FX Arbitrage and Market Liquidity: Statistical Significance and Economic Value

Wai-Ming Fong
The Chinese University of Hong Kong

and

Giorgio Valente
University of Leicester
Hong Kong Institute for Monetary Research

and

Joseph K. W. Fung
Hong Kong Baptist University
Hong Kong Institute for Monetary Research

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Summary

The law of one price is a fundamental financial theory that draws the continuous attention of academics and market practitioners. However, its empirical validity is still a controversial issue. The extant evidence suggests that the law of one price holds when markets have few frictions associated with transacting but it does not necessarily hold when markets are illiquid. In fact, aspects of the market microstructure may cause the temporary deviation of prices from their no-arbitrage values, and financial market liquidity plays a key role in moving prices to eliminate arbitrage opportunities.

This paper revisits the issue of FX arbitrage for a single currency market (i.e. Hong Kong dollar) where market liquidity is a more important issue than in major currency markets usually investigated in the recent FX microstructure literature. Using a novel and unique dataset of tick-by-tick tradable (firm) spot and forward quotes for HK dollar vis-à-vis US dollar (HKD/USD henceforth) as well as tradable HKD- and USD-denominated deposit rates we carry out an extensive analysis of covered interest parity (CIP) deviations and their relationship with market liquidity.

Our main findings are as follows. First, we find that the HKD/USD FX market is characterized by statistically significant deviations from CIP. Second, we find that these deviations are larger in size and slower to converge to equilibrium when the liquidity of the HKD/USD spot, forward and deposit markets is poor. Third, the economic value of these arbitrage opportunities is sizable even after bid-ask spreads are taken into account, especially for longer maturity tenors. However, since additional trading costs (i.e. brokerage fees and settlement costs) are generally not included in quoted and transaction prices, their explicit consideration is likely to offset any profits that arise from arbitrage activities at short maturities. For longer maturities only the traders who are able to obtain low trading costs may be able to reap genuine arbitrage profits.