

# The Challenges Of Replacing Interbank Offered Rates

By **Timothy McKenna** (June 27, 2019, 2:33 PM EDT)

Despite being part of the financial landscape since 1986, interbank offered rates, or IBORs, are being phased out, and are to be replaced with rates that more accurately capture a risk-free rate. The core issue when transitioning away from an IBOR to an alternative rate is the fact that the replacement benchmarks, whatever they turn out to be, will be inherently different than the previous rates.

Most alternatives are market-based rates, and have shown themselves to be more volatile than IBORs. Of course, this is the entire point of the exercise: The new benchmarks are different because they more accurately reflect the short-term supply and demand for risk-free borrowing. Nevertheless, the transition will likely cause disputes.



Timothy McKenna

## Background

Concerns have been raised about the suitability and reliability of the IBOR rates, and regulators such as the Financial Stability Board and the Federal Reserve have recommended they be replaced with rates that more accurately capture a risk-free rate.

The 2008 financial crisis and later scandals involving IBOR rates highlighted regulators' concerns that the rates don't accurately reflect a risk-free rate, and that they are overly susceptible to manipulation. The susceptibility originates from the use of participating banks' rate submissions that are not required to be based on actual transactions. While long considered a suitable proxy for a risk-free rate, IBOR rates are (in theory) for loans to and from major banks, and these rates have diverged from rates such as bond yields for major sovereign borrowers.

On July 27, 2017, Andrew Bailey, CEO of the U.K.'s Financial Conduct Authority, announced that the London interbank offered rate, or Libor, would officially be replaced at the end of 2021.[1] Events preceding this announcement foreshadowed the coming change. In July of 2014, the Financial Stability Board recommended the development of risk-free rates, just two years after calls for IBOR reform. Committees have been formed in multiple IBOR markets to choose and, since that speech, implement alternative reference rates.[2]

While some rates have been identified, the process is far from complete. Despite a push for a coordinated timeline across relevant currencies,[3] it appears cooperation between bodies governing the transition has been limited.[4]

## Extent of IBOR Usage

As of April 2019, there were approximately \$29.5 trillion[5] in U.S.-dollar-denominated outstanding floating rate bonds, mortgages, and consumer and business loans. Another \$258 trillion[6] in notional value of U.S.-dollar-denominated derivatives contracts were outstanding as well, as of June 2018.

The sheer size of these numbers is indicative of the enormity of the asset pool tied to the IBORs. While there are alternative floating rates, such as the U.S. Treasury bill rates and the SIFMA Municipal Swap Index, it is likely that most of these instruments reference an IBOR as the floating

rate.

While difficult to estimate precisely, a meaningful portion of these instruments will mature after 2021,<sup>[7]</sup> so a significant pool of assets will be affected by the transition away from the IBORs.

## Replacement Rates

The current set of suggested replacement benchmarks, seen in the table below, are generally overnight rates based on actual transactions.

### Major IBORs and Proposed Benchmark Replacements

IBOR	Proposed Benchmark <sup>1</sup>	Currency	Data/Transaction Sources <sup>2</sup>
USD LIBOR	Secured Overnight Financing Rate (SOFR)	US Dollar	Tri-party repo, FICC bilateral treasury repo
GBP LIBOR	Reformed Sterling Overnight Index Average (SONIA)	British Pound	Unsecured overnight sterling transactions negotiated bilaterally and brokered in London by WMBA
EURIBOR	Euro Short-Term Rate (€STR) <sup>3</sup>	Euro	Unsecured overnight fixed rate deposit transactions over €1 million <sup>3</sup>
CHF LIBOR	Swiss Average Rate Overnight (SARON)	Swiss Franc	CHF repo transactions in the interbank market
JPY LIBOR	Tokyo Overnight Average Rate (TONAR)	Japanese Yen	Data provided by money market brokers

#### Notes and Sources

<sup>1</sup> Proposed benchmarks from June 2018 IBOR Global Benchmark Transition Report from the International Swaps and Derivatives Association (ISDA)

<sup>2</sup> Data/Transaction Sources from Oliver Wyman "Changing the World's Most Important Number" 2018 report

