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Pairs trading: does volatility timing matter?

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Abstract

Pairs trading is a dollar-neutral trading strategy. Using the components of two major stock indices, the S&P 500 and the Nikkei 225, this article deals with the performance of a pairs trading system based on various pairs selection methods (distance, stationarity, cointegration) over a 10-year period. On both markets, using a classical framework, cointegration appears superior and effective. On the U.S. market and also in Japan to a lower extent, pairs trading strategies exhibited an impressive performance during the 2008 financial crisis. Bearish periods are associated with a high level of the VIX index: the 'investor fear gauge'. Using a modified trading system, this article examines the link between pairs trading performance and volatility/VIX timing. It is shown that for the best selection technique (cointegration), timing volatility has no economic value in a pairs trading context.

Keywords:

pairs trading trading rules VIX timing

JEL Classification:

G11 G14

Notes

[1] The Nikkei 225 Index contains about twofold fewer stocks than the S&P 500, which makes the detection of a large number (at least 20 per month/sequence) of cointegrated pairs, at a 5% rate, quite difficult. For cointegration only, the pre-selection is based on a 20% filter so that the population after this preliminary step remains large enough.

[2] The Japanese factors reported in this library are in dollars and not in yen. http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

[3] These time series end in March 2013. Regressions are thus computed between July 2003 and March 2013 (117 points versus 120 points with U.S. data), http://homepage.sns.it/marmi/Data_Library.html.