**An Introduction to the London Interbank Offer Market and LIBOR**

**Historical Perspective**

At the beginning of the 1980s, demand grew for an accurate measure of the real rate at which banks would lend money to each other. An increasing number of banks, especially in the London markets were actively trading new instruments such as Forward Rate Agreements. At the same time London was emerging as a center for loan syndication. While many banks considered these new instruments and arrangements as attractive, they were also inhibited by the nature of the underlying rates that had to be agreed before a bank could enter into a contract. This became increasingly important as London's status grew as an international financial centerAs a result, in 1984 UK banks asked the British Bankers Association (BBA) to develop a calculation that could be used as an impartial basis for calculating interest on syndicated loans.

Today, BBA libor is the primary benchmark for short term interest rates globally. It is used as a barometer to measure strain in money markets and often as a gauge of the market’s expectation of future central bank interest rates. Independent research indicates that around $350 trillion of swaps and $10 trillion of loans are indexed to BBA libor. It is also used for an increasing range of retail products, such as mortgages and college loans.

**The British Bankers Association**

The British Bankers Association (BBA) was asked by the banks it represented to bring in a measure of uniformity into the market and to produce a benchmark to act as a reference for these new instruments. The idea was that rather than negotiating the underlying rate or forming rates by taking averages of ad-hoc panels, banks could now use a standard rate. This facilitated the markets and made benchmarking more transparent and objective. This led to the first British Bankers Association libor rates which were published in January 1986, initially in 3 currencies: US Dollars, Japanese Yen and Sterling.

The design of BBA libor has seen one significant change since its inception. In 1998 it was agreed to change the question from **At what rate do you think interbank term deposits will be offered by one prime bank to another prime bank for a reasonable market size today at 11am?** The new question, that is still used today is **At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?.** This was decided after considerable consultation with the markets as they no longer felt that a universal definition of a prime bank could be given. It also has the advantage of linking the figures submitted by banks to their own activity, rather than a hypothetical entity.

**Bba libor**

BBA libor stands for (British Bankers Association) London InterBank Offered Rate (but in the market simply referred to as libor). Today is produced for ten currencies with 15 maturities quoted for each, ranging from overnight to 12 Months producing 150 rates each business day. BBA libor is a benchmark; giving an indication of the average rate a leading bank, for a given currency, can obtain unsecured funding for a given period in a given currency. It therefore is seen as representing the lowest real-world cost of unsecured funding in the London market. Individual BBA libor rates are the end product of a calculation based upon submissions from a panel, made up of the largest, most active banks in each currency BBA libor is quoted for.

As noted above, today every contributor bank is asked to base their BBA libor submissions on the following question; “At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?” Therefore, submissions are based upon the lowest perceived rate that a bank on a certain currency panel could go into the inter-bank money market and obtain sizable funding, for a given maturity.

Libor rates are not necessarily based on actual transaction, indeed it would not be possible to create the suite of BBA libor rates if this was a requirement, as not all banks will require funds in marketable size each day in each of the currencies and maturities they quote. However, this does not mean the rates do not reflect the true cost of interbank funding. A bank should know what its credit and liquidity risk profile is from rates at which it has dealt, and can construct a curve to predict accurately the correct rate for currencies or maturities in which it has not been active.

All BBA libor fixes are quoted as an annualized interest rate. This is a market convention. So, as an example, if an overnight U.S. dollar rate from a contributor bank is given as 2.00000% that does not mean that a contributing bank would expect to pay 2% of the value of an overnight loan in interest. Instead, it means that it would expect to pay 2% divided by 365.

Contributor banks are selected for currency panels with the aim of reflecting the balance of the market for a given currency based upon three guiding principles:

1.Scale of market activity

2. Credit rating

3.Perceived expertise in the currency concerned.

Each panel for the 10 currencies, ranging from 7 to 18 contributors, is chosen by the independent Foreign Exchange and Money Markets Committee (FX&MM Committee) to give the best representation of activity within the London money market for a particular currency. Twice yearly the FX&MM Committee undertakes an assessment of each libor panel, based on a review of the contributors by BBA LIBOR. The review evaluates each bank by ranking them according to their total cash market and swaps activity over two quarters and selecting the banks with the largest scale of activity with due concern given to criteria 2.) and 3.) above. The review is not limited to current contributors and any bank can submit themselves to the evaluation process for any currency.

