

## Federal Reserve Governor Speaks on Reforming Libor

Thank you for giving me this opportunity to speak this evening. I would like to discuss ongoing efforts to reform the current structure and uses of the London Interbank Offered Rate, commonly referred to as LIBOR. These reforms affect not only the financial industry, but also a large number of U.S. households and corporations.

LIBOR is a reference rate. When two parties enter a financial contract in which interest payments are to be exchanged, they frequently choose to base those payments on LIBOR. LIBOR is currently referenced in roughly \$300 trillion worth of contracts globally, which means that it is part of the global financial system's critical infrastructure. [1] But LIBOR's credibility was badly undermined by the scandal that erupted when some of the banks that help produce the rate attempted to manipulate it by contributing inaccurate estimates of their borrowing costs. These illegal actions helped damage the public's trust not just in LIBOR, but also in financial markets and institutions more broadly.

In response, a number of global efforts to reform reference rates have been undertaken. LIBOR is produced and administered in London. As a result of the steps taken by the government of the United Kingdom, LIBOR is now regulated and supervised by the U.K. Financial Conduct Authority (FCA). The International Organization of Securities Commissions (IOSCO) developed a broad set of 19 principles that reference rates and other financial benchmarks are now expected to meet. [2] Building on this work, in July, the Financial Stability Board (FSB) released a report outlining a number of further reform proposals. [3] Continuing the work of my former Fed colleague Jeremy Stein, I recently took over as co-chair--along with Martin Wheatley, chief executive officer of the FCA--of the international group that drafted the report and is now charged with implementing its recommendations. [4] Today I will discuss the reasons why further reforms are necessary and how those reforms should proceed, and I will focus on U.S. dollar LIBOR. [5] As is made clear in the FSB report, while the goals and principles of the official sector participants are uniform, specific plans for reference rate reform will vary by currency, depending on differences in markets and institutions.

I will share my conclusion at the outset. While there have been significant reforms, much remains to be done. [6] First, U.S. dollar LIBOR needs to be updated to reflect current practices in unsecured funding markets and to be better anchored in actual transactions. Second, and equally important, regulators need to work with market participants to encourage them to develop and adopt alternative reference rates that better reflect the current structure of U.S. financial markets, in which borrowing and derivatives transactions are much more likely to be secured with collateral. Going forward, these alternative rates could replace LIBOR as the reference rate for new interest rate derivatives and some other contracts denominated in U.S. dollars. These dual transitions will need to be managed very carefully to avoid disrupting the financing markets on which borrowers and lenders depend. But I believe that they are crucial to strengthening the stability of our financial system and to helping restore the public's faith in its integrity. This problem is not just Wall Street's concern; every household with a LIBOR-

linked mortgage and every corporation with a LIBOR-linked loan has an interest in more robust U.S. dollar reference rates.

### The Basics

I will take a few moments to explain the basic mechanics of LIBOR for those who have not spent time on an interest rate swap desk. For almost three decades, LIBOR was run by the British Bankers' Association. Just a few months ago, a private corporation called ICE Benchmark Administration (IBA) took over the daily production and administration of the rate subject to the regulation and supervision of the FCA. Today, 18 banks participate in the panel that contributes to the production of U.S. dollar LIBOR. Each morning at 11 a.m. London time, those banks estimate the rate at which they could borrow at several different maturities ranging from overnight up to a year, and they send those estimates to IBA. It is often the case that banks have recent transactions at some but not all of these maturities. Where there are no transactions, they submit estimates of their borrowing costs based on their judgment. In addition to U.S. dollar LIBOR, the rate is produced in four other currencies--the euro, the yen, the British pound, and the Swiss franc--although not all banks contribute rates in all currencies. The administrator provides specific instructions to the panel banks regarding their submissions; currently, these instructions direct banks to reflect the perceived rate at which they could borrow from another bank. [7] The administrator collects these submissions and, after dropping the highest and lowest quartiles at each maturity, publishes an average of the remaining submissions as the U.S. dollar LIBOR rate for that day.

### Pervasive and Problematic

When the British Bankers' Association standardized LIBOR in the 1980s for use in interest rate products, I doubt that anyone could have imagined how pervasive it would eventually become. As I mentioned, there are an estimated \$300 trillion in LIBOR contracts, roughly half which reference dollar LIBOR. In the United States, dollar LIBOR is the reference rate used in most interest rate swaps and futures contracts, in most floating-rate mortgages, in many commercial loans, and in structured products such as mortgage- and asset-backed securities. The list could go on and on, but the key point is that LIBOR touches a large number of U.S. households and businesses.

