US Rate Strategy Focus
US Fixed Income Strategy

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Special Topic: Is LIBOR Broken?

Summary points

- The current liquidity crisis has created a situation where LIBOR at times no longer represents the level at which banks extend loans to others. We believe that LIBOR may understate actual interbank lending costs by 20–30bp and recommend implementing a long 10-yr swap spread trade to hedge against a potential jump in LIBOR.

Something is rotten in the state of [LIBOR]

— William Shakespeare (with us taking some liberty)

Summary — LIBOR May Be Understating Real Interbank Lending Cost

We believe that LIBOR may understate actual interbank lending costs by 20–30bp and recommend implementing a long 10-yr swap spread trade to hedge against a potential jump in LIBOR. The current liquidity crisis has created a situation where LIBOR at times no longer represents the level at which banks extend loans to others.

Discussion — LIBOR's Importance Extends Far Beyond Banks

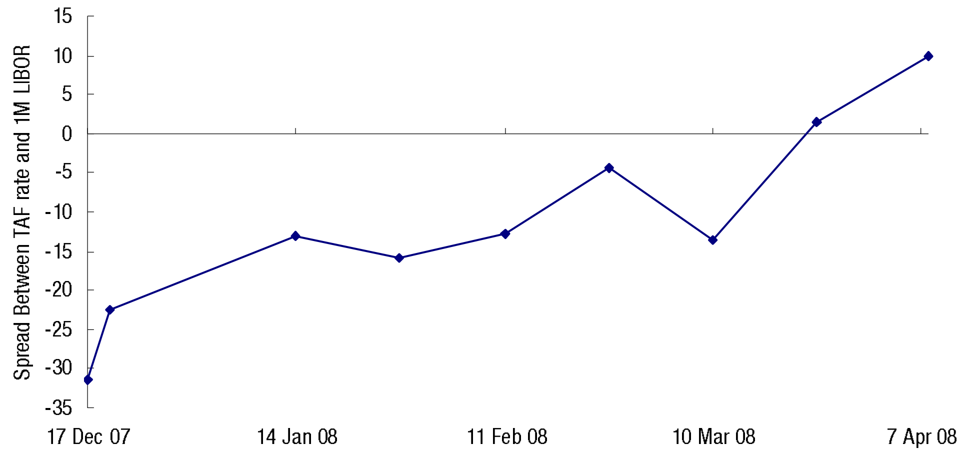
LIBOR is by far the most popular floating-rate index in the world. Its importance has evolved far beyond its humble roots as an interbank lending rate. LIBOR touches everyone from the largest international conglomerate to the smallest borrower in Peoria: It takes center stage in every interest rate swap (whether it is explicitly part of the cash flow or not) and the great majority of floating-rate securities and loans. As such, the functionality and relevance of LIBOR is of primary importance to the global financial system.

We believe the current liquidity crisis has damaged the interbank market, resulting in LIBOR sets that at times deviate significantly from real interbank lending rates. We discuss four factors that support this conclusion.

Factor No. 1 — TAF Auction Rate Higher Than LIBOR

The latest sign that something is not right in the interbank market was this week's Fed TAF auction. The latest in the series of $50 billion term liquidity injections by the Fed was met with $91 billion of demand, in line with prior $50 billion auctions.

Figure 1. Summary of Fed TAF Auctions and Clearing Yield Versus 1-Mo. LIBOR



Sources: Federal Reserve, British Bankers Association and Citi.

The most interesting news from the latest TAF auction is that it produced a clearing yield 10bp higher than 1-mo. LIBOR. While the previous TAF auction also produced a clearing yield slightly above LIBOR (by 1.6bp), the result could have been an anomaly: The auction date fell on a London bank holiday, and the subsequent day's LIBOR set was 5bp higher. The latest TAF result is far harder to dismiss.

