Proposed Reference Rate Transition for the Asian Development Bank's Financial Loan Product

Information Paper

In July 2017, the Financial Conduct Authority of the United Kingdom, which regulates the administrator of London interbank offered rate, announced its intention to phase out London interbank offered rate (LIBOR) by the end of 2021. On 5 March 2021, the Financial Conduct Authority announced that the publication of LIBOR on a representative basis will cease for all yen-based settings as well as the 1-week and 2-month United States dollar settings immediately after 31 December 2021, and the remaining United States dollar settings immediately after 30 June 2023. As a result of these developments, the Asian Development Bank must review and modify certain terms and conditions as well as the product name of its main financial loan product—the LIBOR-based loan product.

1. What is LIBOR?

London interbank offered rate (LIBOR) is the most widely used benchmark for short-term interest rates, ranging from overnight to 1 year, across different currencies. LIBOR is currently available for five currencies (United States dollar [USD], 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 $200 trillion–$300 trillion in financial contracts are currently benchmarked on LIBOR globally.

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 trimmed of the highest and lowest values, averaged, 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 regulators have uncovered a range of irregularities that have led to large fines for those involved. As a result, global regulatory initiatives have sought to develop alternative reference rates (ARRs). In the USD market, for example, the US Federal Reserve commissioned the Alternative Reference Rates Committee (ARRC) in 2014 to recommend a benchmark interest rate to replace USD LIBOR.[1]

3. What is the timeline for phasing out LIBOR?

In July 2017, the United Kingdom's Financial Conduct Authority, which regulates the administrator of LIBOR, announced that it will no longer compel panel banks to participate in the LIBOR setting process after 2021. In November 2020, the administrator of LIBOR, the Intercontinental Exchange, modified this announcement to consult the market on the final phase out date for certain LIBOR benchmarks, including the 3- and 6-month LIBOR benchmarks, which it proposed to be shifted to 30 June 2023 to give the market more time to accommodate the transition of certain complex derivative products. Subsequently, a number of commercial banks have confirmed that they will continue to submit quotes for LIBOR until 30 June 2023. Despite this postponement, the ARRC continues to recommend that all new loans and derivatives cease to use USD LIBOR by 31 December 2021 at the latest. On 5 March 2021, the United Kingdom's Financial

[1] The ARRC is a group of private-market participants convened by the Federal Reserve Board and the Federal Reserve Bank of New York to help ensure a successful transition from USD LIBOR to a more robust reference rate. The ARRC comprises a diverse set of private sector entities that have an important presence in markets affected by USD LIBOR and a wide array of official sector entities, including banking and finance sector regulators.

Conduct Authority announced that the publication of LIBOR on a representative basis will cease for LIBOR settings as follows:

(i) For overnight, 1-, 3-, 6-, and 12-month USD LIBOR settings, immediately after 30 June 2023; and
(ii) For all euro, sterling, Swiss franc, and yen LIBOR settings, immediately after 31 December 2021.[2]

4. What is ADB's exposure to LIBOR?

The Asian Development Bank (ADB) is exposed to LIBOR across various financial modalities. The most significant is the LIBOR-based loan (LBL) product, which is ADB's main sovereign lending product. ADB offers its borrowers LBLs 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 USD and yen, and 6-month Euro Interbank Offered Rate (EURIBOR) for euro-denominated loans. ADB is also exposed to LIBOR through swaps and derivatives that ADB enters into to hedge interest and currency risks of its borrowing transactions[3] and borrowers' preferences for certain interest rate structures and currencies. ADB also issues across various currencies to gain cost efficiencies, and typically swaps the receipt of these currencies into USD. In addition, local currency loans are frequently funded through cross-currency swaps from USD LIBOR in the local currency benchmark.

