# William C Dudley: The transition to a robust reference rate regime

Remarks by Mr William C Dudley, President and Chief Executive Officer of the Federal Reserve Bank of New York, at the Bank of England's Markets Forum 2018, London, 24 May 2018.

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Thank you, Mark, and thanks to the Bank of England for the opportunity to talk about the important issue of reference rates. I will focus my remarks today on reference rate reform in the United States—where we have been, where we are, and where we are headed. In short, I will argue that while much has already been accomplished, we still have a lot more to do—and it must happen within a compressed time frame. This is an important point that Andrew Bailey usefully underscored for us last year. Because of the great uncertainty over LIBOR's future and the risks to financial stability that would likely accompany a disorderly transition to alternative reference rates, we need aggressive action to move to a more durable and resilient benchmark regime. As always, what I have to say reflects my own views and not those of the Federal Open Market Committee (FOMC) or the Federal Reserve System.[1]

## LIBOR Scandal Demonstrated the Imperative for Reform

Although the backdrop to current reference rate reform efforts is well known here, some historical context is useful when considering the issues facing us today. That history highlights why alternatives to LIBOR are needed. It also illustrates the importance of continuing to focus on bank culture and proper incentives in order to support financial stability over the longer term.

At its core, the problem we face today is that the financial system has built a tremendously large edifice on a structurally impaired foundation. While many in the industry cannot recall a time when LIBOR did not exist, in fact, it was only developed in the 1980s. Since then, the use of LIBOR as a reference rate has exploded—with the size of financial contracts referencing U.S.-dollar LIBOR today estimated at close to $200 trillion.[2] The vast majority of these exposures are derivative obligations, such as interest rate swaps. But, that tally also includes trillions of dollars of cash products, such as residential and commercial mortgages, corporate bonds and loans, and securitized products. And, with new contracts referencing LIBOR still being written, this balance continues to grow significantly.

Broadly speaking, reference rates are vital to efficient market functioning. They facilitate trading in standardized contracts, which lowers transaction costs and increases market liquidity. Robust reference rates can also reduce information asymmetries and the risk of misconduct by providing transparent, independent pricing.

But, in the case of LIBOR, the foundation had serious flaws. Most notably, LIBOR was (and is) based on submissions from individual banks—which, in turn, were based on hypothetical borrowing rates or expert judgments, and not actual transactions. Moreover, deficiencies existed in regulatory oversight and governance of the rate-setting mechanism. These vulnerabilities enabled the manipulation of the rate for the financial benefit of individuals and institutions. Amid profound breakdowns in controls and compliance, individual traders conspired with rate submitters at their own institutions or traders at other firms to manipulate the setting of the rate to improve their trading results. During the global financial crisis, panel banks also reportedly submitted lower borrowing rates than they could actually obtain in the marketplace. They did so to disguise their financial fragility at a time when uncertainty over bank liquidity and solvency was high.[3]

The resulting scandal was particularly disturbing because of its scale and flagrancy, including collusion by employees across firms. It led to billions of dollars in fines, jail terms for some individuals, and severe reputational damage to the financial industry as a whole. The global financial crisis exposed excessive risk-taking and a long series of lapses in judgment, and the LIBOR scandal further undermined trust in the ethical standards of the banking industry.

The scandal provides many cautionary lessons, including the ways in which poor technical design can be exploited, the limitations of self-regulation, the problems that arise when loyalty is to one's trading co-conspirators rather than to one's institution, and the need for robust controls. It also underscores the power of incentives to drive individuals and firms to do things that are imprudent and/or unethical.[4] And, the governance and control framework that the banks and the LIBOR administrator had in place proved woefully insufficient to prevent misconduct that stemmed from poor incentives. In this context, one could say it was a situation ripe for exploitation.

The openness and brazenness of misconduct as captured in the recorded transcripts also point to serious deficiencies in bank culture. My New York Fed colleagues and I have commented frequently on the need for sound culture and incentives as a complement to effective regulation and supervision. While there has been some progress on this issue in recent years, the LIBOR and other rate-rigging scandals—not to mention more recent breakdowns at individual banks—point to the need for further strengthening of bank culture.[5] I look forward to the discussion with Minouche and Andrew on improving culture in the fixed income, currency, and commodity markets in the following panel.