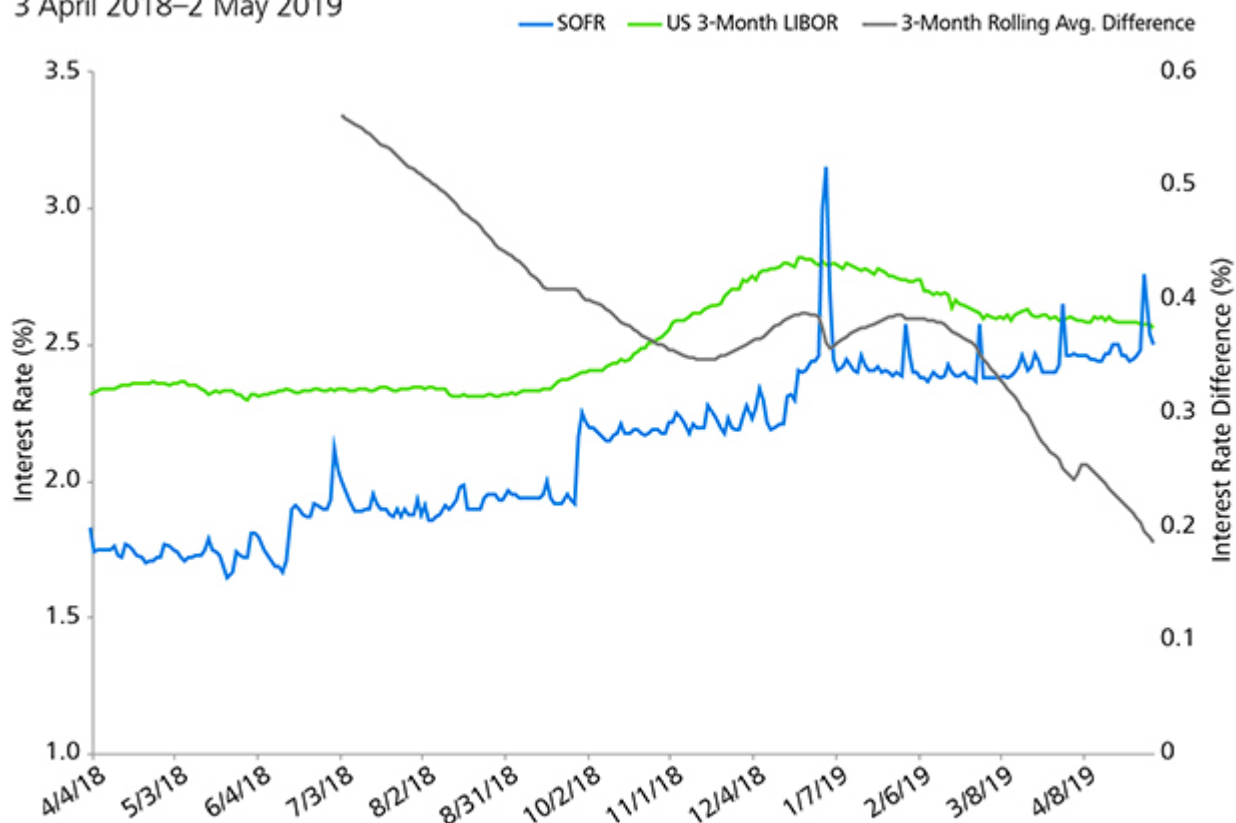
<sup>3</sup> European Central Bank "€STR Methodology and Policies" report

The use of actual transactions is a response to issues that arose while using bank submissions. The use of overnight transactions, often for repurchase agreements, is an attempt to get closer to a risk-free rate.

The graph below depicts the SOFR rate, the likely replacement for USD Libor, and the 3-month USD Libor rate. SOFR data was first published on April 3, 2018.

## SOFR Rate vs. US 3-Month LIBOR Rate

3 April 2018–2 May 2019



**Notes and Source:** Data are from FactSet Research Systems, Inc. as of 7 May 2019.

Basing SOFR on real-world transactions raises issues related to the functioning of the particular market being used. Here the SOFR rate is noticeably more volatile on a day-to-day basis than USD Libor.

### Challenges

#### *The Rates Are Different*

The Libor-SOFR graph above illustrates a core challenge — simply that the Libor and SOFR rates behave quite differently.

For example, one could imagine making an adjustment to instruments that referenced an IBOR rate so that the value based on the replacement risk-free rate has the same general level as the IBOR rate. In the graph above, the SOFR rate averages 0.38 percentage points below the USD 3-month Libor rate, so a simple adjustment — adding 0.38 to the SOFR rate — would appear to solve the issue.