5. What benchmarks are available after LIBOR ceases?

For USD-denominated loans and securities, the ARRC identified and recommended Secured Overnight Financing Rate (SOFR) as the new benchmark[4] based on transactions in the US Treasury repurchase market, where banks and investors borrow or lend US Treasury securities overnight.[5] SOFR is a broad measure of the cost of borrowing cash overnight, collateralized by Treasury securities. SOFR is based on transactions in the US Treasury repurchase market and is based on data from observable transactions. SOFR is published daily and incorporates almost no credit risk, as it is based on collateralized transactions. SOFR was chosen as the fallback rate for US dollar LIBOR used by the International Swaps and Derivatives Association in their IBOR Fallbacks Supplement and related IBOR Fallbacks Protocol, which will apply in the derivatives market upon the phase out of LIBOR.

For the yen markets, the *Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks,* which was established by the Bank of Japan to determine a successor to yen LIBOR, identified the *Tokyo Overnight Average Rate* (TONA) as the near risk-free benchmark rate for yen to replace yen LIBOR. The Bank of Japan is the administrator of TONA and has published the rate since 1996. TONA reflects the cost

[2] Financial Conduct Authority. 2021. [FCA Announcement on Future Cessation and Loss of Representativeness of the LIBOR Benchmarks](). 5 March.
[3] LBLs 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 LIBOR.
[4] The ARRC believes that SOFR is the most appropriate reference rate for widespread and long-term adoption as market participants seek to transition from LIBOR because, among other reasons, it: (i) is compliant with the International Organization of Securities Commission's Principles for Financial Benchmarks; (ii) is fully transaction-based; (iii) encompasses a robust underlying repo market with more than $700 billion in daily transactions; (iv) is an overnight nearly risk-free reference rate that correlates closely with other money market rates; and (v) covers multiple repo market segments allowing for future market evolution. Federal Reserve Bank of New York. 2020. ARRC: Frequently Asked Questions. Version dated 2 June 2020. p. 3.
[5] SOFR is published by the Federal Reserve Bank of New York since 2018 and is a good representation of general funding conditions in the overnight Treasury repo market.

of borrowing yen overnight on an unsecured basis in the interbank and wholesale market. It is an unsecured benchmark because it is based on transactions in the uncollateralized, overnight money market. TONA is fully based on transaction data and is calculated as a volume-weighted average of transactions. Contrary to LIBOR, TONA looks beyond interbank markets and considers bank borrowing from a range of nonbank wholesale counterparties. While a second alternative benchmark exists in the yen markets—Tokyo Interbank Offered Rate—TONA is the more relevant benchmark for ADB since the International Swaps and Derivatives Association chose it as LIBOR fallback reference rate.

The reference rate used for ADB loans in euro—EURIBOR—has been reformed[6] and may still be used, but euro LIBOR ceases to be published after 2021.

Table 2 provides an overview of the five currencies for which LIBOR is determined and the ARRs that have been identified and recommended by public and private sector working groups in the respective jurisdictions.

Table 2: Alternative Reference Rates for Currencies for Which the London Interbank Offered Rate is Determined

Country	LIBOR–IBOR	New Risk-Free Rate	Public or Private Sector Working Groups	Description
United States	US Dollar LIBOR	SOFR	Alternative Reference Rates Committee	Secured rate that covers multiple overnight repurchase market segments
United Kingdom	GBP LIBOR	SONIA	Sterling Working Group on Risk-Free Rates	Unsecured rate that covers overnight wholesale deposit transactions
Japan	Yen LIBOR, TIBOR, and Euroyen TIBOR	TONA	Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks	Unsecured rate that covers overnight call rate market
Europe	EUR LIBOR and EURIBOR	ESTR	Euro RFR Working Group and European Money Markets Institute	Unsecured rate that covers the overnight wholesale deposit transactions
Switzerland	CHF LIBOR	SARON	The National Working Group on Swiss Franc Reference Rates	Secured rate that covers the overnight repurchase market

CHF = Swiss franc, ESTR = euro short-term rate, EUR = euro, EURIBOR = Euro Interbank Offered Rate, GBP = pound sterling, IBOR = Interbank offered rate, LIBOR = London interbank offered rate, RFR = risk-free rate, SARON = Swiss Average Rate Overnight, SOFR = Secured Overnight Financing Rate, SONIA = Sterling Overnight Index Average, TIBOR = Tokyo Interbank Offered Rate, TONA = Tokyo Overnight Average Rate, US = United States.
Note: A secured rate is collateralized by funding transactions that serve as security. For example, SOFR is collateralized by funding transactions secured by US Treasury securities. An unsecured rate is not collateralized.
Source: Financial Stability Board

[6] In July 2019, the reformed EURIBOR was found to be compliant with the European Union Benchmarks Regulation and continues to be used.