Although LIBOR is currently used for all of these purposes, it is actually not ideally suited for some of them. LIBOR is designed to measure the costs of bank borrowing for a panel of large banks. The rate can be decomposed into a component that reflects the general level of risk-free rates and a component that reflects a risk premium related to the credit risk of the borrowing bank. During the global financial crisis, the credit risk component of LIBOR fluctuated dramatically, which meant that LIBOR behaved quite differently from rates with no credit risk embedded in them, such as risk-free rates.

LIBOR is a less-than-ideal rate for most derivatives contracts and secured borrowing because movements in the credit risk component do not reflect well the underlying risks of those contracts. However, LIBOR's pervasiveness has become self-reinforcing. Firms use LIBOR in contracts, even when it is less than ideal, because they know they can hedge the resulting risk using highly liquid, LIBOR-based interest rate swaps or other

derivatives contracts. And those derivatives markets are so liquid because most market participants use LIBOR as the reference rate in their financial contracts. Because of the progression of this dynamic over time, and not because of some careful design, LIBOR has spread well beyond its intended uses and become an important pillar of the global financial system--perhaps too important.

In recent years, two separate developments have called into question the wisdom of that arrangement. I have already mentioned the first one--the emergence of a pervasive pattern of attempted manipulation of LIBOR dating back many years. This misconduct was designed either to increase the potential profit of the submitting firms or to convey a misleading picture of the relative health of such firms. Since 2012, seven financial institutions have settled related charges with the U.S. Commodity Futures Trading Commission and the U.S. Department of Justice, and the cumulative penalties and fines paid in the United States now stand at more than \$3 billion. [8] Global penalties paid related to benchmark misconduct exceed \$6 billion as investigations into reference rate manipulation continue. Although these penalties and fines are themselves substantial, to my mind the longer-term damage to the public's trust represents the greater cost of this misconduct.

A second problem is that unsecured interbank borrowing has been in a secular decline that predates the global financial crisis. Changes in bank behavior following the crisis exacerbated the decline and further weakened the foundation of LIBOR. The result is a scarcity, or outright absence in longer tenors, of actual transactions that banks can use to estimate their daily submission to LIBOR. Ongoing regulatory reforms and the shift away from unsecured funding raise the possibility that unsecured interbank borrowing transactions may become even more infrequent in the future. While it is also possible that activity in these markets could rebound, the threat that this form of borrowing may decline further, particularly in periods of stress, seems likely to remain.

So let me pose a question: Is it wise to rely on a critical benchmark that is built on a market in decline? Clearly not. The risks to market functioning are simply too great. For example, market activity could decline to the point where publication of a rate becomes untenable. And many of the panel banks have expressed concerns about the ongoing legal risks of remaining on the panel. If the publication of LIBOR were to become untenable or if we were to simply "end LIBOR," as some have urged, untangling the \$150 trillion in outstanding U.S. dollar LIBOR contracts would entail a protracted, expensive, and uncertain process of negotiating amendments to an enormous number of complex documents--a horrible mess and a feast for the legal profession, to be sure. It does not help matters that the hundreds of trillions of dollars' worth of derivatives contracts referencing LIBOR do not, in general, have robust backups in the event that publication of a rate ceases.

The FSB report identifies ways to improve U.S. dollar LIBOR, and to create alternatives to it, while minimizing transition costs, particularly for end users who bear no blame for the misconduct. The proposed reforms come down to two simple ideas. First, U.S. dollar LIBOR needs to be redefined to include a broader range of transaction types. Doing so

will make it more robust and will allow it to reflect actual bank funding costs, which is what the rate was intended to do in the first place. Second, we need to promote robust alternatives to U.S. dollar LIBOR that better reflect the secured nature of many of today's financial market transactions.

#### Updating U.S. Dollar LIBOR

Let me first address the efforts the Federal Reserve is considering, in cooperation with the LIBOR administrator and U.K. authorities, to update the mechanics of U.S. dollar LIBOR. Our aim is to make LIBOR more robust and more representative of current bank funding costs. In this regard, we have considered two important attributes of LIBOR--its definition and the data used to produce it.

While the current definition of LIBOR is limited to unsecured borrowing between banks, LIBOR is actually intended to represent the overall cost of banks' unsecured borrowing. At the time LIBOR was created, a substantial amount of that unsecured borrowing was in the interbank market, but that is no longer the case. Broadening the definition to include the unsecured borrowing from nonbanks would make the rate more representative of current funding practices. Changing the definition of LIBOR, as has been done in the past, would acknowledge the fact that a reference rate must adapt to continue to represent what it is meant to measure. [9]

Updating the definition of U.S. dollar LIBOR could also allow other sources of transactions data to be incorporated into it. Potentially, we could even move away from the current panel-based method of calculating U.S. dollar LIBOR to a rate that is fully transactions based. In April, the Federal Reserve began collecting data from banks on a variety of unsecured transactions. These data, along with other available data, will help us understand whether there is enough borrowing activity to support a fully transactions-based rate. [10] It will take some time to assess these data and, in particular, to analyze the depth of the markets under different conditions and during different times of the year. But preliminary analysis, which is reinforced by research done by the Market Participants Group (MPG) that was assembled by the FSB, suggests that there may be enough borrowing activity to create a transactions-based U.S. dollar LIBOR rate.

