

Cross-Border Finance: FX Markets, Covered Interest Parity Deviations, and Currency Risk

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ABSTRACT

Foreign exchange (FX) markets—the largest financial markets globally with daily trading volume exceeding \$7.5 trillion—determine the relative prices of currencies and transmit financial conditions across borders. Covered Interest Parity (CIP)—the arbitrage relationship that equates the forward premium/discount on a currency with the interest rate differential between two currencies—was considered one of finance’s most robust no-arbitrage conditions until Du, Tepper, and Verdelhan (2018) in the *Journal of Finance* documented persistent and economically large CIP deviations following the 2008 financial crisis, attributing them to balance sheet constraints on major bank arbitrage activity. The uncovered carry trade—borrowing low-interest-rate currencies to invest in high-interest-rate currencies—violates uncovered interest parity (which predicts that interest differentials equal expected depreciation) and has historically generated positive returns but with severe crash risk. This paper reviews FX market structure, CIP and its post-crisis deviations, the carry trade’s risk and return, and currency risk’s role in international portfolio management.

Keywords: FX Markets; Covered Interest Parity; Carry Trade; Currency Risk; CIP Deviation; Uncovered Interest Parity; Du Tepper Verdelhan

1. INTRODUCTION

Foreign exchange markets are the foundation of international finance, enabling cross-border trade, investment, and capital flows by determining the terms on which one currency can be exchanged for another. The global FX market trades continuously 24 hours a day, 5 days a week, with the Bank for International Settlements’ 2022 triennial survey documenting \$7.5 trillion in daily average trading volume—of which spot transactions represent 28%, FX swaps 51%, and options/forwards the remainder. Major currency pairs (EUR/USD, USD/JPY, GBP/USD) account for the majority of volume, with USD involved in approximately 88% of all FX transactions.

The theoretical foundation of FX markets rests on two parity conditions. Covered Interest Parity (CIP) is a no-arbitrage relationship: the forward exchange rate should equal the spot rate adjusted for the interest rate differential, because any deviation creates risk-free arbitrage through FX swap transactions. Uncovered Interest Parity (UIP) is an equilibrium condition predicting that the expected exchange rate change equals the interest rate differential—higher interest rate currencies should depreciate by the amount of the rate advantage. CIP held almost perfectly in pre-crisis markets; UIP has been empirically rejected, creating the carry trade profitability that has puzzled international finance for decades.

2. CIP DEVIATIONS POST-GFC

2.1 Mechanics and Evidence

Du, Tepper, and Verdelhan (2018) in the *Journal of Finance* (73(3): 915–957) documented that CIP deviations—the basis between FX swap-implied interest rates and money market rates in major currencies—became persistent and economically large after 2008, averaging 20–50 basis points for major currency pairs. The deviations were larger for currencies with higher regulatory costs (those requiring more regulatory capital when held by major dealers) and in periods of quarter-end regulatory reporting dates (when bank balance sheet constraints bind most severely). These patterns implicate post-crisis bank regulation (Basel III leverage ratio, supplementary leverage ratio) as the primary driver of CIP deviations by imposing balance sheet costs on arbitrage activity that would otherwise drive deviations to zero.

2.2 Implications for International Finance

CIP deviations have important implications for corporate treasury and institutional investment. Corporate treasurers who use FX swaps to hedge foreign currency debt must account for CIP basis as an additional cost or benefit (depending on

currency and direction) rather than assuming CIP holds. Institutional investors using synthetic currency exposure through FX swaps face returns that differ from the underlying asset returns by the CIP basis. The persistence of CIP deviations challenges the efficient markets hypothesis for FX markets and suggests that financial intermediary balance sheet constraints—not just information—shape market equilibrium.

3. CARRY TRADE RETURNS AND RISK

Table 1. Carry trade return characteristics and risk drivers.

Carry Trade Characteristic	Evidence	Risk Explanation
Average excess return	~5% annualized (developed markets); higher emerging markets	Currency risk premium compensating for crash risk
Skewness	Highly negative: large losses in currency crises (2008, 1998)	Carry trade ‘picks up nickels in front of steamroller’
Sharpe ratio	~0.5–0.7 (developed); similar to equity premium	Positive risk premium; not a free lunch
Drawdown risk	2008 global unwind: -30% in weeks as positions unwound simultaneously	Carry crowding creates correlated unwind risk

4. CURRENCY RISK IN ASSET PRICING

Lustig, Roussanov, and Verdelhan (2011) in the *American Economic Review* identify ‘carry’ and ‘dollar’ as the two primary currency risk factors that explain the cross-section of currency excess returns. The carry factor—long high-interest currencies, short low-interest currencies—generates positive returns that are explained by its exposure to global risk appetite: carry trade performs poorly during global risk-off episodes (when investors liquidate risky positions globally) and well during risk-on periods. This global risk exposure justifies the carry trade’s positive expected return as compensation for tail risk that materializes in systemic events. The ‘dollar factor’—the excess return of all currencies against the dollar simultaneously—captures global growth expectations and risk appetite sentiment that moves currency markets beyond bilateral interest rate differentials.

5. CONCLUSION

FX markets are the world’s most liquid financial markets and the foundation of international finance, yet they exhibit persistent deviations from the simplest arbitrage conditions (CIP) and long-standing empirical puzzles (UIP failure, carry trade profitability). Post-GFC regulatory changes—particularly balance sheet constraints on major bank dealers—have introduced new frictions into FX arbitrage that maintain CIP deviations even in highly liquid currency pairs. The carry trade’s positive returns reflect genuine currency risk premiums compensating for crash risk and global risk exposure, not a free lunch from UIP failure. Future FX research should examine how central bank digital currencies and decentralized exchange platforms change FX market microstructure, and whether the elimination of bank dealer intermediaries through DeFi protocols would reduce or amplify the regulatory friction-driven CIP deviations.

REFERENCES

- [1] Du, W., Tepper, A., & Verdelhan, A. (2018). Deviations from covered interest rate parity. *Journal of Finance*, 73(3), 915–957.
- [2] Lustig, H., Roussanov, N., & Verdelhan, A. (2011). Common risk factors in currency markets. *Review of Financial Studies*, 24(11), 3731–3777.
- [3] Menkhoff, L., Sarno, L., Schmeling, M., & Schrimpf, A. (2012). Carry trades and global foreign exchange volatility. *Journal of Finance*, 67(2), 681–718.