6. What are the key differences between LIBOR and SOFR?

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.

Table 3: Key Differences

SOFR	LIBOR
Relies entirely on transaction data from over $700 billion in daily repurchase transactions.	Is based partially on market-data and partially on expert judgment.
Measures the cost of collateralized borrowing overnight based on interbank trades and secured by US Treasury securities.	Measures the cost of uncollateralized borrowing in the interbank market and incorporates a built-in credit-risk and liquidity component.
A backward-looking rate, published daily.	A forward-looking rate, published daily, with term rates from 1 day to 1 year.

7. What is the outlook for term SOFR?

The development of term SOFR is the final step in the ARRC Paced Transition Plan. The ARRC indicated in the 2020 objectives that publication of term SOFR could take place during the first half of 2021, if liquidity in the SOFR derivatives markets was sufficiently developed. In September 2020, the Committee published a request for proposals to select an administrator to publish forward-looking term SOFR. On 23 March 2021, the ARRC announced that it would not be in a position to recommend a robust forward-looking term SOFR by mid-2021, and that it cannot guarantee that it will be able to do so by the end of 2021.[7] The ARRC encourages all market participants to continue to transition from LIBOR using the tools available now, without reliance on a forward-looking term SOFR.[8]

In the 23 March 2021 announcement, the ARRC noted that "while trading activity in SOFR derivatives is growing, at this time, the ARRC believes that it is not yet in a position to recommend a term rate with confidence based on the current level of liquidity in SOFR derivatives markets. In addition, the ARRC is still evaluating the limited set of cases in which it believes a term rate could be used. Robust underlying activity and a limited scope of use over time are important conditions to help ensure that a recommended term rate does not reintroduce the vulnerabilities that first prompted the transition away from LIBOR."

The criteria against which the ARRC will evaluate any term SOFR and consider it "robust" are the International Organization of Securities Commissions Principles for Financial Benchmarks and it is

[7] Federal Reserve Bank of New York. 2021. ARRC Provides Update on Forward-Looking SOFR Term Rate: Market Participants Encouraged to Transition without Reliance on SOFR Term Rate. Press release. 23 March.

[8] Financial markets functioned before LIBOR became broadly adopted, and some loan markets still work without term rates. For example, banks in the US offered loans based on the prime rate (an overnight rate), while in Canada, most floating-rate mortgages are based on overnight rates.

uncertain whether a compliant forward-looking term SOFR will emerge.[9] To be compliant, a forward-looking term rate requires a deep and active SOFR derivatives market from which to derive the term rate, as well as meet the principles of governance, other qualities of the benchmark and methodology in addition to an active underlying market, and accountability.

8. How was EURIBOR reformed and why was LIBOR not reformed in the same way?

The EURIBOR is the reference rate ADB 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 judgment. Two public consultations related to the hybrid calculation methodology took place from March 2018 to 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 continue to be used.

9. What principles did ADB consider when ADB decided on ARRs?

ADB considered the following Board-approved principles when determining ARRs for public sector loans:

(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.[10]

(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. This implies that ADB will not seek any commercial advantage for itself from the transition process.

(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 to borrowers and the Board of Directors.

[9] SOFR, SOFR averages, and the SOFR Index are compliant with the International Organization of Securities Commissions Principles for Financial Benchmarks. Each July, the Federal Reserve Bank of New York issues a statement of compliance for its reference rates. In early July 2020, the Federal Reserve Bank of New York included the 30-, 90- and 180- day SOFR averages and the SOFR Index in its Statement of Compliance with the principles for financial benchmarks. These principles were endorsed by the Financial Stability Board as being standards of best practice for benchmark administration in 2013. The New York Fed's Audit Group independently confirmed that SOFR, SOFR averages, and the SOFR Index are in compliance with the Principles.

