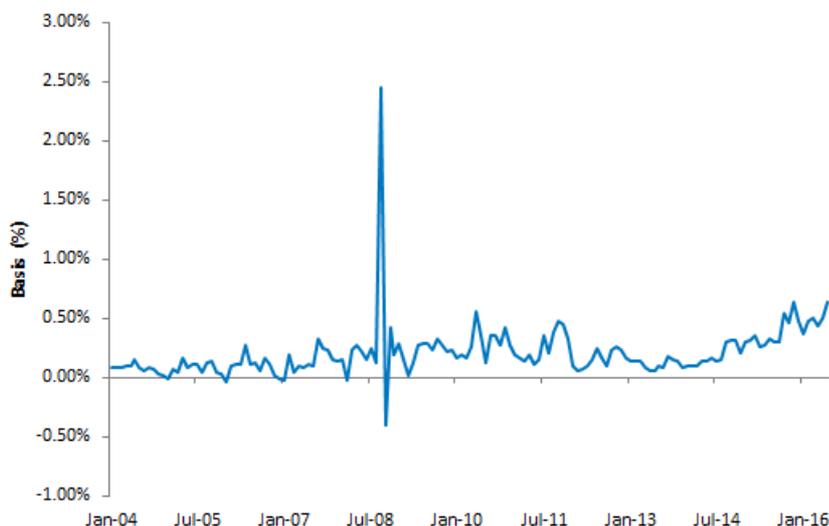


DISLOCATIONS IN THE FX MARKETS AND WHAT THEY MEAN FOR YOU

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An unusual opportunity has emerged for U.S. investors because of the breakdown of the no-arbitrage condition called [covered interest rate parity](#). The [interest rate differentials](#) embedded in [foreign exchange \(FX\) forwards](#) have begun to diverge significantly from the interest rate differentials in the local [money markets](#). This is for a number of reasons, primarily the demand for the U.S. dollar as a funding currency. This divergence tends to reward [long](#) dollar positions—i.e., [currency hedging](#) foreign equities, especially for Japan. The commentary below gives more background on these developments and why there is some extra motivation and [carry](#) to be earned from hedging the yen today. **Higher Levels of Carry to Be Earned from Hedging** Over the last few years, an expanding basis between currency markets and unsecured money markets has provided an advantage to U.S. investors hedging foreign assets back to dollars, and this continues to present opportunities for the careful investor. In theory, a no-arbitrage condition called covered interest rate parity underlies the pricing of currency forwards: if currency X has an annual interest rate 1% higher than currency Y's, then a one-year forward would price in a 1% depreciation of currency X relative to the current [spot rate](#), according to this condition. Otherwise, a market agent could take perfectly opposing positions—one in the currency forward market, one in the corresponding money markets—and make a profit. Until the financial crisis, this parity condition generally held. Banks were the main agents of this arbitrage between the unsecured money markets and the currency markets. In a gradual development over the last few years, however, the ability of these banks to exploit this arbitrage has been curtailed, and so the parity has disappeared. **USD-JPY Cross-Currency Basis, Three-Month Tenor**

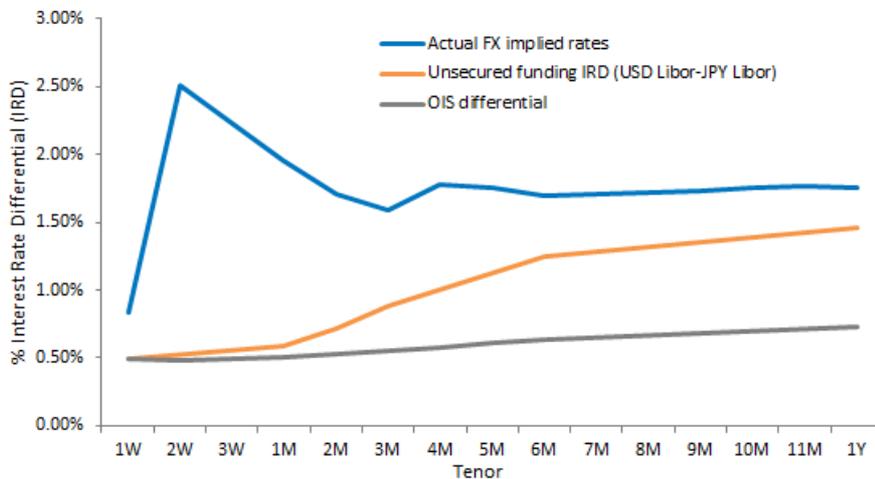


Sources: Record, WM/Reuters, British Bankers' Association, ICE Benchmark Administration. The difference between the Libor interest rate differential between U.S. dollar (USD) and Japanese yen (JPY), and the foreign exchange implied interest rate differential over time.

