



Quantitative Finance >

Volume 13, 2013 - [Issue 9](#)

1,228 34

Views | CrossRef citations to date | 1

Altmetric

Research Papers

# Pairs trading based on statistical variability of the spread process

Timofei Bogomolov

Pages 1411-1430 | Received 22 Sep 2011, Accepted 07 Nov 2012, Published online: 21 Feb 2013

Cite this article <https://doi.org/10.1080/14697688.2012.748934>

Sample our  
Economics, Finance,  
Business & Industry Journals  
>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

## 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.

Keywords:

JEL Classifications:

C1

C14

## Acknowledgements

I would like to thank John van der Hoek and Petko Kalev for their support and invaluable comments during my work on this research. I am also very grateful to the referees for their comments and suggestions.

### 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

[PARAMETER ESTIMATION FOR A REGIME-SWITCHING MEAN-REVERTING MODEL WITH JUMPS](#)

Source: International Journal of Theoretical and Applied Finance

[On Some Probabilistic-Statistical Methods in Technical Analysis](#)

## Information for

[Authors](#)[R&D professionals](#)[Editors](#)[Librarians](#)[Societies](#)

## Opportunities

[Reprints and e-prints](#)[Advertising solutions](#)[Accelerated publication](#)[Corporate access solutions](#)

## Open access

[Overview](#)[Open journals](#)[Open Select](#)[Dove Medical Press](#)[F1000Research](#)

## Help and information

[Help and contact](#)[Newsroom](#)[All journals](#)[Books](#)

## Keep up to date

Register to receive personalised research and resources by email

[Sign me up](#)