

# Credit-Sensitive Benchmarks in a Post-LIBOR World

Greg Baer | July 8, 2021

As regulators frequently make clear, the London Interbank Offered Rate, or LIBOR, will cease to exist in the United States in June 2023, and no new contracts should be written by U.S. banks using LIBOR as a benchmark after 2021. An important question, though, is what will replace LIBOR as a reference rate.

For the derivatives market, the general answer clearly is the Secured Overnight Financing Rate, or SOFR. Regulators have mandated its use, and a risk-free rate is a good fit for purpose. So, for approximately \$200 trillion in notional derivatives, SOFR will almost certainly be the predominant replacement rate.

For the wholesale lending market, however, many banks have sought a different rate — one that includes a credit component and thus, acts as a natural hedge in the event of economic stress and a rise in bank funding costs. Market competition in the United States is producing at least three such credit-sensitive rates: Bloomberg’s Short-Term Bank Yield Index (BSBY), ICE’s Bank Yield Index and American Financial Exchange’s Ameribor. In late 2020, the federal banking agencies issued a joint statement reiterating that a “bank may use any reference rate for its loans that the bank determines to be appropriate for its funding model and customer needs.”<sup>1</sup> Moreover, in an October 2020 letter to a group of banks, the heads of the Treasury Department, Federal Reserve Board, Federal Reserve Bank of New York, OCC, FDIC, SEC and CFTC stated that “supervisors will not criticize firms solely for using a reference rate (or rates) other than SOFR” and noted that “the official sector is not well positioned to adjudicate selection of a reference rate between banks and their commercial customers.”<sup>2</sup>

Thus, markets were surprised when the Federal Housing Finance Agency (which regulates Fannie Mae, Freddie Mac and the Federal Home Loan Banks) on July 1 issued a supervisory letter stating that “FHLBank use or adoption of these alternative rates may significantly pose the same safety and soundness and reputational risks that befell LIBOR,” and requiring Federal Home Loan Banks to provide prior notice to (and, implicitly, receive approval from) their examiners before making loans tied to any reference rate other than SOFR.<sup>3</sup> Thus, at least one U.S. government agency now does consider its examiners well positioned to adjudicate the selection of reference rates. And this letter followed similar criticism by the Chairman of the Securities and Exchange Commission of one of the credit-sensitive rates, BSBY.<sup>4</sup> The FHFA letter was issued without prior notice and public comment and includes no analysis of whether its general concerns apply to the actual benchmarks extant in the market.

In light of these developments, this note (1) describes how BSBY works; (2) describes the concerns that led to LIBOR’s demise; (3) analyzes whether BSBY raises the same or other concerns; and (4) notes SOFR’s role as the

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<sup>1</sup> Statement on Reference Rates for Loans, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency, November 6, 2020. <https://www.federalreserve.gov/supervisionreg/srletters/SR2025.pdf>

<sup>2</sup> Letter dated October 21, 2020 from U.S. regulators to participants in Credit Sensitivity Working Group, available at [https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/20201022\\_CSG\\_Letter.pdf](https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/20201022_CSG_Letter.pdf)

<sup>3</sup> See FHFA Supervisory Letter DBR-2021-SYS-052 at <https://www.fhfa.gov/SupervisionRegulation/LIBORTransition/Documents/Alternative-Reference-Rate-Selection-Risk-Management-712021.pdf>

<sup>4</sup> See SEC Chairman’s Prepared Remarks Before the FSOC, June 11, 2021, available at <https://www.sec.gov/news/public-statement/genkler-fsoc-libor-2021-06-11>.

likely predominant rate for derivatives. (We use BSBY for illustrative purposes, and not as an endorsement or prediction vis-à-vis the other credit-sensitive rates.)

