT and HON), (DUK and UPS), and (NEE and TMO), are left after accounting for Multiple Comparison Bias. After calculating the spread of the cumulative returns for each of the 3 pairs, I devised a strategy that involves longing the spread when it crosses below one standard deviation of its 400-day rolling mean and shorting it when it crosses above 1 standard deviation of its 400-day rolling mean. A long position is exited once the spread crosses above its 400-day rolling mean or once it has been active for 100 days. A short position is exited once the spread crosses below its 400-day rolling mean or once it has been active for 100 days. This strategy generated higher profits for 2 pairs: (DUK and UPS) and (NEE and TMO). I maximized my Sharpe Ratio over September 2018 – September 2023 by calculating the optimal capital percentages that I should invest in each pair. This resulted in a 2.68 Sharpe Ratio when 23% of the capital is invested in the (DUK and UPS) pair and 77% is invested in the (NEE and TMO) pair.



Strategy vs. Benchmark (Sep 2018 - Sep 2023)

	Strategy	S&P 500
Total Return	159.6%	54.9%
CAGR	21.02%	9.15%
Sharpe	2.68	0.34
Annual Volatility	6.2%	14.26%