Michael Held: SOFR and the transition from LIBOR

Remarks by Mr Michael Held, Executive Vice President of the Legal Group of the Federal Reserve Bank of New York, at the SIFMA C&L Society February Luncheon, New York City, 26 February 2019.

* * *

As prepared for delivery

Thank you for that kind introduction, and for the opportunity to speak to you all today. As always, my remarks reflect my own views and not necessarily those of the Federal Reserve Bank of New York or the Federal Reserve System.[1]

When I was thinking about what to talk about today, I recalled how everybody's favorite question at these kinds of events is, "What keeps you up at night?" Of course, at the top of my own list is whether my daughter is going to get into a good kindergarten in Brooklyn. But not far below that is reference rate reform. Today I'll keep the former to myself, and speak instead about reference rates.

It's not just me who's concerned. The Securities Industry and Financial Markets Association (SIFMA) named reference rate transition from the London Interbank Offered Rate (LIBOR) to its alternatives as one of two leading fixed-income market developments for 2019.[2] And the Financial Stability Oversight Council (FSOC) has repeatedly identified reference rate transition as a financial stability risk.[3] Today I'd like to give you an update on the state of that transition. Here's the preview: The task is immense. But it is not insurmountable. Much work has been accomplished, and much work remains. Every firm that has exposure to LIBOR needs to prepare now for the risk—indeed, the likelihood—that LIBOR will cease in the near future. I'm optimistic that we can get there. But, as Tim Geithner liked to say, hope is not a plan.

How Did We Get into This Fix?

Before discussing solutions, let's review what we're trying to solve.

It became apparent after the financial crisis that LIBOR was being manipulated. Financial firms misstated their LIBOR submissions—often in collusion with each other—to make better returns on their swap books. During the financial crisis, they also submitted artificially low rates to avoid signaling financial weakness. Manipulation was possible because of the way LIBOR submissions were made. Banks were asked to estimate the rate at which they *could* borrow from other banks, not rates at which they *actually* borrowed. Their quotes were hypothetical—guesses if you will—and were therefore particularly easy to compromise.

At the same time, the way banks fund themselves has changed. The unsecured London interbank market, which LIBOR was designed to measure, was active when LIBOR was created, but that just isn't how banks finance themselves any more. The Fed estimates that on a typical day there are currently around six to seven actual market transactions—totaling about $500 million—that could underpin one- and three-month U.S. dollar LIBOR across all of the panel banks. For the six-month tenor, there are only two or three transactions per day. At the one-year tenor the average is one transaction per day, and on many days there are none.[4] That means that the majority of panelist submissions each day are based solely on "expert judgment."

Although actual transactions underlying LIBOR have diminished, its use as a benchmark has become ubiquitous. The gross notional value of all financial products tied to U.S. dollar LIBOR is around $200 trillion—about 10 times U.S. GDP.[5] That includes $3.4 trillion of business loans, $1.8 trillion of floating-rate notes and bonds, another $1.8 trillion of securitizations, and $1.3 trillion of consumer loans held by about four million individual retail consumers, including around $1.2 trillion of residential mortgage loans. The remaining 95% of exposures are derivative contracts, which we learned in the financial crisis have consequences for both Wall Street and Main Street.

So, every day, the payments on $200 trillion of exposures are calculated based on a handful of transactions worth a few hundred million dollars at most. That's like a very tall, very broad building built on a very narrow foundation. Imagine an upside-down pyramid. It's not stable, and, as we will discuss shortly, it's getting more rickety by the day. You don't want to be standing near it when it comes down.

There is, thankfully, a coordinated global effort to address LIBOR's shortcomings. That work has focused on creating more reliable alternatives. The Financial Stability Board (FSB)[6] and the International Organization of Securities Commissions (IOSCO)[7] have published roadmaps for reform. Their shared principle is that benchmarks should be based on observable, arms-length transactions rather than estimates.

To meet this expectation, an FSB steering group has coordinated working groups for each of the major IBOR benchmarks. The mandates of these groups are to identify alternative rates and to begin transitioning to them.

In 2014 the Federal Reserve convened the Alternative Reference Rates Committee (ARRC) to plan the transition away from U.S. dollar LIBOR.[8] The ARRC conducted two public roundtables, published a written consultation, and created an advisory group of end users across market sectors. The ARRC's criteria for U.S. dollar LIBOR's replacement included methodological quality, accountability, governance, and ease of implementation. In the end, the ARRC recommended a new rate that the New York Fed had proposed in cooperation with the Treasury Department's Office of Financial Research.[9] The new rate is called the Secured Overnight Financing Rate (SOFR).

