Do Expectations on G3 Currencies Change around the Times of Official Interventions on the JPY/USD Exchange Rate?

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Abstract: In this study we investigate the changes in *expectations* of future exchange rate movements around the times of official interventions. There are several reasons why this is a compelling approach. First, since FX interventions are often aimed at reducing future FX volatility over some time horizon ahead, it is natural to analyse how the market's expectations about future developments might move around the time of the market operations. Second, by using data on the currency options prices that is inherently forward-looking we can extract information about the market's views regarding near-time exchange rate developments that cover all moments of the distribution. Third, since changes in the higher moments of the distribution are known to be more persistent than changes in levels, we can also study whether the changes in expectations last over the daily horizon.

We estimate the risk-neutral density functions using daily OTC quotes for currency options prices with fixed moneyness that avoids the biases that typically characterise the exchange traded price quotes. We find that the interventions on the JPY/US dollar exchange rate are preceded by systematic changes in expectations as reflected in all moments implied by the currency options prices. In particular, expectations have tended to move towards stronger (weaker) yen prior to yen-selling (purchasing) operations by the Bank of Japan (BoJ). Interventions were also preceded by systematic movements in implied standard deviation and skewness, which indicates that the options market become increasingly nervous prior to the operations. We also found that yen-selling interventions against the US dollar coincided with a movement in the mean of the RND on the JPY/EUR exchange rate towards a weaker yen against the euro. However, the yen selling operations did not coincide with a contemporaneous move in the mean of the RND towards a stronger US dollar against the euro.

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