“If an active market does not exist, how can even the best benchmark measure it?”

— Andrew Bailey, CEO of the Financial Conduct Authority, July 2017

In July 2017, the United Kingdom’s Financial Conduct Authority announced it will no longer compel banks to submit rates for the London interbank offered rate (LIBOR) beyond 2021, signaling that the survival of LIBOR in its current form “could not and would not be guaranteed”. As a result of this announcement, financial regulators worldwide have been strongly encouraging financial institutions exposed to the LIBOR reference rate to prepare for its replacement before the end of 2021. Across jurisdictions, regulators are promoting national currency-specific alternative reference rates. For United States dollar-denominated loans and securities, the recommended new benchmark is the Secured Overnight Financing Rate.
1. **What is LIBOR?**

   London interbank offered rate (LIBOR) is the most widely used benchmark for short-term interest rates. LIBOR is currently available for five currencies (US dollar, pound sterling, euro, Swiss franc, and yen) and for seven tenors in respect of each currency (overnight or spot next, 1 week, 1 month, 2 months, 3 months, 6 months, and 12 months). Although its origins date back to 1969, it was not formalized until the British Bankers’ Association began overseeing the collection and governance of the data nearly 2 decades later. LIBOR has played a critical role in global markets; it has been widely used as a reference rate for financial contracts and as a benchmark to gauge funding costs and investment returns for a broad range of financial products, including adjustable-rate mortgages, credit cards, floating-rate bank loans, and interest rate or cross-currency swaps. It is estimated that globally, more than $300 trillion financial contracts are currently benchmarked on LIBOR.¹

2. **What are the issues with LIBOR?**

   The methodology for calculating LIBOR has remained largely unchanged since it was introduced. Each day, a group of large banks, known as “panel banks”, report their funding rates to the Intercontinental Exchange Benchmark Administration, which took over administering LIBOR in 2014. Those numbers are averaged, adjusted, and released at about 11:55 a.m. London time each business day.

   There are two main concerns with this process: first, there has been a significant decline in the sample size for calculating LIBOR since the 2008 financial crisis. In its aftermath, fewer panel banks have been reporting, and those that do, report fewer quotes based on market transactions. Instead, LIBOR has increasingly relied on what the Intercontinental Exchange Benchmark Administration calls “market and transaction data-based expert judgment.” Therefore, concerns were raised about how well LIBOR reflects market realities since it is not based on actual market transactions. Second, LIBOR’s reliance on inputs from panel banks opened it to manipulation, and there have been a range of irregularities uncovered by regulators, which have led to large fines for those involved. As a result, global regulatory initiatives have sought to develop alternative reference rates (ARRs). In the United States (US) dollar market, for example, the US Federal Reserve commissioned the Alternative Reference Rates Committee (ARRC) in 2014 to recommend a benchmark interest rate to replace US dollar LIBOR.

3. **What is the timeline for phasing out LIBOR?**

   In July 2017, the Financial Conduct Authority (FCA), which regulates the administrator of LIBOR, announced that it will no longer compel panel banks to participate in the LIBOR setting process after 2021. Since then, the FCA has indicated that (i) all global market participants should assume that there will be no LIBOR publication after 2021; (ii) even if LIBOR were to continue beyond 2021, it would have fundamentally changed; and (iii) markets for LIBOR-related contracts are likely to be illiquid, and the ability to hedge outstanding LIBOR obligations is likely to be impaired. Therefore, global market participants with LIBOR-linked financial products must prepare to shift to ARRs by 31 December 2021.

---

¹ For example, A. Bailey in his most recent speech related to Libor referenced that “These are rates which directly impact the cash flows and values of an estimated $400 trillion of financial products globally”. A. Bailey. 2020. Libor: Entering the Endgame. Speech delivered by the Governor of the Bank of England, London and New York. 13 July
4. What Is ADB's exposure to LIBOR?

