Dynamic interactions between government bonds and exchange rate expectations in currency options

Cho-Hoi Hui

Hong Kong Monetary Authority

and

Edward Tan

Hong Kong Monetary Authority

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Summary

This paper examines the dynamic interactions between the government bonds of Germany, Japan and the US and their exchange rate expectations anticipated in the currency options, i.e., risk reversals (put premia) of the US dollar versus the yen and euro. We find evidence of one-way information flow from the government bond market to the currency option market. The flow was substantial during the post-global financial crisis period when the US Fed started quantitative easing (QE), while it was relatively short term before the global financial crisis and diminished after the 2013 taper tantrum. This demonstrates that the US's QE, which compressed its long-term bond yields, could substantially affect the dollar exchange rate expectations reflected in currency option prices.

Further econometric analysis indicates that the long-term bond yields of the US (UST), Japan (JGB) and Germany (Bund) are important and separable determinants of the risk reversals in the US-QE period for the dollar-yen exchange rate and the pre-crisis period for the euro-dollar exchange rate. The negative relationship between the spreads of the UST yield over the

JGB/Bund yields and the risk reversals indicates that a lower US dollar interest rate can coincide with a dollar depreciation expectation embedded in the currency option prices after controlling for global risk appetite, funding liquidity constraint and macro-financial condition. The result suggests that a fall in US dollar interest rates leads to a depreciation of the US dollar, not an appreciation as predicted by uncovered interest rate parity.