The New York Fed has published SOFR every day since early April of last year.[10] SOFR measures the cost of overnight borrowings through repo transactions collateralized with U.S. Treasury securities, which is the deepest and most liquid money market in the U.S. It is based on actual transactions and takes in more transactions than any other Treasury repo rate available, recently around a trillion dollars each day. SOFR is relevant to the cost of borrowing for a wide array of market participants, was constructed to meet the best practices for benchmarks set out by IOSCO, and is built to accommodate future market evolution.

I want to pause here to acknowledge that, as an overnight rate, SOFR has been the subject of criticism for sometimes being volatile from day to day, especially near quarter- and year-end. I think such criticism is misplaced. Most users of SOFR don't use a single day's rate to determine their payments; they use average rates, which are not much affected by daily volatility.

Parallel work has been going on in other jurisdictions whose currencies are used in major benchmarks. Working groups for sterling, euro, Swiss franc and yen IBORs[11] have all endorsed overnight rates as their preferred alternatives to those rates.[12] Three of the alternative rates are (or will be) administered directly by central banks, reflecting the recognition that crucial interest rate benchmarks are a public good, and their integrity and sustainability are key to financial stability.

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.

While this work was underway, new regulations brought the production of LIBOR under the supervision of the UK Financial Conduct Authority (FCA) and introduced minimum requirements for benchmarks used in the EU. In 2017, Andrew Bailey, the head of the FCA, spotlighted the possibility that LIBOR itself might cease to exist altogether.[13] Bailey announced that the FCA had been exerting an increasing amount of persuasion to get panel banks to keep submitting quotes, and had gotten their commitment to continue until the end of 2021. But he warned that the FCA could not ensure that LIBOR would be published at all after that.

Suddenly, instead of just the general threat that LIBOR could cease to be produced someday, there was a specific expiration date on the horizon. The challenge to the market was no longer to gradually start writing new contracts on alternative rates like SOFR instead of LIBOR, but to prepare for the risk that LIBOR could entirely cease to exist within a fairly short time frame. That was a much bigger job, because when you looked at the underlying contracts that used LIBOR, they didn't provide very well for LIBOR simply disappearing. I blame the lawyers, and our congenital lack of imagination. Even when financial contracts deal with the possibility that a LIBOR quote might not be available, they seem to have been drafted assuming that the gap is temporary, not permanent. In a permanent cessation of LIBOR, the fallback solutions in existing contracts become impractical or materially change the economics. That's a situation that invites litigation, and in the case of LIBOR that litigation would be on a massive scale. So while this prospect might not be unwelcome to certain members of the litigation bar, this is not good news for those interested in maintaining financial stability.

For example, many contracts state that if a calculation agent cannot find a LIBOR quote for a given day on the usual Reuters screen, it will call three large London banks and ask them what their borrowing rate is for that day—basically try to privately replicate LIBOR. Imagine if every calculation agent for every transaction tried to do this every time they had to set LIBOR. There would be chaos, especially when those London banks had already decided to get out of the LIBOR-estimating business. Why would they even respond?

For some types of transactions—floating-rate notes, for example—there is a further fallback: to fix the interest rate at whatever the last LIBOR quote was. This is not a very satisfactory solution to either the issuers or the borrowers who thought they had an instrument that protected them against interest rate risk. Other transactions like syndicated loans may revert to prime rate loans—again, not what borrowers may want. And, for derivatives, there simply may be no further fallback. You can imagine the litigation risk when the reference rate for a 20-year contract disappears and there's no clear path to replace it. Now imagine 190 trillion dollars' worth of those contracts. This is a DEFCON 1 litigation event if I've ever seen one.

Where Are We Now?

Those are the issues that the ARRC, the other IBOR working groups, and central banks in general have confronted over the last few years. Let me turn now to the work at hand.

There are two urgent tasks for every market participant with LIBOR exposure. First, if you find yourself in a hole, stop digging. What market participants must do right now is stop writing new contracts on LIBOR and start using SOFR or at least another robust alternative. And, especially if you need to keep using LIBOR, make sure your new contracts have strong and workable fallback language. That was one of the original recommendations the various official sector groups made as far back as 2013, but the people writing the contracts don't seem to have been paying attention. As I'll describe in a moment, very soon there will be specific fallback language that represents the consensus best practice to use in each type of U.S. dollar LIBOR-linked financial product going forward.