ADB is exposed to LIBOR across various financial modalities. The most significant is the LIBOR-based loan product, which is ADB’s main sovereign lending product. ADB offers its borrowers LIBOR-based loans with a floating rate of interest based on the 6-month LIBOR, plus an effective contractual spread and, where applicable, a maturity premium fixed over the life of the loan. The cost base rate is 6-month LIBOR for US dollar and yen, and 6-month Euribor for euro-denominated loans. The cost pass-through principle, in which the funding cost for borrowings raised to fund the loan portfolio is passed on to borrowers, is followed. The funding cost and lending rates are computed by calculating the average funding cost margin below (rebate) or above (surcharge) the relevant benchmarks in each currency for all borrowings funded the loan pool of the same currency during the previous semester. Rebates and surcharges are announced twice a year, for the periods 1 January to 30 June and 1 July to 31 December and are applied to individual loans on the interest payment date following the announcement date. Loans may be made on a floating-rate basis in other foreign currencies in which ADB can efficiently intermediate, and such loans may reference another relevant floating rate benchmark, as applicable. ADB is also exposed to LIBOR through swaps and derivatives that ADB enters into to hedge interest and currency risks of its borrowing transactions and borrowers’ preferences for certain interest rate structures and currencies. LIBOR-based loans are typically funded by ADB with borrowings raised at a fixed rate of interest that are swapped to a floating rate of interest based on LIBOR to match the reference rate of the LIBOR-based loans.

ADB also issues across various currencies to gain cost efficiencies and typically swaps the receipt of these currencies into US dollar. In addition, local currency loans are also frequently funded through cross-currency swaps from US dollar LIBOR into the local currency benchmark. As of 31 December 2019, ADB is exposed to LIBOR for US dollar and yen, and Euribor for euro-denominated loans through sovereign loan operations, nonsovereign loan operations, swaps and guarantees across two currencies, the yen and US dollar, with the vast majority to the US dollar.

5. What benchmarks are available after LIBOR phases out?

For US dollar-denominated loans and securities, the ARRC recommended the Secured Overnight Financing Rate (SOFR) as the new benchmark. It is calculated based on transactions in the US Treasury repurchase market, where banks and investors borrow or lend US Treasury securities overnight. The US Federal Reserve began publishing SOFR in 2018.

The Secured Overnight Financing Rate (SOFR) is a broad measure of the cost of borrowing cash overnight collateralized by United States Treasury securities. SOFR is published by the Federal Reserve Bank of New York and is a good representation of general funding conditions in the overnight Treasury repo market. As such, it reflects an economic cost of lending and borrowing relevant to the wide array of market participants active in the market. In terms of the transactions underpinning SOFR, it has the widest coverage of any Treasury repo rate available. The transaction volumes underlying SOFR are far larger than the transactions in any other United States money market and dwarf the volumes underlying London interbank offered rate.

The reference rate used for Asian Development Bank’s (ADB) loans in euro, the Euro Interbank Offered Rate (Euribor), has been reformed. In July 2019, the reformed Euribor was found to be compliant with the European Union Benchmark Regulations and continues to be used, but the euro LIBOR may cease to be published after 2021. The Euro Short-Term Rate is the new benchmark recommended to replace the Euribor and the euro LIBOR should either reference rate cease. In addition to Europe, Australia and Japan
are also pursuing a multiple-rate approach to benchmarks, where reformed reference rates will continue for the foreseeable future alongside the development of recommended ARRs. Notably, across currencies and jurisdictions, regulators promote their own currency-denominated ARRs based on short-term lending, and these vary in composition. Table 1 provides an overview of selected major currencies for which ARRs have been identified and recommended by public and private sector working groups in those jurisdictions.

