Why Is LIBOR Being Replaced Rather Than Reformed?

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BACKGROUND

The London Interbank Offered Rate (LIBOR) is a reference rate based on the interest rates at which large banks indicate they can borrow unsecured funds from other banks at their London offices. Although such a reference rate had been calculated since the late 1960s, in 1986 the collection and reporting of the LIBOR was taken over and formalized by the British Bankers' Association (BBA).[1] As of 2012, the BBA reported LIBOR for 10 currencies and 15 maturities, from overnight to one year. (Hou and Skeie (2014))

The BBA calculated LIBOR using responses from a panel of banks to the question "At 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 AM?" The top and bottom four responses were excluded, and the remaining responses were averaged. As of October 2013, the BBA dollar-LIBOR panel consisted of 18 banks.

Although LIBOR was created to provide a reference rate for bank loans that was correlated with bank funding costs, LIBOR-based credit products have been swamped by derivatives tied to LIBOR. For example, as of 2014, the Market Participants Group on Reforming Interest Rate Benchmarks (MPG) estimated that about $22 trillion in loans are tied to Libor while $204 trillion in derivatives (notional amount), of which more than half are interest rate swaps, are tied to LIBOR (Market Participants Group (2014)).

Prior to the financial crisis, LIBOR rates tended to move closely with other money market rates including Treasury and Overnight Indexed Swap (OIS) rates. Beginning in 2007, however, spreads of term LIBOR rates over many other money market rates began to widen sharply and became much more variable. In the Fall of 2008, 3-month LIBOR reached a peak of 364 basis points over OIS and 458 basis points over Treasuries. Some academic studies have concluded that the widening owed primarily to liquidity premiums as banks, unsure of future demands on their liquidity and their ability to meet such demands, became both reluctant to lend and eager to borrow at term (See, for example, Acharya and Skeie (2011), Schwarz (2010)). Others have concluded that the widening reflected primarily increased bank credit risk (Taylor and Williams (2008), Smith (2012)).

SCANDAL

Following the crisis, significant concerns about manipulation of LIBOR arose. Manipulation included both reporting low rates to make the bank look stronger than it was and reporting false rates to profit on LIBOR-based financial products. In June 2012, the CFTC announced that it was levying a large fine against a bank on the LIBOR panel for manipulating LIBOR along with another benchmark rate based on the results of an investigation that had begun in 2008 (CFTC (2012)). Ultimately, several large institutions that were implicated payed substantial fines, and several senior bank executives,

1 A dollar-denominated deposit at a bank outside the United States is called a "Eurodollar deposit." Eurodollar deposits arose in the post-War period as a means to avoid the interest rate ceiling placed on U.S. deposits by Regulation Q, reserve requirements, FDIC insurance premia, and other regulations and controls. (Friedman (1969)). Although the market originally arose in Europe, thus the name, the term now applies to any deposits taken outside the United States. Many Eurodollars are deposited at Caribbean branches of U.S. and foreign banks and then transferred onshore.

including the CEOs of two large banks, resigned.[2] Additional controversy arose when it was revealed that the Federal Reserve Bank of New York had communicated its concerns about LIBOR manipulation to the Bank of England four years earlier, in 2008 (New York Fed (2012)).

Concerns about the potential for LIBOR manipulation were amplified by the thinness of the market on which the reference rate was based (Gensler (2012)). For a variety of reasons, including post-crisis credit concerns and downgrades, copious liquidity provided by QE-swollen central bank balance sheets, and regulatory changes, banks have significantly reduced their short-term unsecured borrowing (Wheatley (2012a) and Schrimpf and Sushko (2019)). In 2018, the Federal Reserve Board estimated that only six or seven transactions occurred in the one- and three-month tenors (the most used tenors) at banks on the dollar LIBOR panel, with even fewer transactions at longer tenors (Quarles (2018)).