## 1. How BSBY works

As described by Bloomberg:

The Bloomberg Short-Term Bank Yield (BSBY) Index aims to measure the average yields at which investors are willing to invest USD funds on a senior, unsecured basis in a list of large and super regional banks at various tenors. The BSBY Index is based on consolidated anonymized transaction-related data and firm executable quotes of Commercial Paper (CP), Certificates of Deposits (CD) and Deposits from Bloomberg electronic trading solutions and the trades of senior unsecured bank Corporate Bonds as reported in TRACE all of which is filtered by a list of eligible banks.<sup>5</sup>

BSBY is based primarily on transaction-related data arising from issuance of commercial paper and wholesale certificates of deposit in money markets. Currently, the size of the CP market is approximately \$1.2 trillion. Daily issuance has averaged \$82 billion between January 2018 and February 2021, and financial institutions account for nearly 60 percent of transactions. The institutional CD market has averaged \$11.3 billion in daily issuance over the last few years.

### CALCULATION METHODOLOGY

Bloomberg sets forth the methodology for calculating BSBY in a fact sheet.<sup>6</sup> Several elements are worth noting.

- Each tenor rate is based only on transaction data in instruments banks use to fund themselves.
- Transactions are not submitted by banks; rather, Bloomberg uses market data available as part of its electronic trading services and TRACE data.
- Transaction data is filtered and anonymized. Based on the calculation algorithm, banks are not aware of the specific mix of data in any single calculation, which can change from tenor to tenor and from one day to the next.
- Only trades of large and super regional banks are used – GSIBs, plus certain other systemically relevant or large regional banks. Currently, BSBY uses data from more than twice the number of banks included in the LIBOR panel (34 versus 16).
- No bank plays any role in the process. And no bank’s paper may constitute more than 20 percent of the rate, per the methodology.
- Individual transactions are trimmed (the top and bottom 25 percent dropped) and then translated into a curve pursuant to a pre-set, publicly disclosed methodology.
- A fallback process is instituted in the event that there is insufficient daily trading volume in any tenor. Those minimum volumes are pre-set: \$60 billion for the Overnight rate; \$10 billion for the 1-Month tenor; \$10 billion for the 3-Month tenor; \$10 billion for the 6-Month tenor; and \$9 billion for the 12-Month tenor.
- The methodology-driven, automated fallback procedure first uses a three-day rolling window of data to meet the volume threshold; if three days do not include sufficient volume, then a four-day window is used; if four days are insufficient, then five days are utilized; if five days are insufficient, then the previous business day’s rate is carried over.

<sup>5</sup> <https://assets.bbhub.io/professional/sites/27/BSBY-Methodology-Document-May-2021.pdf>

<sup>6</sup> Id.

- BSBY has been independently reviewed and found compliant with the [IOSCO Principles for Financial Benchmarks](#).<sup>7</sup>

In its supervisory letter, the FHFA criticizes such processes in general terms:

To address insufficient transactions, sponsors of alternative reference rates look to proxies for actual transactions, including executable quotes. Those sponsors also resort to the use of various methods of looking back over periods of time to garner enough transactions to produce a rate or use regression models to predict a rate when there are too few transactions. These proxy mechanisms introduce a number of additional risks to the integrity of the rate production process, including operations and model risk.

It is difficult to reconcile this generalized concern with the particular process used by Bloomberg (and presumably by ICE and AFX) — e.g., what model risk is presented by using Bloomberg market quotes or TRACE even when they are using multiple days to achieve a sufficient number of transactions. Moreover, CME, using a methodology reportedly developed by the Federal Reserve, is using executable quotes along with transactions to create term SOFR, and it seems unlikely that the FHFA is seeking to discourage use of term SOFR.<sup>8</sup> Lastly, the FHFA has not identified why or how conformance with the IOSCO principles is insufficient as a general matter.

