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Exchange Rate Volatility and the Forward Premium Anomaly

I ask whether the forward premium anomaly is consistent with an arbitrage-free model for the exchange rate and term structures of interest rates in two currencies. I use a two-currency term structure model to examine two sets of currency pairs: the US Dollar and British Pound, and the US Dollar and Euro. Previous papers in this literature have failed to match exchange rate volatility, which is an essential component of the risk premium in exchange rate returns. A distinguishing feature of this paper is that I use exchange rate option prices to estimate the model. Options provide valuable information because they are sensitive to the level of volatility and to the pricing of volatility risk. When options are used to estimate the model, it successfully captures both exchange rate volatility and the term structure of interest rates in both currencies. Using simulated data, I show that the model also replicates the empirical findings in Fama (1984) and is consistent with the forward premium anomaly.