<table>
<thead>
<tr>
<th>Country</th>
<th>LIBOR–IBOR</th>
<th>New Risk-Free Rate</th>
<th>Public or Private Sector Working Groups</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>US Dollar LIBOR</td>
<td>SOFR</td>
<td>Alternative Reference Rates Committee</td>
<td>Secured rate that covers multiple overnight repurchase market segments</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>GBP LIBOR</td>
<td>SONIA</td>
<td>Sterling Working Group on Risk-Free Rates</td>
<td>Unsecured rate that covers overnight wholesale deposit transactions</td>
</tr>
<tr>
<td>Japan</td>
<td>JPY LIBOR, TIBOR, and Euroyen TIBOR</td>
<td>TONAR</td>
<td>Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks</td>
<td>Unsecured rate that captures overnight call rate market</td>
</tr>
</tbody>
</table>
| Europe          | EUR LIBOR and Euribor | ESTR | Euro RFR Working Group and European Money Markets Institute | Unsecured rate that captures the overnight wholesale deposit transactions |}

| Australia | BBSW | AONIA | Australian Financial Markets Association | Unsecured rate that captures an overnight term |

AONIA = Australian dollar Overnight Index Average, BBSW = Bank Bill Swap Rate, ESTR = euro short-term rate, EUR = euro, Euribor = Euro Interbank Offered Rate, GBP = pound sterling, IBOR = Interbank offered rate, JPY = Japanese yen, LIBOR = London interbank offered rate, RFR = risk-free rate, SOFR = Secured Overnight Financing Rate, SONIA = Sterling Overnight Index Average, TIBOR = Tokyo Interbank Offered Rate, TONAR = Tokyo Overnight Average Rate, US = United States.

Note: A secured rate is collateralized by funding transactions which serve as security. For example, SOFR is collateralized by funding transactions secured by US Treasury securities. An unsecured rate is not collateralized. In Australia, BBSW is expected to continue to exist alongside AONIA.

Source: Morgan Stanley Research.

6. What are the key differences between LIBOR and the Secured Overnight Financing Rate?

Although SOFR and LIBOR both reflect short-term borrowing costs, there are key differences. First, SOFR relies entirely on transaction data, whereas LIBOR is based partially on market-data “expert judgment.” Second, SOFR is so far only available as a daily rate (i.e., an overnight rate), whereas LIBOR is quoted with varying rates on forward terms of 1 day to 1 year. Finally, LIBOR incorporates a built-in credit-risk component because it represents an uncollateralized cost of borrowing by a bank. In contrast, SOFR represents a risk-free rate because it is based on interbank trades and collateralized by funding transactions secured by US Treasury securities.
7. **How will a suitable ARR for ADB be determined?**

The official sector and public and sector working groups in each of the five currencies for which LIBOR is produced have identified and recommended ARRs and are now actively supporting the transition towards their use. The working groups in each of the five currencies for which LIBOR is produced have identified ARRs to replace LIBOR as follows: SOFR for US dollar, SONIA for pound sterling, €STR for euro, SARON (Swiss Average Rate Overnight) for Swiss franc, and TONAR for yen.

The working groups support of the transition towards the use of ARRs assists the development of markets and is expected to build liquidity in ARRs. For example, the depth of SOFR derivatives markets is growing but is currently still small relative to LIBOR. A major catalyst for derivatives markets growth is expected in October when central clearing parties begin to discount using SOFR. The adoption by clearing houses to move to SOFR price alignment interest and discounting on new and legacy swaps and the adoption by swap counterparties of the International Swaps and Derivative Association IBOR Fallbacks protocol later this year will assist the transition.

Market consensus on the use of ARRs is still emerging in the loan markets. ADB follows market developments to better understand the building of market consensus, particularly around conventions in the use of SOFR in loans.