### FALLBACK IN THE EVENT OF ILLIQUIDITY

Leaving aside Bloomberg’s calculation methodology and FHFA’s unexplained problems with it, there remains the question of what would happen in the event that sufficient market data were unavailable to calculate BSBY – or if Bloomberg at some point otherwise chose to get out of the business of publishing BSBY. BSBY’s fact sheet does not reckon with its own demise, and it is not clear from its fact sheet at what point illiquidity would lead Bloomberg to no longer publish the previous day’s rate as the current day’s BSBY screen rate. Thus, banks have established by contract what occurs in the event that underlying illiquidity persists or the index is terminated. Some examples are available in 8-Ks filed with the SEC.<sup>9</sup> Different banks may have different fallback triggers, but, generally, at some point after a current BSBY screen rate becomes unavailable, a fallback rate based on SOFR will be used: for example, a rate that is the sum of compounded SOFR + a BSBY-SOFR spread to reflect the historical difference between the two rates. Alternative fallback provisions may be developed and gain traction as the market evolves, and a market convention may eventually emerge. Suffice to say, market participants are keenly aware of the need for robust fallback language.

### THE MARKET FOR BSBY

Of course, the future of BSBY depends not only on the ability of banks to supply it, but also on whether borrowers demand it. There has been market interest in using BSBY for the commercial loan market and related derivatives.<sup>10</sup> Anecdotally, some banks are offering borrowers a choice of a BSBY-based rate or a SOFR-based rate.

There are other reasons borrowers (as well as lenders) might like BSBY. First, BSBY behaves very similarly to LIBOR, which means that the spread paid by a commercial loan borrower on a BSBY-based loan will be very similar, if not

<sup>7</sup> See Bloomberg Index Services Limited, *Management Statement of Adherence with the IOSCO Principles for Financial Benchmarks*, as of April 14, 2021, available at [https://assets.bbhub.io/professional/sites/10/1095037\\_BSBYManagementStatementOfIOSCOPrinciples.pdf](https://assets.bbhub.io/professional/sites/10/1095037_BSBYManagementStatementOfIOSCOPrinciples.pdf)

<sup>8</sup> CME Term SOFR Reference Rates Benchmark Methodology, CME Group Benchmark Administration Limited, April 21, 2021, available at <https://www.cmegroup.com/market-data/files/cme-term-sofr-reference-rates-benchmark-methodology.pdf>

<sup>9</sup> See, e.g., <https://www.sec.gov/Archives/edgar/data/0000070858/000119312521170110/d186535d424b2.htm>; <https://www.sec.gov/Archives/edgar/data/0000070858/000119312521173438/d186535d424b5.htm>; <https://www.sec.gov/Archives/edgar/data/0001649744/000119312521166645/d157092dex101.htm>.

<sup>10</sup> See “New U.S. credit benchmarks gain traction as Libor deadline approaches,” April 26, 2021 at <https://www.reuters.com/business/finance/new-us-credit-benchmarks-gain-traction-libor-deadline-approaches-2021-04-26>

identical, to the spread the borrower pays on its existing LIBOR-based loans, easing contractual negotiations designed to transition instruments away from LIBOR. Second, BSBY comes with a term structure, while term SOFR is not yet available as the market indicators for term SOFR have not yet been met (as discussed further below). Third, banks are also selling BSBY-SOFR basis swaps, which allow borrowers to hedge any basis risk from the credit-sensitive benchmark. Thus, as regulators reiterate that no new contracts be written on LIBOR after the end of 2021, and yet a term structure for SOFR despite their best efforts has yet to emerge, BSBY is a plug-and-play solution that could facilitate this transition.

That said, at this point the BSBY-based market is still in development. Of course that also means that the financial stability costs of allowing experimentation are extraordinarily low.

## 2. Concerns Motivating the Move From LIBOR

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 LIBOR was taken over and formalized by the British Bankers' Association (BBA). 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?" Although LIBOR was created to provide a reference rate for bank loans that was correlated with bank funding costs, it became widely used in derivatives markets.

Four problems arose with LIBOR at various times, leading to its planned cessation. (Much has been written, and in some cases litigated, on each topic, so this summary will be brief.)