THE EFFORTS TO REFORM LIBOR

Several official bodies have been involved in the response to the LIBOR scandals. In June 2012 the U.K. Treasury commissioned a review of LIBOR by Martin Wheatley, then CEO-designate of the Financial Conduct Authority (FCA). The Wheatley Review reached three main conclusions: First, because of the huge costs associated with changing reference rates, LIBOR should be reformed, not replaced, unless there is clear evidence the benchmark is severely damaged. Second, LIBOR should be based on actual transactions, and LIBOR fixings in currencies and tenors with insufficient volume should be discontinued. Third, market participants should remain involved in the production of LIBOR. The Wheatley Review also made specific recommendations for strengthening the reporting process, recommended that the BBA be replaced as LIBOR administrator and that the submissions of panel banks on which the reference rate is based only be released with a 3-month lag. (HM Treasury (2012b)).

In February 2013, the G20 instructed the Financial Stability Board (FSB) to coordinate and guide work necessary to reform short-term interest rate benchmarks. The FSB commissioned an Official Sector Steering Group (OSSG) to oversee reforms and a Market Participants Group (MPG) to provide private sector input. In July 2013, the International Organization of Securities Commissions (IOSCO) published principles for financial market benchmarks (IOSCO (2013)) including that the benchmarks should be based on arms-length market transactions if possible, falling back on “expert judgement” if necessary.

In July 2014, the OSSG published a report, endorsed by the FSB and based on input from the MPG, on how to reform major interest rate benchmarks to be consistent with the IOSCO principles (FSB (2014)). The report concluded that LIBOR would need to be replaced by multiple reference rates including a risk-free or nearly risk-free rate for use in derivatives contracts, as well as a reference rate that included bank credit risk for use in bank credit products where there is a need to hedge bank funding costs. The latter rate would preferably be a strengthened LIBOR based to the greatest extent possible on actual transactions. In the specific case of U.S. dollar reference rate, the report states:

> The Federal Reserve and U.S. Commodities Futures Trading Commission (CFTC) support the multiple-rate approach with a set of IOSCO-compliant reference rates that include at least one (near) risk-free rate based on something other than unsecured bank borrowing costs and a second set of IOSCO-compliant rates that include bank credit risk. (p. 38)

The MPG recommended that there be many dollar reference rates including a riskless overnight rate based on official central bank rates or riskless or near-riskless rates (fed funds or repo rates) and term rates based on OIS, Treasury rates, and unsecured bank debt (MPG (2014)). The final category was a reformed version of LIBOR that would be based on a broader set of banks, a broader set of money market transactions including commercial paper and certificates of deposit, and for tenors only

2 While the banks all agreed to settle, ten traders elected to go to trial in the UK or the United States. Eight were acquitted, and two had their cases dismissed (Bray (2017)).

out to 3 months or possibly 6 months. Additional options for broadening LIBOR included using data on futures or bank bonds.

The MPG also reported, however, that low volume in unsecured term markets made it difficult to develop a transactions-based LIBOR replacement. Darrell Duffie (chair of the MPG) and Jeremy Stein (co-chair of the OSSG) described the problem as "Simply put, most banks don't borrow at longer maturities from other banks on most days." (Duffie and Stein (2015). To build a prototype LIBOR+, the MPG needed in many instances to repeat observations from preceding days to achieve a sufficient number of transactions. It also found that the resulting index was downwardly biased (at least relative to LIBOR) at longer maturities in stress times because weaker banks did not borrow at longer terms in such episodes.

The option of fixing LIBOR rather than replacing it was particularly attractive because it offered the prospect of a much less disruptive and costly transition since legacy contracts could continue to reference the benchmark, at least for a considerable period. In a speech on the LIBOR transition, Michael Held, the General Counsel of the New York Fed, states:

> I'll note that, at the outset of these reform efforts, the idea was not to completely replace LIBOR. LIBOR was being reformed to address its weaknesses as far as possible in the expectation that it could continue to be used. Efforts to "fix" LIBOR proceeded alongside the program to identify better alternatives. The idea was that if there were a more attractive alternative, firms would gradually move away from LIBOR of their own accord, with a minimum of disruption, and that LIBOR then would be seldom, if ever, used. LIBOR could still be inherently unstable despite the reform efforts. Perhaps it would go away eventually, maybe dying of loneliness, or perhaps it would stagger on for a small range of transactions—but in any event it would cease to be a problem. (Held (2019)).