Three Changes Causing Expanded Carry Among other things, the cause of this lies in three main changes. First, new banking regulations (primarily the leverage ratio provisions in [Basel III](#)¹) have restricted the ability of banks to employ their [balance sheet](#) in low-margin activities such as rates arbitrage. Second, [LIBOR](#) no longer accurately reflects the price at which unsecured

borrowing and lending occurs. Not only have there been fraudulent manipulations of the LIBOR rates, but also the unsecured interbank funding market has been declining in prominence compared to other unsecured markets, particularly those between banks and their customer money pools and between banks and [sovereigns](#). Thus, even to the extent that LIBOR is a true indication of the interbank rate, it no longer accurately captures the costs of unsecured borrowing for a bank. Third (and more recent), prime money market fund reform in the U.S., the next pillar of which will be implemented by October 17, has increased the share of secured funding compared to unsecured, which allows fewer opportunities for arbitrage. These three factors have combined to introduce a basis—the difference between the theoretical cost of the borrowing/lending, which corresponds to an FX forward position and the actual cost of these forwards. This basis varies as these factors (and others) interact, but overall can be said to correspond to the currencies' relative demand as funding currency. Generally speaking, demand for dollar funding has been high, creating a positive basis for long dollar positions in the currency markets. Thus a U.S. dollar-based investor has achieved a better interest rate from foreign investments hedged back to dollars than would be implied by a simple transfer of risk-free or unsecured rates, which already favor long dollar positions against other major currencies (euro, Japanese yen, British pound, Swiss franc). This is shown for the yen below. This higher carry earned from hedging the yen is perhaps extra motivation and consideration for U.S. investors to adopt a currency hedged Japanese equity strategy. **USD-JPY Interest Rate**

Differential Decomposition Annualized interest rate as of September 15, 2016



Sources: Record, Bloomberg. Overnight indexed swaps (OIS) are agreements to receive the interest rates on a nominal amount without actually having to lend the principle. Hence the difference between the OIS and Libor rates represents the risk that an interbank counterparty will default on a loan. Libor includes the interbank counterparty risk and liquidity premiums. The blue line shows the actual foreign exchange (FX)-implied interest rate differential (IRD).

¹Basel III includes the

[liquidity covered ratio](#), the net [stable funding ratio](#), and the [leverage ratio](#) framework.

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Interest Rate Differentials : The Difference between the 2 Year interest rate swaps of the United Kingdom vs. the United States.

Foreign Exchange (FOREX, FX) : The exchange of one currency for another, or the conversion of one currency into another currency.

Forward contracts : Agreements to buy or sell a specific currency at a future date at an agreed upon rate.

Money Market : a market for highly-liquid assets generally maturing in one year or less.

Long (or Long Position) : The buying of a security such as a stock, commodity or currency, with the expectation that the asset will rise in value, the opposite of Short (or Short Position).

Currency hedging : Strategies designed to mitigate the impact of currency performance on investment returns.

Carry : The amount of return that accrues from investing in fixed income or currency forward contracts.

Spot price : The current price at which a particular security can be bought or sold at a specified time and place.

Basel III : a global, voluntary regulatory framework on bank capital adequacy, stress testing and market liquidity risk. Introduced by the Basel Committee on Banking Supervision in 2010–11, and most recently scheduled to be implemented by 31 March 2019.

Balance sheet : refers to the cash and cash equivalents part of the Current Assets on a firms balance sheet and cash available for purchasing new position.

London Interbank Offered Rate (LIBOR) : the average rate that major banks offer to lend to each other for short-term unsecured funds in a particular currency for a particular maturity in the wholesale money market in London. It can range from overnight to one year and is utilized as a benchmark for various loans and in the capital markets.

Sovereign : A national government.

Leverage Ratio : Total amount of debt given a total amount of assets i.e., total Debt divided by total asset.