Basing U.S. dollar LIBOR more on transactions could modestly increase the volatility of the rate. However, I see nothing wrong with a reference rate that more accurately reflects the volatility of the market it represents. We are working closely with the LIBOR administrator, IBA, and with its regulator, FCA, to explore these issues. In this regard, cooperation with IBA is crucial if LIBOR is to be strengthened--U.S. dollar LIBOR is produced in the United Kingdom and is not regulated here in the United States. The IOSCO review found that IBA has made progress in implementing most of the 19 IOSCO principles; the changes I have discussed are designed to continue this progress, and I believe that IBA is well motivated to continue its efforts. [11]

#### Alternatives Needed

Improving U.S. dollar LIBOR alone cannot eliminate all of the weaknesses in the current system. In the FSB's opinion and that of the MPG, a large portion of the derivatives that

currently reference U.S. dollar LIBOR would be better served by referencing a risk-free (or nearly risk-free) rate based on a robust and liquid underlying market. These transactions are more appropriately linked to a narrower measure of interest rates that does not include a bank credit risk component. Encouraging alternatives that better reflect today's funding markets would also allow for greater choice, increase the resilience of the system, and would potentially make hedging of some risks less costly. In addition, the incentive to manipulate LIBOR would be substantially reduced if a smaller share of the multi-hundred-trillion-dollar derivatives market was referencing it.

Some possible alternatives include rates based on the U.S. Treasury market or rates based on the secured funding markets that have replaced much of the borrowing banks used to do in the unsecured interbank market. The Federal Reserve is not seeking to dictate the particular rate that financial markets adopt. Instead, we will encourage key market participants to further the work done by the FSB's MPG by narrowing down the list of alternatives and developing them into robust reference rates that meet agreed-upon international standards and best practices. [12] There are enough suggestions on the MPG's list to inspire confidence that we should be able to find common ground. Any alternative would, of course, need to be in accord with the IOSCO principles mentioned earlier, and some potential alternatives would take time to fully develop. But the establishment of alternative reference rates for certain products is in our shared interests and would substantially strengthen the financial system.

We are strongly committed that at least one such rate be developed and actively used as soon as practicable. And we look forward to working with financial institutions and other market participants to achieve this end.

In the near term, the Federal Reserve, along with other government agencies, intends to meet with a wide range of market participants, including end users, to hear their views as to how change can be effected and to begin the work of developing alternatives to LIBOR. Later this year, we will convene a group of the largest global dealers to discuss these issues, following a model that was successfully used to promote derivatives reform. Searching for potential alternative rates and encouraging their use will be a key point of that discussion. Of course, end users will be affected by these changes as well, and we will also consult closely with key participants outside of the dealer community to make sure that reform meets their needs and is not disruptive to them. In particular, end users who want to continue to use LIBOR will certainly be able to do so, and we will work toward the goal of ensuring that any changes to LIBOR will not require borrowers or lenders to amend their existing contracts. And the markets that reference dollar LIBOR are so enormous that there will surely be more than enough liquidity to support both a new risk free rate as well as LIBOR itself.

One of the lessons that I take from our study of LIBOR is that these existing legacy contracts are quite important. As I mentioned earlier, many financial contracts, including derivatives contracts, do not have robust backups in the event that the reference rates they use cease to exist. Some derivatives, such as interest rate swaps, can be quite long lasting, and, over a long enough period of time, there is always a risk that any given reference

rate will cease being published. It is important that financial contracts address the need for a backup plan if a reference rate does cease to function. This issue is something that we intend to bring up with market participants and end users as we meet with them.

#### Conclusion

My hope is that governments, market participants, and end users can work together to build a stronger foundation for the reference interest rates that are so critical to our financial system. Implementation of these measures is clearly in the interest of U.S. financial stability. I also hope and expect that individual financial institutions will understand that it is also in their private interests. Reference rates are one of the foundations of the financial system, and it is in the interest of everyone, from the residential mortgage holder to the financial institutions that heavily use these rates, that those foundations have integrity and be well constructed and resistant to manipulation. As I said at the beginning, the problems with LIBOR have undermined the public's trust in the financial system. In light of the need to regain that trust, I am certain that our reform efforts will meet with the active cooperation of financial institutions in carrying forward these reforms.