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Why and How Should the Libor Be Reformed?

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I. MOTIVATION

Over the last year, large-scale investigations have been launched around the world on allegations of possible collusion and manipulation of the London Interbank Offered Rate ("Libor"). Late in June this year, Barclays agreed to pay $452 million dollars on its conduct related to these allegations, in a settlement involving U.S. and U.K. regulatory agencies.

The Libor has been called "the world's most important number." It is the primary benchmark for global short-term interest rates; the Libor is used as the basis for settlement of interest rate contracts on many of the world's major futures and options exchanges as well as most over-the-counter and lending transactions, and other financial instruments. It is estimated to benchmark payments on several hundreds of trillions of dollars worth of financial instruments.

The Libor is supposed to measure the rate at which large banks can borrow unsecured funds from other banks at various short-term maturities, and for a variety of currencies. The U.S. dollar-denominated Libor ("U.S. dollar Libor"), for example, is set as follows: On a daily basis, 16 participating banks surveyed by the British Bankers Association ("BBA") and submit sealed quotes which answer: "[a]t what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11:00 a.m. London time?" The Libor is then computed by averaging the middle eight quotes, disregarding the four highest and the four lowest.[2]

Following the launch of these investigations and the discovery of documents that suggest that manipulation and collusion may have taken place, some are now calling for a comprehensive reform of the Libor. Still others, however, are reluctant to reform the Libor system, arguing that it is not fundamentally broken and reforms may prove more disruptive than helpful.[3]

In this article I review what I believe are the inherent problems in the structure of the Libor process and put forward a proposal for its reform.

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[2] The determination of the Libor has recently changed. In the context of this article, we will refer to the process of the setting of the Libor as that in place throughout our period of interest, 2006 through 2008.

[3] *See*, for example, an article at BLOOMBERG BUSINESS WEEK, *available at* http://www.businessweek.com/news/2012-06-25/libor-guardians-said-to-resist-changes-to-broken-benchmark-rate.

II. WHY SHOULD THE LIBOR BE REFORMED?

The Libor setting has several textbook markers that make it a good candidate for collusion and manipulation. First and foremost, it is not based on actual transaction data and therefore has the potential, even unintentionally, to be unrepresentative of the actual borrowing costs it is supposed to represent. There is no sense in which the Libor quote "has to be right," since no actual exchanges are necessarily made at that rate.

Second, it is set by a small group of banks that clearly have the ability to influence the rate as they, and only they, determine what the rate will be. If only five banks (out of sixteen) report—perhaps independently, perhaps sincerely—either unusually high or unusually low Libor quotes, they will necessarily move the Libor average for that day. Indeed, with so few banks involved, each bank would have to be careful not to even inadvertently move the rate.

Third, even though the quotes are submitted sealed, they become public knowledge shortly after the Libor is determined. This creates the ability for the banks to coordinate their individual Libor quotes, and then monitor any possible deviations from such agreements. Furthermore, this monitoring can occur in front of the whole public, due to the way the system is set; by itself, it would not raise any suspicions as would be the case were the quotes not made publicly available while still being used to coordinate.

Fourth, there is the incentive among the banks to communicate their Libor quotes in advance. Even if the actual quotes are in no way distorted and are representative of actual borrowing costs, by communicating with each other even just a few hours in advance, the member banks can determine what the Libor is going to be for the day. Such knowledge eliminates risk and creates profitable trading opportunities, profitable at the expense of the market participants on the other side of those transactions. This represents a problem in its own right, independent of whether the Libor itself was ever manipulated.

Fifth, banks may well have the incentive to provide quotes that are unrepresentative of their actual borrowing costs. They might desire to manipulate the rate in a particular direction depending on the net positions in their portfolios that would benefit from a higher (or lower) Libor. Even if they weren't necessarily trying to manipulate the final Libor rate, they may be motivated to (falsely) signal their financial health, by, for instance, submitting low quotes to create the perception of financial strength and *de minimis* short-term credit risk.

Sixth, there is no evidence that the banks' individual quotes were being screened by the BBA to flag any potentially suspicious patterns. At the very least, there are no (public) reports of any actions taken to address possible concerns. Even after knowledge of such large worldwide investigations became public, little or nothing has been done to try to restore the market's confidence in the Libor process. It is true that the BBA has increased the panel of banks from 16 to 20 in the case of the U.S. Libor, but that is little more than a token response that does not address the concerns presented above.

