

Market Concerns Regarding LIBOR

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INTERAGENCY FINANCIAL MARKETS GROUP MEETING

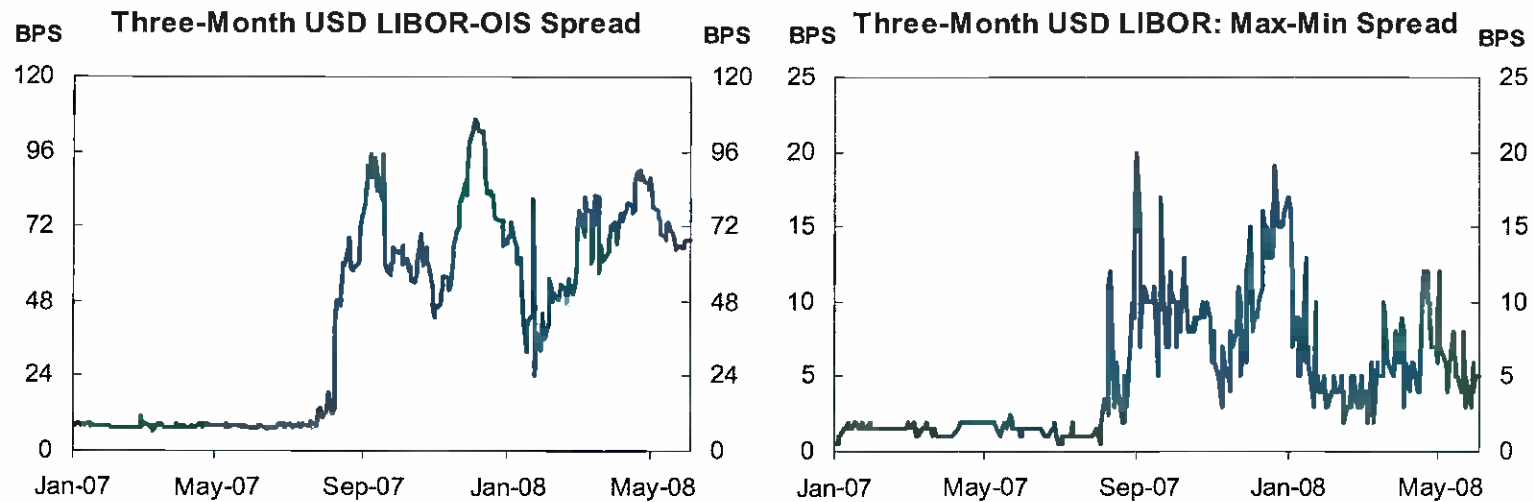
June 5, 2008

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Elevated LIBOR-OIS Spreads Since Aug 2007

Heightened counterparty credit risk and liquidity risk since Aug 2007:

- LIBOR-OIS spreads widened across maturities (dollar, sterling, and euro)
- Extensive credit tiering and name-specific lending