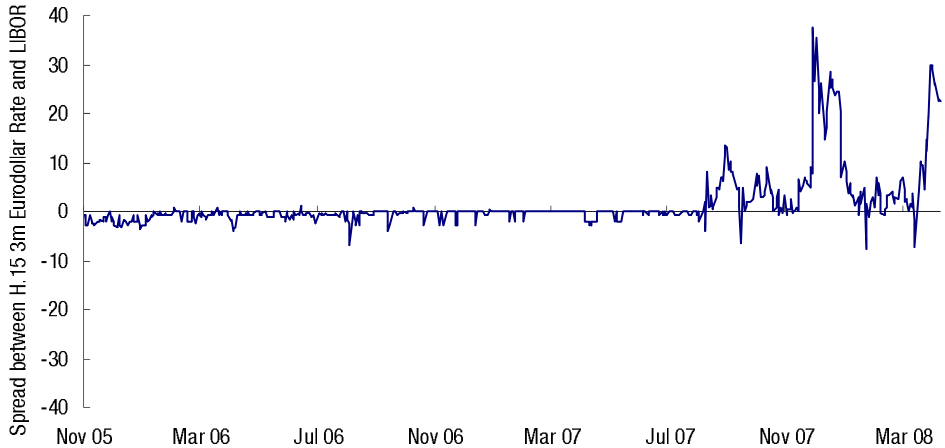
Since the TAF auction drew average demand and there were no quarter-end funding issues for any banks or dealers, there is little rationality for this latest (or any) TAF auction yield to be higher than LIBOR. Given that the TAF is a securitized borrowing rate as opposed to LIBOR, which is an unsecuritized lending rate, it seems counterintuitive for banks to pay a higher interest rate to borrow from the TAF than to borrow from the interbank market.

So was there something wrong with the TAF auction, or is this a reflection of a much bigger problem? The TAF result, in our view, was entirely normal. We believe the real issue lies in a much bigger arena — LIBOR.

Factor No. 2 — LIBOR Has Deviated From Fed Eurodollar Deposit Data

The Fed maintains its own data on Eurodollar lending by taking the ICAP broker bid rate at 9:30 a.m. New York time daily. Because the Fed's data are based on the bid-side rate of interbank borrowing, the Fed's Eurodollar rate should be less than LIBOR (which, by definition, is an offered rate). Figure 2 shows that, until 2007, the Fed's Eurodollar deposit data were closely in line with LIBOR.

Figure 2. Spread Between H.15 3-Mo. Eurodollar Deposit Rate and 3-Mo. LIBOR, Jan 97–Apr 08 (In Basis Points)



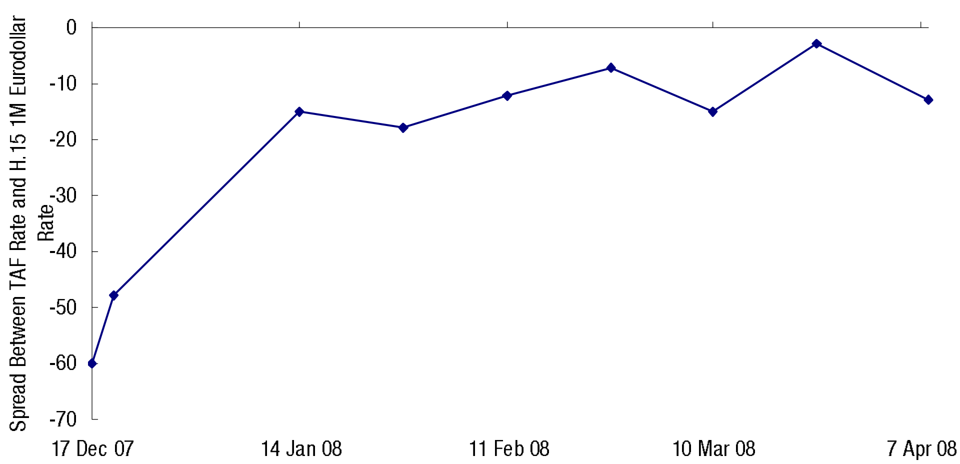
Note: Days including a cut to the Fed Funds Rate have been removed.
Sources: British Bankers Association and Federal Reserve.

A negative spread in Figure 2 means that LIBOR, as posted, is higher than the Fed's bid rate. The first sign of LIBOR deviation from the Fed data began with the onset of the interbank liquidity crisis in August. The latest instance of deviation shows that the Fed's bid-side rate is now 29bp higher than LIBOR's offered-side rate.

It makes no economic sense for a bid rate (where a bank is willing to borrow) to exceed an offered rate (where a bank is willing to lend). This situation (even taking into account the 2.5-hour time difference between the LIBOR set and the Fed set) should never persist for an extended period of time. For the Fed Eurodollar rate–LIBOR spread to remain positive in any meaningful magnitude and extent means that one of the two rates is likely not transactable.

So which rate is incorrect? We gain some perspective when we compare the TAF clearing yield to the Fed's Eurodollar deposit rate data.