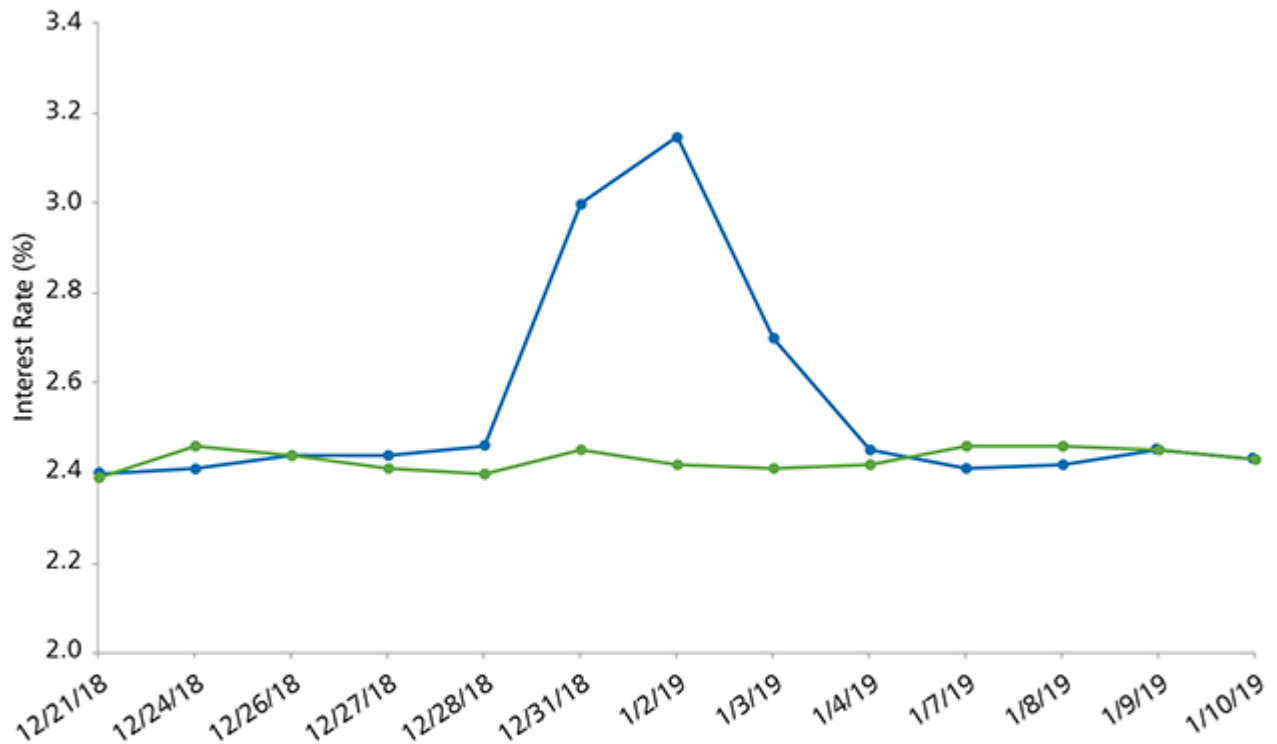
But even this adjustment is not straightforward. The period over which one computes the adjustment is critical, and in the data above, the difference ranges between -0.36 and 0.68 percentage points.

The consultation set out by the International Swaps and Derivatives Association, or ISDA, has proposed four different methods to accommodate the move from term rates to overnight rates, and three different methods to calculate a spread adjustment.[8] The fact that ISDA is putting forward these possible solutions further highlights the issue: There are multiple plausible methods, and they (presumably) give different answers!

## SOFR Rate vs. 3-Month Treasury Bill Rate

21 December 2018–10 January 2019

SOFR 3-Month Treasury Bill



**Notes and Sources:** Data are from the Federal Reserve and the US Department of the Treasury.

Reported volumes used to compute the SOFR rate were not unusually low on these days. In fact, 31 December was also the first day in which SOFR transaction volume exceeded one trillion dollars. The following day, when the rate peaked at 3.15%, the volume also peaked at \$1.09 trillion.

The SOFR rate is also generally more volatile than the Libor rate. While this is evident throughout the period displayed in the figure above, an extreme example comes at the end of 2018.

Between Dec. 28, 2018, and Jan. 4, 2019, the SOFR rate started at 2.46%, rose to 3.15% and then dropped to 2.45%, almost its exact pre-jump level.[9] Over this same period, the 3-month Treasury bill rate ranged from 2.40% to 2.45%.[10]

Putting aside the question of whether SOFR or USD Libor is a more accurate measure of the risk-free interest rate, the volatilities and short-term levels of the two series are certainly different, and the existing financial instruments were written with the smoother behavior of USD Libor in mind.