Thomson Reuters is the designated calculation agent for BBA LIBOR. Data submitted by panel banks is processed by Thomson Reuters and the daily fixing created using the definitions provided by the FX&MM Committee, and they do so under the supervision of BBA LIBOR.

Each cash desk in a LIBOR contributor bank has a Thomson Reuters application installed allowing them to confidentially submit rates. Each morning between 11:00 and 11:10 an individual at each bank responsible for management of the bank's cash, formulate their own rates for the day and inputs them into this application, which links directly to the fixings team at Thomson Reuters. A bank cannot see other contributor rates during the submission window - this is only possible after publication of the final BBA LIBOR fixing. After calculation the data is released to the market, via Thomson Reuters and other data vendors.

Every BBA libor rate produced by Thomson Reuters is calculated using a trimmed arithmetic mean. Once Thomson Reuters receive each contribution submission they rank them in descending order and then exclude the highest and lowest submission or submissions - this is the trimming process. The decision to trim in the calculation was taken to increase the accuracy of BBA libor quotes. As previously described, BBA libor is a benchmark and including outliers will not reflect a market rate. By excluding outliers it is out of the control of any individual panel contributor to influence the calculation and affect the BBA libor quote.

**BBA libor Rates**

BBA libor is compiled each London Business day by Thomson Reuters and distributed live via a number of data vendors including Thomson Reuter and Bloomberg. Additionally, the financial press, including the Wall Street Journal and Financial Times publish BBA libor data from the previous day. The BBA also produces BBA libor on a daily basis and publishes these rates for free on their website on a two month delay for a six month period, in both Excel (.xls) and Text (.txt) format. You can view these rates through the following link: <http://www.bbalibor.com/rates>

The data you will see will look like this (Note s.n-o/n is the overnight rate). This data were for March 1, 2012.



Other Sources of LIBOR data:

USD LIBOR (Monthly Data):

<http://www.liborated.com/historic_libor_rates.asp>

Daily LIBOR Rates (All Countries):

<http://swapratesonline.com/historic-worldwide-libor-rates.html>

**Libor Probe Said to Expose Collusion**

**Bloomberg.com February 14, 2012**

Global regulators have exposed flaws in banks’ internal controls that may have allowed traders to manipulate interest rates around the world, two people with knowledge of the probe said.

Investigators also have received e-mail evidence of potential collusion between firms setting the London interbank offered rate, said the people, who declined to be identified because they weren’t authorized to speak publicly. Regulators are focusing on a lack of so-called Chinese walls between traders and employees making interest-rate submissions on behalf of their banks, the people said. In some cases, the two groups may have sat close to each other, one person said.

Britain’s Financial Services Authority is probing whether banks’ proprietary-trading desks exploited information they had about the direction of Libor to trade interest-rate derivatives, potentially defrauding their firms’ counterparties, the people said. The investigation may lead to civil fines for the banks and criminal charges for the traders involved, the people said. No penalties are likely from the FSA before year-end, and the case hasn’t moved toward criminal charges, one person said.

“The entire story is very embarrassing for the banks, “said Tom Kirchmaier, a fellow in the financial-markets group at the London School of Economics. “I don’t know how they will eradicate this. The regulators have to rethink the way they set Libor.”

The rate, a benchmark for about $360 trillion of financial products worldwide, is derived from a survey of banks conducted daily on behalf of the British Bankers’ Association in London.

Manipulating Rates

The lenders are asked how much it would cost them to borrow from one another for 15 different periods, from overnight to one year, in currencies including dollars, euros, yen and Swiss francs. After a predetermined number of quotes are excluded, those remaining are averaged and published for each currency by the BBA before noon.

Regulators worldwide are investigating whether banks attempted to manipulate the London, Tokyo and euro interbank offered rates, known as Libor, Tibor and Euribor. The U.S. Securities and Exchange Commission, U.S. Commodity Futures Trading Commission, U.S. Department of Justice, and Japan’s Financial Supervisory Agency are all involved. The probes are being led separately, with individual regulators sharing some information among themselves, one of the people said.

JPMorgan Chase & Co., Deutsche Bank AG (DBK) and HSBC Holdings Plc are among at least seven firms facing a Canadian probe into whether they participated in a conspiracy to manipulate prices on interest-rate derivatives. The nation’s Competition Bureau is investigating the firms’ conduct between 2007 and 2010, according to documents it filed with the Ontario Superior Court in May.