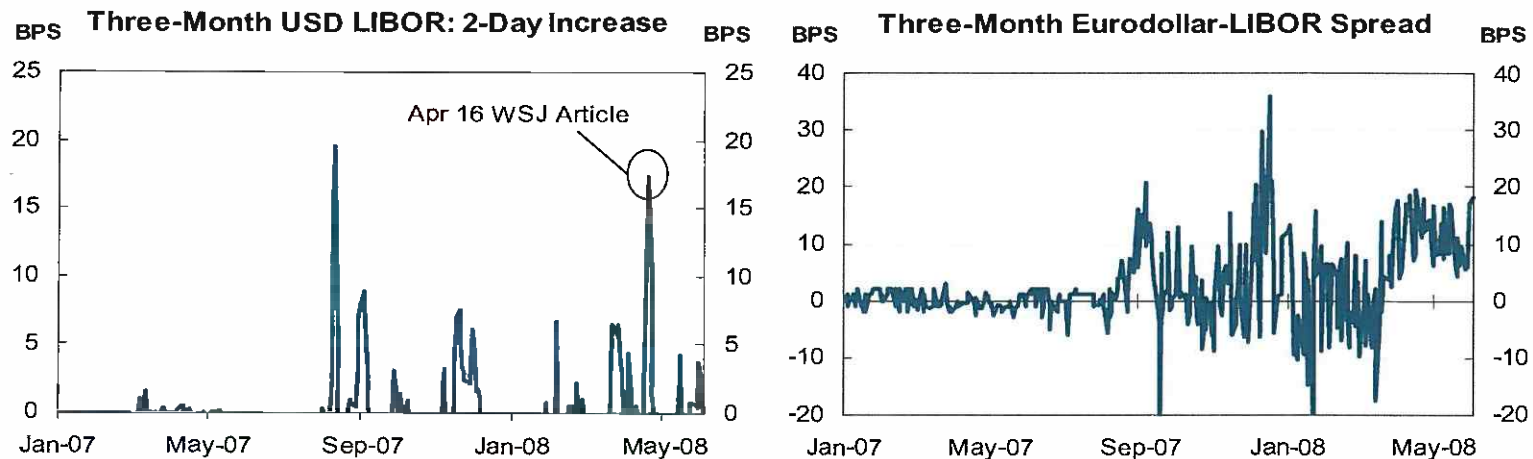
Potential USD LIBOR Misreporting

Allegations of misreporting, designed to avoid stigma, picked up in mid-April:

- Comparisons to Eurodollar deposit rates, FX basis swaps, CDS spreads
- Broker claims that panel banks were bidding above LIBOR quotes

These claims are difficult to evaluate:

- Credit tiering, intraday variation, “reasonable market size”, little trading activity
- However, large re-pricing in 3-month LIBOR following WSJ article on April 16



Suggestions to Enhance LIBOR's Credibility

Market participants point to several problematic features of LIBOR:

- Quoted rates are self-referencing and published
- US sources of liquidity are not in the market at 11am GMT
- USD LIBOR panel is heavily orientated towards European institutions
- Ambiguity in quote size and limited trading activity leads to subjectivity
- Insufficient governance and policing of quotes by the BBA

A number of potential changes have been suggested:

- Make quotes anonymous, or change the definition of the quoted rate
- Changing the time of the fixing, or add a second fixing during the NY session
- Increase the size of the panel and/or include more US banks
- Specify transaction size and/or reduce the number of maturities quoted
- Agree and publish best-practices, and enhance governance of the process

The BBA's and Financial Market's Reaction

The BBA announced results of its annual review on May 30:

- No changes made to the composition of any LIBOR panels
- Recent developments in LIBOR discussed at the meeting
- Details of an enhanced policing mechanism to be provided “in due course”

Broker ICAP proposed New York Funding Rate (NYFR) on May 2:

- NYFR expected to “provide more useful adjunct to LIBOR” rather than “to replace the more transparent, established LIBOR”
- No additional news regarding NYFR since May 14 when ICAP announced that it has no “concrete timetable” for its release

Market impact on trading and hedging activity:

- Limiting exposure to LIBOR – fed funds futures vs. Eurodollar futures
- Complications in pricing and netting swaps contracts
- Possible increase in indexing to alternatives going forward – e.g., OIS

Appendix

Appendix: Overview of BBA LIBOR

LIBOR is a survey-based measure of representative interbank deposit rates in the London market at 11am GMT:

- Banks report rate at which “could borrow funds, were (they) to do so by asking for and accepting inter-bank offers in reasonable market size just prior to 11am.”
- Quotes in 15 maturities, from overnight to 1-year, and across 10 currencies
- LIBOR "fix" is the interquartile mean in each tenor and currency
- All individual quotes – names and rates – are published, even those not within the middle 50 percent
- Membership of each LIBOR panel is reviewed annually by a group of 13 active market practitioners – the “FX & MM Committee”

Appendix: Why LIBOR Matters

Gauge conditions in wholesale unsecured bank funding markets:

- Spread to overnight index swaps (which measure policy expectations)

Referenced by a broad spectrum and enormous volume of contracts:

- Interest rate swaps/futures, consumer mortgages, corporate loans, etc.
- E.g., \$100 trillion (notional) interest rate swaps reference USD LIBOR

Used to price many assets, even if not contractually linked

Appendix: USD LIBOR Panel Members

- US: Bank of America, Citibank, JP Morgan
- Japanese: Bank of Tokyo – Mitsubishi UFJ, Norinchukin
- European: Barclays, Credit Suisse, Deutsche Bank, HBOS, HSBC, Lloyds, Rabobank, RBS, UBS, West LB
- Canadian: RBC

Appendix: ICAP's NYFR

According to ICAP, NYFR will be constructed in the following manner:

- Respondents will be asked to estimate the rate at which a representative A1/P1 bank would be likely to obtain unsecured funds, rather than the rates at which they themselves could borrow (note: not just interbank)
- Rates will be collected at 9:30am ET, for the 1-month and 3-month tenors; rates will be published around 10am ET
- The number of contributors will vary from day to day, and will be at least 24 and perhaps as high as 40
- NYFR will be calculated as the trimmed mean of all responses, with the 6 top and bottom responses dropped
- Individual rates and names of individual contributors will not be published