### **Hedge Accounting**

Hedge accounting allows firms to designate an instrument as a hedge of another instrument or expected transition. This allows the income statement to be less volatile. If one or both of the instruments reference IBOR rates, then the transition away from IBOR may call into question whether the accounting treatment is still allowed.[11]

### **Instrument-Specific Issues**

#### **Mortgage-Backed Securities**

Mortgage-backed securities, or MBS, prospectuses, both public and privately issued, tend to be vague in their language regarding the availability of IBOR. For example, a Freddie Mac prospectus states, "If Libor in its present form ceases to exist, we will select a new index, or its equivalent, as provided in the note relating to the applicable ARMs." [12]

A further problem with MBSs is that individual mortgages may also reference IBOR rates. When the IBORs are replaced, these individual mortgages may not end up with the same replacement rate as the MBS; thus, the floating rate of an MBS may not be representative of the assets within it.

### **Corporate Bonds**

Corporate bond prospectuses tend to include more detailed language regarding floating rate interest payments. According to a recent Johnson & Johnson prospectus, if the relevant IBOR rate is not published, then “the rate ... shall be the arithmetic mean of the rates for deposits of the LIBOR Currency for the Index Maturity quoted by four major reference banks.”[13]

If the rate can’t be determined using those methods, the prospectus goes on to say it will use the prior day’s value. These fallbacks appear to pertain more to potential temporary issues with IBOR publishing than the possibility that the rate stops being reported altogether.

### **Interest Rate Swap Options (Swaptions)**

In an interest rate swaption, the buyer has the right to enter into a fixed-rate for floating-rate swap. The value of the swaption is directly linked to the volatility of the underlying interest rate.

If the replacement rates have higher volatility, like the SOFR rate, then a switch of the reference rate will not be straightforward. The volatility of overnight reference rates will increase the value of any swaption previously linked to an IBOR, and a simple adjustment to the strike price or notional of these contracts would not suffice to account for the change.

### **Conclusion**

The financial industry faces a number of challenges in the shift away from IBORs. The sheer size of the existing asset pool tied to IBORs ensures that the scope and impact of the shift will be large. In addition, each of the proposed replacement rates will bring along its own benefits and pitfalls.

SOFR, the likely substitute for USD Libor, is markedly more volatile than Libor. Furthermore, instruments reference IBORs in different ways, so rate substitution will often not be straightforward.

Economists and financial professionals will face these questions at a steady pace, as national and international regulators recommend IBOR phase-outs in favor of more accurately captured risk-free rates.

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*The author would like to thank John Madsen for his contributions to this article, and Dr. Airat Chanyshiev for his comments and suggestions.*

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[1] Financial Conduct Authority, The Future of LIBOR, July 27, 2017.

[2] Ashurst LLP, LIBOR Transition Timeline.

[3] IBOR Global Benchmark Transition Report June 2018, p. 27.

[4] Ibid, p. 28.

[5] The \$29.5 trillion estimate comes from Bloomberg LP data as of approximately 11:00 am on April 11, 2019. Corporate and government bonds are estimated to have approximately \$6.5 trillion, consumer and business loans approximately \$16.4 trillion and mortgage loans \$6.6 trillion in outstanding notional value with floating rate coupons.

[6] The \$258 trillion estimate comes from the Bank of International Settlements derivatives statistics database. The data tables report numbers as of Q2 2018. Over-the-counter derivatives make up approximately \$193 trillion of the \$258 trillion, and exchange-traded derivatives make up the remaining \$65 trillion. See OTC Interest Rate Derivative statistics and Exchange-Traded Futures and Options statistics.

[7] Federal Reserve Bank of New York, The Second Report of the Alternative Reference Rates Committee, March 2018, p. 2.

[8] International Swaps and Derivatives Association, ISDA Publishes Consultation on Benchmark Fallbacks, July 12, 2018, p. 1.

[9] Reported volumes used to compute the SOFR rate were not unusually low on these days. In fact, December 31 was also the first day in which SOFR transaction volume exceeded \$1 trillion. The following day, when the rate peaked at 3.15%, the volume also peaked at \$1.09 trillion.

[10] US Department of Treasury, Daily Treasury Bill Rates Data.

[11] Ernst and Young IBOR Transition Accounting Challenges and Considerations Report, June 1, 2018, p. 4.

[12] Freddie Mac Mortgage Participation Certificate, July 1, 2018.

[13] Johnson & Johnson Floating Rate Bond Prospectus, Feb. 26, 2014.