Several of the recommendations in the Wheatley Review have been adopted. The BBA has been replaced as LIBOR administrator by the ICE Benchmark Administrator (IBA) which is authorized and regulated by the FCA and independently capitalized. The IBA has reduced the coverage of LIBOR to five currencies and seven maturities (overnight to one year) with the result that the total number of fixings has been reduced from 150 to 35. In addition, individual bank submissions are now published after a 3-month lag. The IBA has also established in a "Roadmap for ICE LIBOR" a prioritization waterfall for submission: transaction, transaction derived (for example, interpolations), and then expert judgement (IBA (2016)).

PROBLEMS DEVELOPING A BANK-CREDIT-RISK-SENSITIVE REFERENCE RATE

Nevertheless, the prospects for the continued survival of LIBOR, or any reference rate that contains bank credit risk, remain in doubt. In part, LIBOR's difficulties stem from the thinness of the underlying market it is meant to measure, particularly in stress times. During the crisis, an episode characterized by the evaporation of term unsecured interbank lending, Mervyn King famously described LIBOR as "…the rate at which banks do not lend to each other." The Alternative Reference Rate Committee (ARRC), a group of private market participants set up by the Federal Reserve Board and the New York Fed in 2014 to identify risk-free alternative reference rates and support an orderly adoption, considered several forms of term unsecured bank borrowing (CP, CDs, Eurodollar, and term fed funds) as the basis for a reference rate. The ARRC ultimately dismissed such rates because of "structural difficulties" – limited transactions, not robust to stress, and an unstable sample of banks participating (ARRC (2016)). Indeed, because of the thinness of the underlying market, the majority of panel submissions for LIBOR each day are based solely on "expert judgement" rather than transactions (Held (2019)).

Indeed, the inactivity in term unsecured funding markets also called into question the need to base bank credit products on LIBOR or another reference rate sensitive to bank credit risk. Insofar as banks were funding themselves much less with term unsecured borrowings, a reference rate tied to such borrowings was correspondingly less important as a hedge for banks' funding costs (Bailey (2017), Duffie and Stein (2015)). In terms of use of in derivatives markets, a risk-free benchmark would seem sufficient.

The prospects for efforts to create a LIBOR replacement deteriorated in 2017 when Andrew Bailey, head of the FCA, raised the possibility of an imminent collapse of the reference rate (Bailey (2017)). One large bank had already dropped out of the dollar-LIBOR panel in 2016, and Bailey revealed that the FCA had for years been "…persuading panel banks to continue submitting to LIBOR." Nevertheless, another bank dropped out of the dollar panel later in 2017. More than forty private lawsuits of LIBOR-panel banks had followed the LIBOR scandal and the paucity of underlying transactions increased the possibility of LIBOR manipulations (Hou and Skeie (2014), Bailey (2018)). A 2016 Wall Street Journal article indicated that banks were eager to drop out of the panel because of the perception of greater legal risks associated with reporting (Burne and Eisen (2016)).

Bailey stated that all the panel banks had indicated that they would prefer to cease as soon as possible the "costs and risks of submitting expert judgements," but that the FCA persuaded the banks to agree to continue submitting until the end of 2021. Four years was judged to be the shortest feasible period to allow for a transition to alternative reference rates.

With a potential end-date for LIBOR established, efforts to reform reference rates shifted from finding multiple alternatives to transitioning existing and new financial instruments to a reference rate other than LIBOR. In the case of dollar-LIBOR, the ARRC had selected the Secured Overnight Financing Rate (SOFR), a broad measure of the overnight Treasury repo rate produced by the New York Fed, as the preferred new reference rate. In a Wall Street Journal editorial in August 2017, Jerome Powell, Governor of the Federal Reserve, and J. Christopher Giancarlo, Chairman of the CFTC, called for market participants to move away from LIBOR because of its uncertain prospects (Giancarlo and Powell (2017)). And in March 2018, the ARRC was reconstituted as "ARRC 2.0" to implement the transition plan to SOFR that ARRC 1.0 had developed the previous year.

