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# Pairs trading based on statistical variability of the spread process

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## Abstract

This research proposes a new non-parametric approach to pairs trading based on renko and kagi constructions which originated from Japanese charting indicators and were introduced to academic studies by Pastukhov. The method exploits statistical information about the variability of the tradable process. The approach does not find a long-run mean of the process and trade towards it like other methods of pairs trading. The only assumption we need is that the statistical properties of the spread process volatility remain reasonably constant. The theoretical profitability of the method has been demonstrated for the Ornstein-Uhlenbeck process. Tests on the daily market data of American and Australian stock exchanges show statistically significant average excess returns ranging from 1.4 to 3.6% per month and annualized Sharpe ratio from 1.5 to 3.4.

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C14

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### Related Research Data

[Basic Properties of Strong Mixing Conditions. A Survey and Some Open Questions](#)

Source: Probability Surveys

[High-Frequency Equity Pairs Trading: Transaction Costs, Speed of Execution, and Patterns in Returns](#)

Source: The Journal of Trading

[On Strong Mixing Conditions for Stationary Gaussian Processes](#)

Source: Theory of Probability and Its Applications

[Are Pairs Trading Profits Robust to Trading Costs?](#)

Source: SSRN Electronic Journal

[A CENTRAL LIMIT THEOREM AND A STRONG MIXING CONDITION](#)

Source: Proceedings of the National Academy of Sciences

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