Figure 3. Summary of Fed TAF Auctions and Clearing Yield Versus Fed H.15 1-Mo. Eurodollar Deposit Rate



Sources: Federal Reserve and Citi.

TAF auction yields have consistently been lower than the Fed's Eurodollar deposit rate and conforms to the logic that a secured lending rate should always be lower than an unsecured one. This sanity test gives us some comfort that, at the present time, the Fed's Eurodollar deposit rate data may be a better gauge than LIBOR of short-term funding levels.

Factor No. 3 — Anecdotally, Loans Are Still Being Made, Albeit at a Considerable Spread to LIBOR

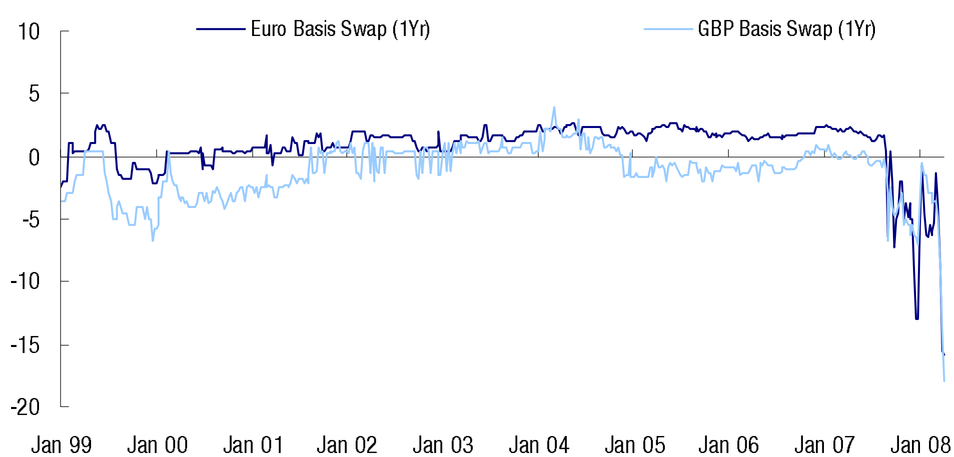
There is considerable anecdotal evidence that large European financial institutions have been able to procure US dollar-based short-term loans, albeit at a significant yield premium to LIBOR. This suggests that while some lending in the interbank market is occurring, short term loans are being made at a yield that is higher (by about 20–30bp) than the LIBOR setting.

Factor No. 4 — The Cross-Currency Basis Swap Spread Is at Its Widest Level of the Past Nine Years

Another indication of a dysfunctional interbank market can be seen in short-dated cross-currency swap spreads. In a fully functioning interbank market, there should be very little premium in the short-dated basis swap spread between major currencies because banks are able to borrow freely and directly in most major currencies. Figure 4 shows that the EUR-USD and GBP-USD cross-currency basis swap spreads began deviating from zero with the onset of the interbank liquidity crisis in August and have recently broken through to the widest levels in more than nine years.

We interpret the basis swap spread widening as follows: European and UK banks have dollar funding needs but have been unable to borrow directly in US dollars in the interbank market at LIBOR. As a result, they have been borrowing in their local currencies and then using cross-currency swaps (or shorter-dated forward FX) to create synthetic US dollar loans. The greater the demand to create synthetic dollar funding, the more negative the basis swap spread.[1]

Figure 4. 1-Yr EUR-USD and GBP-USD Cross-Currency Basis Swap Spread, Jan 99–Apr 08



Source: Citi.

The dysfunctional interbank market appears to be one of the reasons why the Fed implemented cross-currency swaps with the European Central Bank (ECB) — so that the ECB could provide term loans denominated in US dollars to European banks. Clearly, these Fed-ECB cross-currency swaps have done little to quell the demand for US dollar-based funding by European and UK banks.

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[1] The dislocation is more severe in shorter-dated FX, with the 3-mo. forward EUR-USD implying a LIBOR spread of –29bp.

Why Is LIBOR So Low?

To us, the most obvious explanation for LIBOR being set so low is the prevailing fear of being perceived as a weak hand in this fragile market environment. If a bank is not held to transact at its posted LIBOR level, there is little incentive for it to post a rate that is more reflective of real lending levels, let alone one higher than its competitors. Because all LIBOR postings are publicly disclosed, any bank posting a high LIBOR level runs the risk of being perceived as needing funding. With markets in such a fragile state, this kind of perception could have dangerous consequences.