First, there were allegations that during the financial crisis, banks understated their borrowing costs in order to project stability to the market.<sup>11</sup>

Second, individual traders persuaded the individuals at banks responsible for making the submissions to understate or overstate true borrowing costs in order to influence the LIBOR rate and improve their derivative trading positions, which were tied to that rate.<sup>12</sup>

Third, term unsecured interbank lending shrinks in times of significant market stress. As a result, the indicative term rates that banks reported on which LIBOR was based in such times were based entirely on judgment. Banks were reporting the interest rate at which they thought they could attract term funding if anyone were willing to provide them term funding.

Fourth, banks were increasingly unwilling to continue submitting the responses used to derive the LIBOR rates because of legal risks associated with reporting as more than 40 private lawsuits of LIBOR-panel banks had followed the LIBOR scandal.<sup>13</sup> In 2017, Andrew Bailey, head of the UK Financial Conduct Authority (FCA), raised the possibility of an imminent collapse of the reference rate, noting that one large bank had already dropped out of the USD-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 USD panel later in 2017.

<sup>11</sup> <https://www.wsj.com/articles/SB121200703762027135>. The *Journal* article and study was at first denied by regulators, but subsequently forced them to investigate further.

<sup>12</sup>See, e.g.,

<https://www.cftc.gov/sites/default/files/idc/groups/public/@Irenforcementactions/documents/legalpleading/enfbarclaysorder062712.pdf>

<https://www.cftc.gov/sites/default/files/idc/groups/public/@Irenforcementactions/documents/legalpleading/enfdeutscheorder042315.pdf>

<https://www.cftc.gov/PressRoom/PressReleases/6472-12>

<sup>13</sup> Burne and Eisen (2016)).

### 3. Does BSBY Raise the Same Concerns as LIBOR (or Additional Concerns)?

#### Manipulation

From the perspective of potential manipulation, BSBY appears to be different from LIBOR circa 2008 in every possible respect. No bank judgment is involved in the submission. In fact, there is no submission. BSBY's rate is determined by actual transactions and firm, executable quotes, whereas LIBOR was based on bank quotes utilizing their judgment on what rate they could borrow funds.<sup>14</sup>

In addition, the BSBY methodology has several built-in protections that prevent the manipulation of rates. More precisely, the weight of each transaction is capped; the weight of each bank in any given BSBY tenor cannot exceed 20 percent; and all yields outside the interquartile range are eliminated from the final calculation, meaning that outlier submissions do not affect the rate.

Given these protections, it is difficult to see how any bank could manipulate the rate. Regarding transactions, it seems highly unlikely that a corporate treasurer would choose to pay an above-market interest rate for a CP or CD issuance, thereby raising the bank's funding costs, in order to gain a secondary benefit for the firm's traders. (Of course, there would be no ability to pay a below-market interest rate.) Even then, the rate would not be included in the calculation if it were an outlier, and the treasurer would not even know if the transaction conducted was relevant to that day's calculation of the rate for the relevant tenor. Regarding quotes, Bloomberg has back-tested the index to determine its sensitivity to misquotes by market participants, and found that even for large changes on a large amount of quotes, the impact on the index is less than 0.1 basis points 95 percent of the time.<sup>15</sup> As noted above, the use of firm, executable quotes is IOSCO-compliant, and a practice used in calculating Term SOFR.<sup>16</sup>

#### Financial Stability

Financial stability concerns appear to focus on the volume of issuance supporting a published BSBY rate, and the potential for that underlying market to dry up. For example, the SEC Chairman stated that "markets underpinning BSBY not only are thin in good times; they virtually disappear in a crisis."<sup>17</sup>

As described above, in the event of temporary market liquidity, Bloomberg would base its rate on a rolling window of data, out to five days. If five days of data were insufficient to generate a minimum volume of trading data (suggesting a market event of greater than five days), the BSBY rate would simply repeat the prior day's rate. In effect, the rate would become fixed based on prices on the last day of a sufficiently liquid market.

Of course, there is also the possibility of a more protracted market event, leading either to Bloomberg no longer publishing BSBY or contractual backup clauses otherwise being triggered. Again, as described above, those backup clauses at this point universally default to a SOFR-based rate. Given that regulators consider SOFR a (and, for some, the) model rate, it is difficult to see how a rate that adds a fixed spread to SOFR could be characterized as a financial stability problem.