In that new environment, holding out the prospect of reforming LIBOR was seen as an unhelpful distraction. In Andrew Bailey's 2017 speech describing the fragility of LIBOR, he stated

> And a further lesson of the past few years is that work on transition is unlikely to begin in earnest if market participants continue to assume LIBOR will last indefinitely. In Switzerland, for instance, it has been clear for some time that the TOIS reference rate would not survive. But only once a date was agreed for its discontinuation – 29th December this year – did serious work on transition to the new reference rate, SARON, begin.[3]

And when discussing the possibility of creating a synthetic LIBOR by adding a term credit premium estimate to a risk-free rate, Bailey stated "It should be clear to current LIBOR users that they must not rest any hopes in a synthetic solution to continuing LIBOR publication" (Bailey (2018)). Michael Held, after recognizing that initial reform efforts were intended, in part, to "fix" LIBOR, endorsed Bailey's message that "…firms should treat the discontinuation of LIBOR as an event that will happen and that they should be preparing for it." (Held (2019)).

CONTINUED DEMAND FOR A BANK-CREDIT-RISK-SENSITIVE REFERENCE RATE

At the same time, demand for a credit-sensitive benchmark continues. A special feature in the March 2019 BIS Quarterly review noted that a 2017 survey by a LIBOR-panel bank found that 80 percent of respondents wanted LIBOR to continue in some form (Schrimpf and Sushko (2019)). Anecdotally, many banks have become concerned about the potential for a risk-free rate to emerge as the only benchmark for credit products. Even if unsecured term funding has become less important for banks, having loan interest rates tied to a benchmark sensitive to bank credit risk provides valuable insurance for banks against stressful times.

Regarding dollar term rates, a potential benchmark is the U.S. Dollar ICE Bank Yield Index being developed by the IBA (the

3 "SARON" (Swiss Average Rate Overnight) is a measure of the overnight Swiss repo rate.

LIBOR administrator). The index is based entirely on actual transactions – term unsecured funding (inter-bank, CDs, and CP), and secondary market trades in bank bonds. The term reference rates are taken from a fitted yield curve based on inputs with a minimum of 10 transactions maturing in the subsequent week and in each of the upcoming 12 months. Even with the broader set of counterparties and financial instruments, the paucity of underlying transactions presents the same challenge encountered by the MPG: to achieve the minimum target transactions, even during a period without market stress, on many days it was necessary to use observations from up to the previous five days. Even with the added observations, the index has exhibited volatility on some days because of extreme outlier submissions. The IBA hopes to launch the index by early 2020.[4]

Another alternative would be to base a bank credit product on SOFR but include a contractual increase in the interest rate that would apply in stress times (Spiro (2018)). For example, the measure of stress as well as the amount of the increase could depend on the spread between corporate bond rates and Treasury rates. Presumably, the measure of corporate bond rates would not meet IOSCO principles for a reference rate, but regulators might view noncompliance as less worrisome for a clause invoked only in extraordinary situations.

CONCLUSION

The efforts to reform LIBOR intended initially to establish multiple alternative reference rates, or at least two: a risk-free rate and a rate that reflected bank credit risk. Public and private organizations attempted to revise LIBOR so that it could continue to serve as the risk-sensitive benchmark, but the efforts were stymied by the thinness of the underlying market for term unsecured bank borrowing. Efforts to develop LIBOR alternatives were largely thwarted by the same lack of transactions. More recently, the prospect of LIBOR panel banks dropping out by 2021 because of legal concerns has added urgency to the efforts to shift financial contracts to a more reliable benchmark. While there is at least one remaining contender for a risk-sensitive rate, questions remain about its robustness especially during periods of stress. Dollar-LIBOR reformers have focused exclusively on SOFR both because most see it as the best long-run solution and because of the need to encourage market participants to begin conversion without delay.

4 The American Financial Exchange has created a benchmark interest rate called "Ameribor" based on borrowings of regional and smaller banks. But because the underlying transactions all have overnight maturities, the resulting index does not seem likely to reflect bank credit risk any more than fed funds or OIS rates, which are considered "near riskless" rates.

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