

Empirical study on violation of covered interest rate parity and associated arbitrage opportunities in fixed income and foreign exchange markets

MFE 230H : Project proposal

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Description

Covered interest rate parity helps to tie up the trading price of the interest rates and forward premium of exchange rates in the two currencies. The pricing of currency forward and swaps hinges upon ideas inherent in the parity condition. When the trading prices deviate from what is implied by the parity relation, there are systematic arbitrage opportunities that exists. However, certain frictions in the market results in the consistent and systematic violation of the parity relation.

Objective

Below we outline the possible ideas and objectives from the study. We intend to look at some/all of them based on time and data availability:

- Exploratory research on parity violations using historical data in various currencies
- If the violation exists,
 - identify the characteristics of CIP deviation near major economic events like CIP trend before and after the 2007-08 economic crisis
 - impact of sovereign credit risk, foreign exchange swap market frictions and relative supply of government bonds on extent of CIP violation
 - attribute the deviations in terms of relative convenience yields and credit spreads
 - establish if extent of violation is same for developed and emerging market regimes
 - correlation of CIP deviation with other market variables like spreads and interest rates
 - sample trading ideas to take advantage of arbitrage opportunities and identify frictions and balance sheets costs for a bank associated with arbitrage and market making

Dataset

The main dataset we use for CIP difference is the dataset provided by Wenxin Du, Joanne Im, and Jesse Sc ([Covered Interest Rate Parity Deviations Between Government Bonds](#)). We intend to extend our analysis to multiple currencies based on availability of relevant data. The daily data starts from ~ 2000 for G10 and ~ 2005 for EMs to 2019. The data is available for tenors 3m, 1y, 3y, 5y, 7y, 10y. For the construction of forward premium on exchange rates, we intend to use forwards for short tenors and swaps for long tenors.

References

- [Covered Interest Rate Parity Deviations Between Government Bonds](#)
- [Deviations from Covered Interest Rate Parity \(AQR\)](#)

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