The second urgent task is to deal with the trillions of dollars of existing contracts that extend past 2021 and don't have effective fallbacks. That's a more serious problem for some types of instruments than others. The large majority of business loans in existence today will mature or be renegotiated before the end of 2021 in the ordinary course. So the loans can be converted entirely to SOFR loans before the clock runs out on LIBOR, or at least fallback provisions can be added. There's also good news on derivatives, relatively speaking. A large percentage of derivative contracts are also shorter-term. Over-the-counter derivatives that do extend past 2021 can be amended to incorporate new rates and fallback provisions through a protocol procedure that the International Swaps and Derivatives Association (ISDA) will put in place. That's still a lot of work for everyone who has LIBOR derivatives, but it's a relatively clear way forward. And for exchange-traded derivatives, the exchanges themselves can specify fallbacks through rulebook amendments. The exchanges have indicated they will adopt the same basic fallback methodologies as ISDA. This is all good news.

Consumer loans present different issues. The documentation generally gives the lender discretion to unilaterally choose a comparable rate if LIBOR goes away. That sounds simple. But, in practice, the knot of reputational, operational, and legal considerations involved in changing the interest rate basis on consumer loans will require attention and resources to unravel. And over 40% of LIBOR-based residential mortgage loans currently outstanding extend past 2021.

One of the more difficult challenges is the one posed by floating-rate notes, securitizations, and preferred stock whose payments are tied to LIBOR. These securities either have no fallbacks at all to handle a LIBOR cessation, or they effectively become fixed-rate instruments. And, in practice, it is very difficult, if not impossible, to add the kind of provisions that will be standard for new issuances going forward.

A year after Andrew Bailey's 2017 speech, he reiterated that firms should treat the discontinuation of LIBOR as an event that *will* happen and that they should be preparing for it.[14] For my part, that's also the message I would ask you to take away today. You can think of this as a call to arms or as a threat or as simply a warning. What's important is that you act on it. To tackle the issues a LIBOR cessation presents for cash products, the Fed reconstituted the ARRC in 2018 to broaden its membership and its mandate. "ARRC 2.0" now has dedicated workgroups for floating-rate notes, syndicated and bilateral business loans, consumer products, and securitizations. Those workgroups include market participants that weren't all members of "ARRC 1.0" but are active in their specific sectors. There are also working groups dealing with legal, regulatory, and accounting issues. Thanks to these working groups, for the first time market participants and their lawyers now have not just general concerns and warnings, but specific actionable language to react to and start to use in contracts across different products. Again, this is good news.

The ARRC's recommendations are voluntary, and the Federal Reserve is not mandating what fallbacks to use. But there's a lot of value in a common approach. If LIBOR ceases and different instruments that use it fall back to different rates or at different times, basis risk will be higher and hedging more difficult. So the ARRC started its fallback work by adopting a set of guiding principles to apply across all product types.[15] Among other things, those guidelines suggested that, to the extent practicable and appropriate, market participants should (1) maintain consistency of fallbacks across asset classes and minimize basis risk between products; (2) use SOFR or a benchmark based on SOFR as the replacement rate; (3) minimize value transfer over the life of the contract if the fallback is triggered; and (4) include specific triggers that activate the fallback.

Following these overall principles, the ARRC commenced consultations on specific fallbacks for four types of cash products: floating-rate notes,[16] syndicated business loans,[17] bilateral business loans,[18] and securitizations.[19] In general, the consultations proposed that following a trigger event—such as LIBOR being discontinued—the instrument would instead pay interest at SOFR or a rate based on SOFR, adjusted so the new rate is comparable to the old one. ARRC's consultations recognized that different solutions may be necessary or preferable for different markets and products, but promoted common approaches as much as possible.

The comment periods for the consultations have closed, and the ARRC is now reviewing the feedback. Final recommendations are expected to be published very soon.

You may have noticed that I didn't mention an ARRC consultation on fallbacks for derivatives, even though ARRC's original purpose was to address benchmark transition in derivative products. That's because the FSB's Official Sector Steering Group asked ISDA to do that for derivatives on all of the IBORS. So, alongside the ARRC consultations for cash products, ISDA has been conducting consultations on fallback provisions for IBORS in multiple currencies,[20] and has said it will be putting out a U.S. dollar LIBOR consultation in the near future. One of the key questions being discussed is how closely aligned the cash products fallbacks and the derivatives fallbacks will be.

The ARRC has also been an essential vehicle for engaging the official sector to address regulatory obstacles to LIBOR transition. For example, replacing fallback language in legacy, uncleared swaps presents a host of issues under the swap margin rules. ARRC's regulatory working group is actively engaged with the Commodity Futures Trading Commission, the Federal Reserve, and other regulators to address those. On the accounting side, the Financial Accounting Standards Board has ruled that SOFR is eligible for hedge accounting treatment.