One of the key lessons from the financial crisis was that critical pieces of financial system infrastructure must be both strong and resilient, and the LIBOR scandal underscored this need.[6] The essential problem with LIBOR is the inherent fragility of its "inverted pyramid," where the pricing of hundreds of trillions of dollars of financial instruments rests on the expert judgment of relatively few individuals, informed by a very small base of unsecured interbank transactions. Moreover, that base has contracted further in recent years, due to many factors, including regulatory reform and the quantitative easing programs initiated by central banks in many of the major advanced economies. Relative to the vast sums of U.S.-dollar LIBOR contracts I mentioned earlier, the median daily volume of unsecured three-month U.S.-dollar wholesale borrowing is minuscule, at around $1 billion, and many days see less than $500 million in volume.[7] This lack of market liquidity means that these rates cannot be sufficiently transaction-based to be truly representative, and rates that are not transaction-based are more at risk to be manipulated.

So, despite efforts to improve LIBOR in recent years—and there undoubtedly have been important changes that have strengthened its administration and governance—the lack of underlying market liquidity for nearly all currencies and maturities remains a problem, and there is no obvious solution.[8] The setting of LIBOR still depends heavily on expert judgment. Even for U.S.-dollar LIBOR, actual transactions are the basis for only about one-third of the rate submissions for tenors of one and three months. This is noteworthy because these are the maturities that are referenced by the bulk of financial contracts.[9]

In light of the history of LIBOR—and in the context of more than $320 billion in overall misconduct fines since the crisis—banks are naturally reluctant to assume the legal risks associated with submitting quotes based on very shallow markets.[10] Indeed, that is why some banks have left individual LIBOR panels in recent years.[11] Andrew Bailey drove home this point in his July 2017 speech. He explained that the Financial Conduct Authority had to press hard to persuade banks to remain on the panels and voluntarily submit LIBOR quotes through the end of 2021.[12] LIBOR's potential cessation after 2021 poses a clear risk to financial stability, and prudent risk management means that all of us must prepare for a world without LIBOR.

### The Official Sector Response

In recent years, international and domestic authorities alike have actively worked with the private sector to address LIBOR's shortcomings and to find alternative rates. One notable development has been the publication of an international set of principles for financial benchmarks, developed by the International Organization of Securities Commissions (IOSCO) in 2013.[13] These principles—which include 19 specific standards across governance, benchmark quality, methodology, and accountability—have emerged as the international standard. IOSCO has rightly focused on tying benchmarks more closely to observable, arms-length transactions. This represents an important step toward eliminating excessive reliance on expert judgment.

The Financial Stability Board (FSB) has been a galvanizing force at the international level. The FSB and its members have published proposals, plans, and timelines for reference rate reform and have promoted the strengthening of the major interest rate benchmarks. The FSB has been carrying out work on the development and introduction of alternative benchmarks, developing a plan to accomplish a transition to new benchmarks, encouraging work by the private sector on contract robustness, and reporting regularly on the progress made.[14]

The Federal Reserve has played a lead role in the development of these recommendations as applied to U.S.-dollar LIBOR, working closely with the other major financial regulatory agencies in the United States. This effort has also involved coordinating with the official sector sponsors of similar efforts around the world.[15] In late 2014, in response to FSB and Financial Stability Oversight Council recommendations, the Federal Reserve convened the Alternative Reference Rates Committee (ARRC)—a group of market participants established to identify more robust alternative U.S.-dollar reference rates that are risk-free or nearly risk-free, fit the needs of the derivatives market, and are compliant with IOSCO principles.[16] This effort paralleled similar ones in other jurisdictions to find reference rates that are well-suited to local conditions and market needs—including the UK's Working Group on Sterling Risk-Free Reference Rates. The ARRC was also tasked with developing a transition plan to facilitate the adoption of these rates in a voluntary and orderly manner, and with considering best practices in contract design to prepare for the possibility that LIBOR ceases to be published.

### Publication of Alternative Reference Rates by the Federal Reserve

The ARRC has made important progress in achieving its mandate. Notably, in June 2017, it selected the Secured Overnight Financing Rate, or SOFR, as its preferred alternative to U.S.-dollar LIBOR. SOFR is a broad measure of the cost of borrowing cash overnight using U.S. Treasury securities as collateral, and is thus relevant to a wide range of market participants. The rate is entirely transaction-based, and the underlying market is robust, with current daily volume of more than $700 billion. (By comparison, unsecured three-month U.S.-dollar wholesale borrowing totals roughly $1 billion per day, as I mentioned earlier.) SOFR moves closely with LIBOR and other money market rates over time, and because it covers multiple segments of the repo market, it provides scope for future market evolution.[17] Besides being more resistant to manipulation, this nearly risk-free rate should also prove much more resilient during periods of financial stress, because the U.S. Treasury repo market is likely to remain deep and active during such episodes.