Of course, this assumes that contracts have robust backup language. Certainly, regulators may wish to ensure that such language is present, and is clear both with respect to what the fallback rate is and the circumstances that

<sup>14</sup> Firm executable quotes are multiplied by 12.5 percent to prevent them from overpowering transaction data. Bloomberg Short-Term Bank Yield (BSBY) Index Methodology, May 2021, p.4. <https://assets.bbhub.io/professional/sites/27/BSBY-Methodology-Document-May-2021.pdf>

<sup>15</sup> *Id.* at p. 12.

<sup>16</sup> See IOSCO Principles available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf>; CME Term SOFR Reference Rates Benchmark Methodology, CME Group Benchmark Administration Limited, April 21, 2021, available at <https://www.cmegroup.com/market-data/files/cme-term-sofr-reference-rates-benchmark-methodology.pdf>

<sup>17</sup> *Supra* note 4.

would trigger it.<sup>18</sup> (They should also ensure that banks use robust language with respect to SOFR, as any reference rate can cease to exist. For example, on Jan. 9, 2003, the Federal Reserve stopped publishing the discount rate and replaced it with the primary credit rate, which was about 150 basis points higher relative to the target federal funds rate.) Of course, as noted, this market is still in development, and there is every reason to believe that a suitable market convention will emerge if given time.

#### 4. SOFR as a Replacement Rate for Derivatives

At this point, there appears to be little to no doubt that SOFR will be the benchmark rate for most derivative transactions. Investors in interest rate futures and swaps are interested in shedding or acquiring interest rate risk, and it was always odd that LIBOR was the rate in use for those markets. One setback occurred when in March 2021 the ARRC announced that it would not be in a position to recommend a forward-looking SOFR term rate by mid-2021, as promised.<sup>19</sup> Basically, trading in SOFR futures has been too thin to construct a reliable yield curve on which to calculate term SOFR rates. Still, trading in SOFR-linked futures is growing steadily and seems poised to pick up sharply, as the inter-dealers swaps market is set to shift from LIBOR to SOFR under the CFTC’s “SOFR First” initiative, and at some point the CME group will publish daily term SOFR rates.<sup>20</sup> That said, there will no doubt also be trading in derivatives for whatever loan reference rates ultimately become popular, as lenders and borrowers will be interested in swapping into fixed-rate loan yields or shedding basis risk.

#### Conclusion

A candid assessment of the risk here is important, as is clarity from the government about its view of that risk. Anecdotally, at least a few borrowers have chosen to stay with LIBOR rather than move to BSBY in the wake of the recent statements from the FHFA and SEC. From the foregoing analysis, BSBY does not appear to be subject to manipulation or present a financial stability risk, but if government agencies believe that it or some other reference rate is fatally flawed, then the appropriate process for taking such action is a regulatory one, with prior notice and public comment by the affected parties (presumably including the people in the business of publishing the benchmark, as well as borrowers and lenders) — not a non-public process using examiners to direct individual firms to avoid that benchmark.<sup>21</sup> As noted, regulators may wish to monitor fallback language to ensure that it is present and sufficient.

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<sup>18</sup> For example, Bloomberg’s fact sheet currently anticipates repeating the BSBY Screen Rate in the event that there is insufficient volume to generate a new rate, and there will need to be contractual clarity about how long a repeated rate could continue to govern before triggering a fallback rate.

<sup>19</sup> See <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/arrc-press-release-term-rate-for-publication>

<sup>20</sup> See ARRC announcement on June 8, 2021 at <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/20210608-arrc-release-supporting-mrac-announcement-final> (noting that interdealer brokers will change USD linear swap trading conventions from USD LIBOR to SOFR on July 26, 2021 and that, as a result, term SOFR will thereafter be available).

<sup>21</sup> See [https://en.wikipedia.org/wiki/Operation\\_Choke\\_Point](https://en.wikipedia.org/wiki/Operation_Choke_Point)