While all the consulting and coordinating and kvetching has been going on, market participants have gone ahead and begun the transition to actually using SOFR. SOFR swaps are being quoted by dealers and cleared by central counterparties. CME Group and LCH are clearing SOFR-linked swaps and are moving quickly to using SOFR for discounting curves and interest on collateral. CME Group and Intercontinental Exchange have listed SOFR-linked futures. Over $56 billion in floating-rate financing based on SOFR has been issued in all sectors of the debt markets.[21] And the Treasury Borrowing Advisory Committee has discussed the possibility of issuing SOFR-linked floating-rate notes.

These are all reasons for optimism. But I'm a realist—some would say a pessimist. It is not yet time to chill the champagne. As I said at the beginning of my remarks, much work remains.

Life After LIBOR and How We Get There

Looking forward, the risks from LIBOR transition are both macro- and micro-prudential—a risk to the system is always built up from risks to individual firms. On the macro scale, as I mentioned earlier, the FSOC has identified reference rate transition as a financial stability risk. The President of the New York Fed, John Williams, was just appointed co-chair of the FSB's steering group. He succeeds Fed Chairman Jerome Powell in that role. From the beginning, the Fed's mantra has been that the transition away from LIBOR has to be led by the private sector. But the Fed clearly has a role to play. The New York Fed will continue to be engaged through our work with the ARRC, our coordination with the other international transition efforts, and our role as administrator of our own benchmark rates.

At the micro level, sound risk management demands that every firm assess its vulnerabilities if LIBOR ceases to be published, and engage in appropriate planning to address those risks across its balance sheet. Firms must have a safe and sound process for addressing all aspects of this transition. They also need to select alternative rates that are robust and resilient, in line with current best practice. At the Fed, we've been thinking about this risk across all portfolios, from small community banks to the largest institutions. Our focus so far has been on outreach and education. We have been encouraging examiners to raise awareness with their supervised institutions, and we've provided them with some tools to enage in this discussion. We've also been reviewing our own contracts that use reference rates to make sure we're walking the talk.

Anecdotally, the largest financial firms seem to be more aware of the challenges than smaller ones. Last September, the UK Prudential Regulation Authority and FCA sent a "dear CEO" letter to the heads of large banks and insurance companies to seek assurance that their senior managers and boards understood the risks of LIBOR transition and were taking appropriate action ahead of end-2021.[22] As the larger firms prepare for the transition, they are beginning to work on the operational challenges the transition will present. You all know that those kinds of system changes are never simple or straightforward. The potential death of LIBOR is causing everyone in the market a lot of grief, and everyone goes through the five stages of grief at their own pace. But the fact that firms are starting to grapple with implementation means that they've got past denial and bargaining and settled down to acceptance.

Smaller firms may be lower down on the preparation curve, although presumably their total risks are also smaller. In December, the Federal Financial Institutions Examination Council presented a one-hour webinar on LIBOR transition that drew about 1,300 participants from supervised firms. Of those who responded to a polling question during the webinar, about one-fifth said it was the first time they were hearing about the topic.

To continue forward, several issues must be resolved. For example, what events should trigger the shift from LIBOR to SOFR or another alternative rate? A definitive end to LIBOR is an obvious trigger. But, short of that, what events should prompt the switch? What if LIBOR was nominally available, but the UK FCA used its supervisory power to declare that LIBOR is unrepresentative of the underlying market? Last month, an FCA official highlighted the possibility that this is exactly how the end of LIBOR might come about, and urged market participants to seriously consider this possibility when crafting their fallback triggers.[23] In their various consultations on fallback language, the ARRC has proposed that such a declaration by the FCA would trigger the switch to an alternative rate. A clear majority of respondents supported that proposal. I think every market participant should ask how the fallback triggers in their contracts would respond.

In addition, the precise mechanism of changing from LIBOR to, say, SOFR will vary. The solution is not a simple substitution. There are inherent differences between SOFR and LIBOR that will need to be adjusted for in the transition. For one thing, most contracts that reference LIBOR key off of three-month or six-month LIBOR. Mortgages often use one-year LIBOR. But SOFR is an overnight rate—there's no such thing as three-month or six-month SOFR.

One solution to this difference is to use the daily SOFR for each day during the term, either averaged or compounded each day until the end of the period. ISDA has indicated that derivatives will fall back to this kind of average, and the SOFR floating rate notes issued recently use a similar approach. To facilitate this method, the New York Fed is preparing to produce a backward-looking compounded average alongside the daily SOFR.