The New York Fed administers and produces SOFR in cooperation with the Office of Financial Research. We began publishing this rate on April 3 of this year, along with two other repo rates: the Tri-Party General Collateral Rate and the Broad General Collateral Rate.[18] This work complements steps by the Federal Reserve to promote greater transparency in rates in unsecured markets through enhancements to the calculation of the effective federal funds rate (EFFR) and the launching of an entirely new rate, the overnight bank funding rate (OBFR).[19]

I have long been a proponent of the idea that central banks are well suited to take on this responsibility. Reference rates have strong public good properties, and the private sector faces notable coordination challenges in this area. Central banks have a long history in producing such measures—recognizing that traditionally this has been for purposes related to monetary policy—

and are trusted independent parties. In my view, central banks also ultimately "own" the financial stability risks that are present when key reference rates are flawed. Better to recognize this responsibility and move proactively to mitigate such risks than to step aside and hope that someone else will take up the mantle of reform.

The Federal Reserve has designed these benchmarks to be compliant with IOSCO principles, with regular review by oversight bodies and comprehensive ethics and conflict-of-interest policies for staff.[20] Best practice also dictates that administrators periodically review the rates they produce to assess whether changes in the underlying markets require changes in how those rates are administered. We have dedicated significant resources to these efforts, and are committed to the continued production of rates so that market participants can have confidence about their long-term viability.

For these reasons, the Federal Reserve concurs with the ARRC that SOFR represents a compelling alternative to U.S.-dollar LIBOR—particularly for most derivatives transactions, where a near risk-free rate is more appropriate than a rate that incorporates a bank credit risk premium.

Nevertheless, market adoption of SOFR faces its own challenges, such as the development of sufficient liquidity in derivatives that reference SOFR, and the establishment of a term reference rate, which I will discuss in a moment. These elements will have to be built over time. The ARRC's Paced Transition Plan lays out a timeline for the milestones that must reached over the coming quarters and years for a successful transition.[21] I am confident that the ARRC will succeed, but it will take considerable attention and effort.

Progress is already evident. The Chicago Mercantile Exchange began offering SOFR futures contracts earlier this month, and trading activity has gotten off to a good start. Development of SOFR derivatives, in turn, will support the creation of a term reference rate. Although the ARRC's transition plan anticipates that this will be completed by the end of 2021, it would be better for this to occur more expeditiously. The good news is that is broadly appreciated. In this vein, the Committee's second report discussed some of the term rate alternatives, and development of proposals for a term reference rate was recently added to its mandate. In this regard, I would also encourage market participants, academics, and other interested parties to contribute to the effort to develop a term reference rate.

Another key area of focus—further motivated by Andrew's warning—is the development of fallback contract language in the event that LIBOR ceases to be published. The absence of such language creates the potential for large-scale disorder in global financial markets should LIBOR go away. Put simply, this is an unacceptable risk. The International Swap Dealers Association (ISDA) has been working on this issue for the derivatives market and is expected to issue a consultative document soon that should prove instrumental in making further progress. The ARRC has also been coordinating a similar effort across cash products of all types. The goal is to achieve consensus on a consistent approach across markets whenever feasible.

## Looking Ahead

As I have noted previously, LIBOR continues to have significant shortcomings despite strengthened governance in recent years, and uncertainty about its future will only grow over time. This uncertainty reflects the limited liquidity underlying LIBOR and the corresponding legal risks I discussed earlier. But, I am also skeptical about whether LIBOR can ever be adequately transaction-based. As Andrew highlighted, there is no guarantee that LIBOR will continue to exist beyond December 2021. In my view, LIBOR is likely to go away—and it should, because it is not supported by a sufficiently robust regime. The LIBOR countdown clock should provide an impetus for action, but it should also make market participants and regulators increasingly nervous as we approach the deadline—especially if longer-term solutions are not in train or in place. Time is of the essence, and we must manage it well. The ARRC and others have laid out valuable transition plans, and we need to ensure that they are executed expeditiously and well.

Of course, I do not mean to minimize the costs involved. This is a monumental and complicated effort—one that the industry has never undertaken—and it will entail overcoming many obstacles. It requires collective action by a wide variety of market participants, some of whom may not be fully convinced of the need for change. And, there may be others with a direct interest in the preservation of LIBOR—such as its administrator—who may not support moving away from the status quo. There also undoubtedly will be those who seek a free ride on the efforts of others. And, of course, the effort will encounter inertia and wishful thinking. All of this is to be expected in such a large undertaking with significant upfront costs. Nevertheless, delay is not a viable option.

This task is borne out of necessity. Financial crises typically result when we fail to identify vulnerabilities, and then unexpected triggers turn those vulnerabilities into points of weakness that can lead to catastrophic failure. The discontinuation of LIBOR, however, is different. We can see it coming, and we know the impact of a disorderly transition would be huge. Therefore, a half-hearted effort or a failure to act would be inexcusable, especially after all we have learned from the experience of the financial crisis. Moving this core piece of the global financial system to a firm and durable foundation is essential and worth the cost.