There is no certainty that a forward-looking term SOFR will emerge. Recent communication from the ARRC notes that: "While it is true that a forward-looking SOFR term rate may be appropriate for a limited set of contracts, the growth in SOFR-linked futures, swaps, and floating-rate debt demonstrates the current viability of using SOFR itself in a wide range of financial contracts. A robust forward-looking term rate requires a deep, active SOFR derivatives market, which requires most financial contracts to reference SOFR itself. It is essential that most financial contracts reference SOFR itself as soon as possible, to develop a forward-looking SOFR term rate, and in turn facilitate a smooth transition. Since March 2020, the New York Fed has been publishing SOFR Averages for several tenors and an index to calculate SOFR rates over custom time periods. These provide a transparent and reliable source that market participants can use to start building new SOFR-linked contracts now. There is currently not sufficient underlying futures activity to support a robust term rate and no assurance that one will be produced ahead of LIBOR becoming unusable." The ARRC recommends that market participants that can use SOFR should not wait for forward-looking rates to transition away from LIBOR.

---

**Table 2: Key Differences**

<table>
<thead>
<tr>
<th>SOFR</th>
<th>LIBOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relies entirely on transaction data from over $700 billion in daily repurchase transactions.</td>
<td>Is based partially on market-data and partially on expert judgment.</td>
</tr>
<tr>
<td>Measures the cost of collateralized borrowing overnight based on interbank trades and secured by US Treasury securities.</td>
<td>Measures the cost of uncollateralized borrowing in the interbank market and incorporates a built-in credit-risk and liquidity component.</td>
</tr>
<tr>
<td>A backward-looking rate, published daily.</td>
<td>A forward-looking rate, published daily, with term rates from 1 day to 1 year.</td>
</tr>
</tbody>
</table>
Once there is more certainty to the transition path in the loans market, ADB will act in a timely manner and prudently review how best to adopt the new dominant market paradigm.

8. What principles will ADB consider when ADB decides on ARRs?

ADB will use the following four principles to decide on ARRs:

(i) **Market-based approach.** ADB will review the latest developments in the market and inform borrowers about them, highlighting any consensus building around certain approaches. In particular, if the majority of market participants adopt a certain transition approach that meets ADB’s other principles described below, ADB will carefully review the approach and consider the adoption of such a market-based paradigm. An example of such an approach would be the expected fallback language to be issued by the International Swaps and Derivatives Association in July 2020, which will set out revised terms to be included in new derivatives and an industry-wide basis to contractually amend and include the same terms in existing derivatives. Since most market participants are expected to follow the International Swaps and Derivatives Association-led interbank offered rate reforms, ADB is highly likely to follow such a market-dominant paradigm for the transition of its swap contracts.

(ii) **Cost pass-through principle.** ADB’s cost pass-through principle for sovereign loans has been enshrined in its financial policies for decades. Thus, it will also serve as the guiding criterion for determining ARRs. In particular, the conversion of LIBOR-based borrowing costs into ARRs will be translated in an equitable manner so that ADB does not systematically gain or lose as a result of the conversion.

(iii) **Uniformity.** All borrowers will be offered exactly the same approach and transition arrangements, i.e., no borrower should systematically gain or lose from the transition at the expense or to the benefit of other borrowers.

(iv) **Transparency.** To ensure maximum transparency, ADB will fully disclose calculations and analyses related to ARRs and applicable spreads to borrowers and the Board.

9. What is ADB’s proposed approach for transitioning sovereign loans?

The current OCR Loan Regulations are not sufficient to protect ADB and borrowers from potential losses in a situation when LIBOR ceases. If LIBOR ceases and ADB cannot agree on an alternative for calculating the floating rate of interest with each borrower, the OCR Loan Regulations apply a three-step determination process to try and calculate the floating rate of interest. Ultimately, the most recent calculated LIBOR rate will be applied for the current interest period. Repeating this process for each interest rate fixing will complicate hedging and may lead to asset–liability mismatches.

Furthermore, the current OCR Loan Regulations are not sufficient to protect ADB and borrowers from potential losses in a situation when LIBOR is declared no longer representative. There is a risk that LIBOR is no longer representative of the underlying market it seeks to measure but is still published. Where a reference rate is still published, the OCR Loan Regulations apply the reference rate, but it may not be representative of the cost of funding. This will undermine the cost pass-through principle.