Barclays, UBS

HSBC, Barclays Plc (BARC) and Royal Bank of Scotland Group Plc (RBS) are among banks that have said they’ve received requests for information from global regulators in recent months. UBS AG (UBSN) said on Feb. 7 it had been given conditional immunity from the Swiss Competition Commission as part of an investigation into manipulation of the Yen Libor, Tibor, and Swiss franc Libor rates. The Zurich-based lender was last year granted similar immunity by the U.S. Department of Justice as part of its probes of Yen Libor and Euroyen Tibor rates.

Charles Schwab Corp. (SCHW), the largest independent brokerage by client assets, sued Bank of America Corp., Citigroup Inc. (C) and other banks in August claiming they manipulated Libor from 2007 in violation of U.S. antitrust law.

Spokesmen for Schwab, HSBC, Barclays and Bank of America declined to comment. An official at RBS couldn’t immediately comment. Danielle Romero-Apsilos, a spokeswoman for Citigroup, said in August the Schwab suit is “without merit.” She declined to comment further yesterday.

Price-Fixing

Antitrust authorities are focusing on whether banks might have helped a competitor manipulate one rate in exchange for help moving borrowing costs in a different currency, said another person with knowledge of the investigation. Regulators may view the conduct as a form of price-fixing because it could affect the price of the derivative products, the person said.

The FSA is investigating whether banks’ Libor submissions reflected their actual cost of borrowing and is scrutinizing market data for potential anomalies, another person familiar with the investigation said. The watchdog is scanning e-mails between bankers for code words that could be used to manipulate Libor, said the person, who declined to be identified because they weren’t authorized to speak publicly.

Officials at the FSA in London declined to comment.

Competition Watchdog

Switzerland’s competition watchdog said Feb. 3 it had opened an investigation into 12 banks, saying derivative traders might have coordinated the submissions that determine Libor and Tibor. Traders might have colluded to manipulate the difference between the ask price and the bid price, or spread, of derivatives based on Libor and Tibor “to the detriment of their clients,” the regulator said.

European Union antitrust regulators are also investigating whether banks formed a cartel to manipulate borrowing rates, said two people with knowledge of the probe who declined to be identified because the inquiry isn’t public. Barclays, HSBC and RBS have said the European Commission quizzed them last year.

RBS, the U.K.’s largest government-owned lender, has dismissed at least four employees in connection with the probes, two people briefed on the move said last week. New York-based Citigroup and Frankfurt-based Deutsche Bank also have dismissed, put on leave or suspended traders as part of the investigations, according to two more people.

**Barclays Tumbles as Libor Fine Sparks Lawsuit Speculation**

**Bloomberg.com June 28, 2012**

Barclays Plc (BARC), Britain’s second- largest bank by assets, slid the most in three years after its record fines yesterday for falsifying London interbank offered rate submissions sparked speculation lawsuits will follow.

The shares fell as much as 18 percent as U.K. lawmakers called on Chief Executive Officer Robert Diamond to resign. Barclays stock was down 28.7 pence to 167.4 pence at 12:55 p.m. in London. It was the biggest decline since March 2009.

The London-based bank was fined 290 million pounds ($451 million) yesterday by the U.K.’s Financial Services Authority, the U.S. Commodity Futures Trading Commission and U.S. Department of Justice. The settlements are the first in an international investigation into whether banks tried to manipulate Libor.

Matthew Oakeshott, a member of the Liberal Democrat party who sits in Parliament’s upper House of Lords, said Diamond should resign. U.K. Prime Minister David Cameron said today Barclays has questions to answer about the Libor probes.

“We expect that the cost of lawsuits related to Libor manipulation will dwarf the fines imposed on Barclays,” said Sandy Chen, a banks analyst at Cenkos Securities Plc in London, who is “penciling in multi-year provisions that could run into the billions.”

Royal Bank of Scotland Group Plc (RBS), Citigroup Inc., UBS AG, ICAP Plc (IAP), Lloyds Banking Group Plc and Deutsche Bank AG are among the other firms being probed as regulators worldwide investigate how Libor is set.

Note: Chart below represents Barclays’s trading on the London Stock Exchange (quotes are in British pence).