This task is admittedly hard, but I am optimistic given our past successes. We have demonstrated that effective collective action can provide solutions to longstanding structural vulnerabilities in the financial system. A key lesson from the crisis is that structural vulnerabilities must be addressed continually. If they are ignored, larger problems eventually will result. For example, through collective action over the past decade, we have successfully addressed structural weaknesses in the tri-party repo market, the over-the-counter derivatives market, and money market mutual funds.

Each of these challenges required a tailored solution that relied on different tools—including a diverse mix of market, regulatory and supervisory measures—to get the job done. Everything isn't a nail, and the best tool is not always a hammer. You have to identify the problem that needs fixing and select the right tool for the job. This is likely to require both official sector engagement and private sector initiative.

In the case of LIBOR, the official sector has taken a multi-pronged approach: strengthening the LIBOR regime, developing reference rate principles, using its convening authority to marshal private sector participation, supplying robust alternative reference rates, and using the bully pulpit to educate and spur action. International coordination has featured strongly in these efforts, and should continue to do so. This approach has achieved a great deal to date, but, in light of the risks and potential implications, will it be sufficient?

The transition away from LIBOR represents a significant risk event for firms of all sizes, and they should actively manage this transition through their existing frameworks for identification, management, and mitigation of risk. Supervisors should continue to support this objective by ensuring that all firms are aware of the transition and that LIBOR-related issues are being addressed in a way that is commensurate with a firm's exposures and risks. More broadly, the official sector will continue to push market participants to take all necessary steps to mitigate the risks to financial stability from a disorderly transition.

In closing, the LIBOR scandal certainly was one low point among many during the financial crisis and its aftermath. It highlighted the need for reform of a critical area of the global financial system. We have made considerable progress since then, but reform still has a long way to go. The remaining work, by necessity, will involve purposeful collective action and engagement across the financial industry to address market-wide issues. It also will require firm-specific action to manage individual risks. The challenge is that the window for action is narrowing.

Therefore, we must redouble our efforts to ensure a successful transition from LIBOR to a more sound and durable regime.

Thank you for your kind attention. I would be happy to take a few questions.

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[1] James Bergin, Raymond Check, Caren Cox, Gerard Dages, Joshua Frost, Matthew Lieber, William Riordan, and Kevin Stiroh assisted in preparing these remarks.

[2] 2 See Alternative Reference Rates Committee, Second Report, March 2018

[3] 3 See remarks by William C. Dudley, Restoring Confidence in Reference Rates, October 2, 2014

[4] 4 See remarks by William C. Dudley, The Importance of Incentives in Ensuring a Resilient and Robust Financial System, March 26, 2018

[5] 5 See, for example:

[6] William C. Dudley, Enhancing Financial Stability by Improving Culture in the Financial Services Industry, October 20, 2014

[7] William C. Dudley, Opening Remarks at Reforming Culture and Behavior in the Financial Services Industry: Expanding the Dialogue, October 20, 2016

[8] William C. Dudley, Remarks at the Culture Imperative – An Interbank Symposium, January 11, 2017

[9] William C. Dudley, Reforming Culture for the Long Term, March 21, 2017

[10] Michael Held, Reforming Culture and Conduct in the Financial Services Industry: How Can Lawyers Help?, March 8, 2017

[11] Kevin J. Stiroh, Misconduct Risk, Culture and Supervision, December 7, 2017

[12] 6 See remarks by William C. Dudley, Lessons from the Financial Crisis, November 6, 2017

[13] 7 See Alternative Reference Rates Committee, Second Report, March 2018

[14] 8 The U.K. Wheatley Review led to changes in many areas of LIBOR, including statutory regulation of LIBOR, selection of a new administrator, new governance and oversight regimes, and a code of conduct for submitters. See The Wheatley Review of LIBOR: Final Report

[15] 9 See ICE LIBOR Quarterly Volume Report – Q1 2018

[16] 10 See Boston Consulting Group, Staying the Course in Banking, March 2, 2017

[17] 11 See FCA statement on LIBOR panels, November 24, 2017

[18] 12 See Andrew Bailey, The Future of LIBOR, July 27, 2017

[19] 13 See The Board of the International Organization of Securities Commissions, Principles for Financial Benchmarks: Final Report, July 2013

[20] 14 See the Financial Stability Board's publications on financial benchmarks

[21] 15 See Remarks by Jerome H. Powell at the ARRC, November 2, 2017