The OCR Loan Regulations require an amendment to address an uncertain LIBOR transition path and to avoid potential losses for ADB and borrowers. ADB proposes to amend the OCR Loan Regulations to broaden the circumstances in which the reference rate can be replaced and enable ADB to determine
ARRs in a timely manner. For existing loans, such a change in agreement will require the borrowers’ consent.

10. **What timeline does ADB consider for the LIBOR transition?**

ADB will engage borrowers through an outreach to inform them about ADB’s transition approach and to provide market information on LIBOR transition to borrowers. Consultations with borrowers will assist in the finalization of the Recommendation paper which will be presented to the Board of Directors in October 2020. If the Recommendation paper is approved, the revised OCR Loan Regulations will be made applicable to new loans. For existing loans, ADB will seek such a change in agreement with borrowers’ consent. Following the Recommendation paper discussion in October 2020, management aims to seek the Board’s guidance on the financial product that will replace the LIBOR-based loan product with new ARRs and the financial policy issues associated with the transition process in the first half of 2021.

11. **What rules apply to nonsovereign loans?**

The template for nonsovereign loan agreements of the Asian Development Bank is based on industry-recommended form documentation that provides a three-step determination process when the LIBOR ceases to be published: (i) using an interpolated screen rate, (ii) polling major reference banks, and (iii) applying ADB’s own cost of funds as the final fallback. The documents also provide for negotiating a substitute basis for determining the reference rate with the borrower.

12. **How will ADB cooperate with other multilateral development banks in this area?**

ADB and other multilateral development banks (MDBs) have agreed to collaborate and share knowledge and best practices on the reference rate transition. MDBs are committed to working together and sharing information throughout the transition period. While there may be differences in approaches because of the unique characteristics of each organization’s loan portfolio, the structure of loan products, and the terms and conditions for reference rate replacements, MDBs will coordinate as much as possible to make the transition process easier and smoother for their borrowers. In particular, ADB is coordinating closely with the World Bank, which is also the designated MDB representative in the ARRC.

13. **How was Euribor reformed and why was LIBOR not reformed in the same way?**

The Euribor is the reference rate that ADB’s uses for its loans in euro. Euribor underwent a reform process over the past few years to reduce the risk of market manipulation and to align with European Union Benchmark Regulation requirements. The governance framework was strengthened, and a hybrid calculation methodology was developed based on a quantitative assessment and panel bank’s judgement. Two public consultations related to the hybrid calculation methodology took place between March 2018 and February 2019, which concluded that the methodology was adequate in terms of market representativeness. In July 2019, the reformed Euribor was found to be compliant with the European Union Benchmark Regulations and will remain to be used.

While LIBOR has undergone several reforms, including moving from a quote-based methodology to a transaction-based methodology, a lack of adequate interbank market activity means it remains at risk of no longer being representative of the market it seeks to measure.
14. **What will be the benchmark that will replace JPY LIBOR?**

The publication of LIBOR in any currency, including JPY LIBOR cannot be guaranteed beyond the end of 2021. The Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks has recommended TONAR replace JPY LIBOR. Japan is pursuing a multi-rate approach to interest rate benchmarks, where reformed TIBOR will continue for the foreseeable future alongside the development of recommended ARRs.

15. **Where can information on SOFR be found?**

ARRC publishes materials to explain SOFR and the transition. Below are ARRC best practices and a SOFR starter kit.

**ARRC best practices**

**SOFR Starter Kit**

**History and Background**
(i) Background on USD LIBOR
(ii) History of the ARRC and the selection of SOFR

**Key Facts About SOFR**
(i) How SOFR works
(ii) SOFR by the numbers
(iii) Common misconceptions of SOFR

**SOFR Next Steps**
(i) SOFR best practices
(ii) Recommended fallback language
(iii) The user’s guide to SOFR
(iv) Helpful tools from the ARRC