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Pairs trading in the UK equity market: risk and return

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Notes

1. For example, [Chordia, Sarkar, and Subrahmanyam \(2011\)](#) model the effect of liquidity on the cross-autocorrelation of stocks.
2. [Gatev, Goetzmann, and Rouwenhorst \(2006\)](#) argue that where a trade is triggered when the price of the long position at the opening of a trade is the bid price and the short position is the ask price, and the next day prices are equally likely to be at bid or ask, then delaying trades by one day will reduce the excess returns on average by half the sum of the spread of the long and short positions. Likewise, at convergence if the short is trading at bid, and the long is trading at ask, then delaying the closing by one day should lower the excess returns on average by half the sum of the spread of winner and loser. By waiting one day in opening and closing pairs, it should effectively reduce the excess returns by one round trip transaction cost.
3. In addition to bid-ask spreads, investors will incur stamp duty, commission charges and charges for borrowing stock. Due to data unavailability we do not model these direct transaction costs. These costs will lower returns.
4. The correlation between returns on other stocks and/or options is low price control for size based upon market maker quotes for FTSE100 SETS on supported subsamp
5. Prior to market maker quotes for FTSE100 SETS on supported subsamp



6. [Hendershott, Jones, and Menkveld \(2011\)](#), identify the move to an automated trading system on the NYSE in 2003 with a large effect on the liquidity.
7. Examining the long and short portfolios reveals that approximately 70% and 42% of the monthly returns are positive, respectively, but the short portfolio reduces systematic risk in negative market return months. For example, in October 1987, there is a negative return of -12.5% for the long portfolio; however, it is accompanied by a short portfolio return of $+23.1\%$. By investing in a hedged portfolio, investors are protected from large equity market shocks, which are unavoidable with either the long or short portfolio in isolation.
8. For the sake of brevity, we concentrate our discussion on the more conservative Committed Capital portfolios.
9. [Khandani and Lo \(2011\)](#) present evidence of the effect of the financial crisis on the returns of EMN funds in the USA.
10. We are grateful to Alan Gregory for providing the UK Fama and French factors.
11. Related evidence by [Petkova \(2006\)](#) shows that having incorporated innovations in four macroeconomic predictive variables alongside the [Fama and French \(1993\)](#) factors computed from a vector autoregression (VAR) process, the SMB and HML factors lose explanatory power. However, [Liu and Long \(2010\)](#) show that the ability of macroeconomic variables to explain returns on the market and high-beta portfolios, which rely on the market factor, is reduced (Liu and Poncelet 2010).
12. We test the ability of the market factor to explain returns on the market and high-beta portfolios, which rely on the market factor, and find that they have low explanatory power.
13. In order to test the ability of the market factor to explain returns on the market and high-beta portfolios, we must be able to measure the non-tradable component of the market factor. This is done by spreading in the left-hand side variable.



14. While the aforementioned results clearly demonstrate the performance of pairs trading portfolios formed using daily data, we are also interested in how these results relate to trading at higher frequencies and whether there is a high correlation between an identical strategy being pursued at different frequencies. Using data from [Bowen, Hutchinson, and O'Sullivan \(2010\)](#), we provide a comparison between pairs trading at different frequencies for a one-year subset of the database. Results, available from the authors on request, show that the returns of the portfolios, estimated using hourly and daily data, are not correlated and provide very different return characteristics.

15. We thank the anonymous reviewer for highlighting this point.

Additional information

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