III. HOW SHOULD THE LIBOR BE REFORMED?

The question now is: What can and should be done to improve the Libor process not only to decrease the likelihood that collusion and manipulation may occur in the future, but also to restore the market's confidence in this important benchmark? Below I outline the changes that in my view need to take place in order to enhance the Libor's accuracy and its reputation.

First, the number of participating banks needs to be significantly increased, maybe doubled, so that coordination becomes more difficult. The increase from 16 to 20 banks in the case of the U.S. Libor means only that 6, rather than 5, banks are needed to influence the final rate. That would seem inadequate on its face.

Second, given that the bank quotes are submitted before the banks have borrowed for the day, they cannot report actual costs for that day. Instead, I would suggest that each morning the participating banks should report, for each given maturity, their actual borrowing cost from the previous day and submit a quote on their "expected delta" of borrowing costs for today. In other words, each day they would report that (as a matter of verifiable fact) they borrowed yesterday at x basis points ("bps") and they expect that today those costs will increase (or decrease) by y bps. Though this expected delta would be a guess or a quote, it would represent a small portion of the overall contribution of each of the participating banks (i.e., each day each bank provides the panel with a total number equal to the sum of its actual borrowing cost from the previous day plus its expected delta). And it would become immediately obvious if a bank reported that, day after day, it expected its borrowing costs to increase or decrease but, day after day, they didn't.[4]

Third, the individual quotes need to remain sealed, at least for some amount of time (and possibly forever). Aside from making it harder for banks to coordinate, it also preserves the confidentiality of their borrowing costs, information that is very important to them and which otherwise banks may be unwilling to provide. This would remove the incentive to use the Libor quote as a (false) signal.

Fourth, an agency (maybe the BBA, maybe another agency) will have to compute the Libor and monitor the quotes regularly. Notice that monitoring "expected deltas" for possible manipulation would imply the use of empirical screens to detect unusual patterns such as sequences of negative expected deltas or patterns of correlations across the participating banks. Empirical screens can be powerful in detecting alleged wrong doing—after all, it was through the use of screens by outsiders that the alleged Libor conspiracy and manipulation was first flagged (through preliminary analyses by the *Wall Street Journal* and a 2008 paper that I co-authored).[5]

IV. CONCLUDING REMARKS

Some have argued that "moving the Libor setting from quote-based to actual cost-based will cause disruptions in the market place." Such arguments are unconvincing to say the least. Imagine this were the only change made to the Libor process, that it passes from being quote-based to actual-cost based. This could only lead to a material impact on the realized Libor rate if

[4] If a bank did not borrow the previous day for that particular maturity, then it would not be able to participate in today's Libor panel. This is another reason why the number of banks needs to be significantly expanded, so that on each given day there is a reasonable number of banks contributing to the Libor panel.

[5] C. Mollenkamp & L. Norman, *British bankers group steps up review of widely used Libor*, W. S. J., C7 (April 17, 2008); C. Mollenkamp & M. Whitehouse, *Study casts doubt on key rate; WSJ analysis suggests banks may have reported flawed interest data for Libor*, W.S.J., A1 (May 29, 2008); Rosa Abrantes-Metz, Michael Kraten, Albert Metz, & Gim Seow, *LIBOR Manipulation?* 36 J. BANKING & FINANCE 136-150 (2012), first released on SSRN on August 5 2008, *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1201389.

the individual quotes were not representative to begin with. Only if the quotes were materially false would there be a material impact of moving to actual costs. If the quotes were unbiased expectations of actual costs, then on average we should see no impact from such a change. This "argument" seems like a tacit admission that there is something flawed in the current Libor process.

Whether the participating banks actually submitted misleading quotes, or whether they did so on a coordinated basis, is beyond the scope of this article. I simply wish to show that the Libor process itself has considerable problems, creating the ability, the means, and the incentive to create distortions—"means, motive, and opportunity," if you will, in the parlance of mystery writers. The current investigations have already cast the reliability of the Libor benchmark in doubt. Absent significant reforms, that doubt will remain.