Some market participants may need to use a forward-looking "term SOFR" created by constructing a yield curve off of trading in forward-looking SOFR derivatives, particularly for legacy contracts that already reference a term LIBOR rate. Creating a new rate like that is part of the ARRC's transition plan, although it's more concept than reality at this point. But under all of the cash product consultations put out to date, the first preferred fallback is to that kind of term rate, if such a rate were to be created that was up to IOSCO standards and endorsed by the ARRC.

Another difference between SOFR and LIBOR is that SOFR is a "near risk-free rate" because the underlying repo transactions are secured by Treasuries. LIBOR, on the other hand, was based on unsecured transactions and was intended to include the price of bank funding risk. Although most of the current uses of LIBOR have no actual need to reflect bank funding risk, that difference does still affect the level of the index, and so will need to be adjusted for in contracts that start out referencing LIBOR and then switch to SOFR.

There are various technical ways to adjust for both the term difference and the credit difference between SOFR and LIBOR. The goal is to create a value-neutral adjustment mechanism that doesn't create winners and losers as LIBOR contracts reset. Ideally, the adjustments would also be easily understood, transparent, and based on objective factors, not on discretion. That's a very tall order. This is another area where the ongoing consultations are very important.

Conclusion

Change is hard. It's hard to say goodbye to LIBOR when it's been around for so long and is embedded in so many operations and processes that have been in place for decades. For the last several years, change has clearly been coming to the use of LIBOR, but there was a fog of uncertainty about what that change was going to look like, and so the reaction of many firms seemed to be to do nothing except wait and see what happens. Now the time has come—I would argue it came a while ago, but in any case it's here now—the time has come for every firm with LIBOR exposure to actively grapple with the risks that are coming your way whether you like it or not. The way forward for the vast majority of LIBOR-based instruments is rapidly becoming clear. It's easy and tempting to justify inaction by criticizing the available solutions as imperfect or as just too hard to do. But inaction at this point in the LIBOR transition is short-sighted and futile and only extends the uncertainty. We need decisive action by everyone in the market to avoid damage to individual firms and the financial system.

---

1 Raymond Check and Thomas Noone assisted in preparing these remarks. Mr. Held would like to thank his other colleagues at the Federal Reserve who provided comments and corrections.

2 2019 Outlook: Trends in the Capital Markets

3 See for example the FSOC's Annual Reports for 2013 and 2018.

4 See Introductory Remarks by Federal Reserve Board of Governors Vice Chairman for Supervision Randal K. Quarles at the Alternative Reference Rates Committee Roundtable, July 19, 2018

5 Second Report of the Alternative Reference Rates Committee, March 2018

6 Reforming Major Interest Rate Benchmarks, 22 July 2014

7 Principles for Financial Benchmarks Final Report, July 2013

8 Information on the ARRC, including its announcements and publications, can be found at www.newyorkfed.org/arrc.

9 The ARRC Selects a Broad Repo Rate as its Preferred Alternative Reference Rate

10 Information about SOFR can be found at apps.newyorkfed.org/markets/autorates/sofr.

11 In addition to the London Interbank Offered Rates, the other major interbank offered rates (IBORs) are the Euro Interbank Offered Rate (EURIBOR) and the Tokyo Interbank Offered Rate (TIBOR).

12 See Reforming major interest rate benchmarks, FSB Progress Report, 14 November 2018

13 The future of LIBOR, speech by Andrew Bailey, Chief Executive of the FCA, 27 July 2017

14 Interest rate benchmark reform: transition to a world without LIBOR, speech by Andrew Bailey, Chief Executive of the FCA, 12 July 2018

[15] ARRC Guiding Principles for More Robust LIBOR Fallback Contract Language in Cash Products

[16] ARRC Consultation Regarding More Robust LIBOR Fallback Contract Language for New Issuances of LIBOR Floating Rate Notes, September 24, 2018

[17] ARRC Consultation Regarding More Robust Fallback Contract Language for New Originations of LIBOR Syndicated Business Loans, September 24, 2018

[18] ARRC Consultation Regarding More Robust LIBOR Fallback Contract Language for New Originations of LIBOR Bilateral Business Loans, December 7, 2018

[19] ARRC Consultation, New Issuances of LIBOR Securitizations, December 7, 2018

[20] See ISDA LIBOR Fallbacks, presentation by ISDA at the ARRC's July 2018 roundtable

[21] Source: Bloomberg data services, press releases and FRBNY staff calculations

[22] See Dear CEO LIBOR Letter

[23] LIBOR transition and contractual fallbacks, speech by Edward Schooling Latter, Director of Markets and Wholesale Policy at the FCA, 28 January 2019