

QF 621 Project Proposal

Pair Trading using Technical Indicators

Objective: The aim of the project is to find cryptocurrency pairs using machine learning and systematically trade them using technical indicators on the spread between each pair.

Economic Intuition: The spread between each pair is an instrument in itself and using mean reverting technical indicators is based on the notion that the pair will converge in value at a future date.

Asset Class: Initially, the plan is to use cryptocurrency. If results are unsatisfactory may explore equities.

Data: We intend to use daily data for the Cryptocurrency pairs from <http://cryptodatadownload.com/data/> and <http://coinmarketcap.com/>.

Methodology: Use ML tools such as clustering to find eligible cryptocurrencies. Assess the pairs within the clusters with the help of cointegration tests such as ADF and speed of mean reversion (for example, using Hurst exponent).

Technical mean reversion indicators such as RSI will then be used on the spread between chosen cryptocurrency pairs to optimize entry and exit points. Indicators such as Sharpe ratio, drawdowns, overall returns, etc. will be studied for different pairs.

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