So How Much Does LIBOR Understate "Real" Funding Rates?

We consider the following factors in assessing how much LIBOR may understate "real" lending costs:

- 29bp spread between the Fed's 3-mo. Eurodollar bid rate and 3-mo. LIBOR
- 3-mo. forward EUR-USD FX-implied LIBOR spread of 29bp
- Anecdotal evidence of European institutions paying a 20–30bp premium over LIBOR to borrow term US dollars

Based on these three factors, we conclude that 3-mo. LIBOR probably understates real interbank lending costs by 20–30bp.

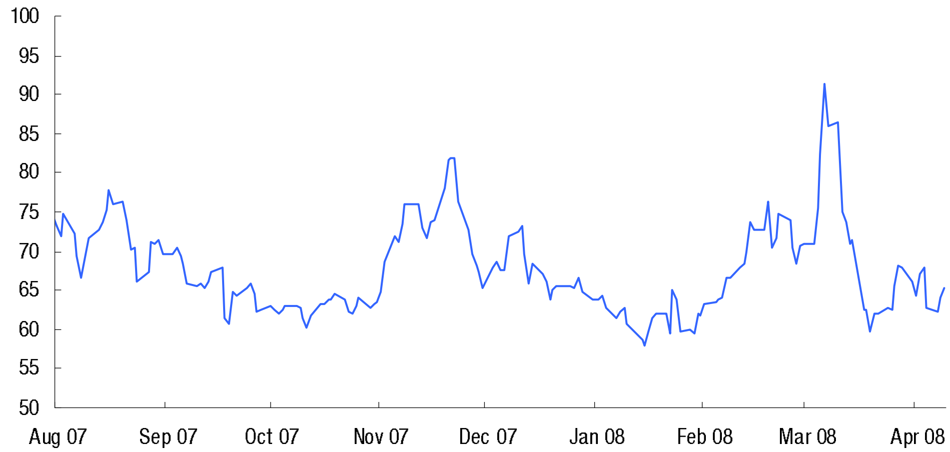
The End Game and the Recommendation

We see two potential outcomes:

- The crisis ends quickly and banks resume lending to each other at LIBOR. Given the current state of bank balance sheets and their stated intentions to continue reducing assets, this may be the least likely outcome, at least in the short run.
- As banks and financial institutions find their real short-term borrowing costs widening versus an artificially low LIBOR, banks may eventually overcome their phobia about being the high offer and start posting higher and more realistic LIBORs. At some point, a new equilibrium may be reached — where real lending at LIBOR resumes because banks believe they are receiving an adequate yield to compensate them for the higher balance sheet costs.

We believe the market is not prepared for the consequences of the second scenario, in which LIBOR rapidly adjusts upward by 20–30bp. To hedge against such an event, we would recommend implementing a swap spread widening trade, ideally in the 2-yr sector because it is closely linked to LIBOR and would widen the most if LIBOR pops wider. However, implementing a 2-yr swap spread trade is extremely balance sheet intensive and therefore quite problematic. As such, we recommend a long 10-yr swap spread trade at the current spread of 64bp.

Figure 5. Historical 10-Yr Swap Spreads, 1 Aug 07–9 Apr 08



Source: Citi.

Figure 6. Summary of Long 10-Yr Swap Spread Recommendation, 10 Apr 08

Trade	Recco Date	Initial Premium	Trade Horizon (Mos.)	Current Size	Target P/L (bp)	Risk (bp)	Stoploss (bp)	ROR (%)	Target Return On Portfolio (%)
Buy $350 million 10-yr Treasury (February 2018), pay fixed on $360 million 10-yr swap	9 Apr 08	64bp	3	$300,000/bp	10	26	10	58	1.0

Risk: Largest two-week change since January 1997. ROR: Return on risk. Return on portfolio based on $300 million model portfolio.
Source: Citi.

Final Thoughts — LIBOR Has to Regain Credibility and Reflect True Interbank Lending Costs, or Everyone Loses

LIBOR has been around for more than two decades and, throughout most of its life, it has maintained a sterling reputation and has supplanted the Treasury bill as the standard bearer of short-term interest rates. If LIBOR, now the most popular floating-rate index in the world, loses credibility because it no longer represents true interbank lending costs, the long-term psychological and economic impacts this could have on the financial market are incalculable.

Disclosure Appendix A1

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