[10] ADB 2020. *Preparing for the Reference Rate Transition of ADB's Sovereign Loans*. Manila, para. 16(i) provides that "examples of such an approach are expected to be the fallback language and calculation methodology to be issued by the International Swaps and Derivatives Association," which "most market participants are expected to follow," and "ADB is highly likely to follow such a market-dominant paradigm for the transition of its swap contracts."

10. What is ADB's proposed approach for transitioning sovereign loans?

In October 2020, ADB's Board of Directors approved the R-paper on LIBOR transition. In this paper, ADB's Board approved the amendment of the OCR Loan Regulations to broaden the circumstances in which the reference rate can be replaced and enable ADB to determine ARRs to apply to new and existing sovereign loans with LIBOR exposure.

The key product features that require modification include the following:

(i) ADB must change the name of its loan product from the current LBL product and proposes to rename it to Flexible Loan Product (FLP). This name captures the various flexible options currently offered to sovereign borrowers, including for example, options for rate fixings, loan conversions, and tailored amortization structures.

(ii) Based on the Board-approved principles for the LIBOR transition process, ADB proposes to adopt "SOFR compounded in arrears" and "TONA compounded in arrears" respectively as the new cost-base rates for ADB's USD and yen loan products. The proposed choice for the new cost-base rates for USD and yen is in line with the transition principle of following a "market-based approach," which states that ADB will carefully review market developments to establish a benchmark in line with emerging market consensus.

(iii) The cost-base rate used for ADB's loans in euro—EURIBOR—has been reformed[11] and will continue to be used for ADB's loan product unless and until a reference rate transition is viewed as required. Other approved loan currencies and reference rates will continue to be available under the FLP.

(iv) Since both SOFR and TONA are currently only available as overnight rates, they are not suitable *per se* as benchmarks for ADB's loan product, which is based on 6-month interest period and billing cycles. Therefore, the overnight rates need to be applied over the period to calculate suitable 6-month rates. It is proposed to base ADB's benchmark on daily SOFR and TONA compounded over 3- or 6-month interest periods determined in arrears,[12] as this approach is aligned with the approach used for ADB's swaps and derivatives for its funding transactions. The reference rate for United States dollar- and yen-denominated loans for the FLP will change from 6-month LIBOR to "6-month Secured Overnight Financing Rate compounded in arrears" and "6-month Tokyo Overnight Average Rate compounded in arrears" respectively as the new proposed benchmarks.

ADB sovereign loans are billed on a semi-annual basis. The billing statements are generated 60 calendar days before the interest payment date (referred to as the "cut-off date"). ADB intends to keep the current 6-month billing cycle and cut-off date after the transition to ARRs with the same advance notice of payment to borrowers. Such advance notice is required and requested by borrowers so that they have sufficient time to prepare for the payments.

As no forward-looking term rate is available for the SOFR, the proposed approach to determining the reference rate is based on actual overnight interest rates during the relevant interest rate period. The Federal Reserve Bank of New York publishes a SOFR Index that allows for the calculation of compounded

[11] In July 2019, the reformed EURIBOR was found to be compliant with the European Union Benchmark Regulations and continues to be used.
[12] Compounded in arrears is a method of calculating an interest rate which involves compounding an ARR over the current interest period to produce a backward-looking rate.

average rates over custom time periods.[13] As the interest calculation using the SOFR Index provides easier calculation for borrowers and is the approach that peer multilateral development banks (MDBs) will follow, ADB proposes to calculate "SOFR compounded in arrears" by using the SOFR Index for the interest calculation. Given that the published SOFR Index is already compounded, the computation will automatically yield compounded interest when it is applied to the principal balance. Given that ADB bills sovereign borrowers 2 months in advance of the interest payment date, a proxy rate must bridge this 2-month period for which the actual interest rate is not known at the time of billing. This proxy rate is proposed to be calculated based on the prevailing average interest rate during the 30-day period before the date on which the billing is finalized. The difference between the proxy rate and the actual interest rate calculated at the end of the relevant interest periods will be included in the subsequent billing through an adjustment and the borrower will therefore always pay an amount of interest based on the actual interest rate for the relevant interest period. For the sovereign FLP, ADB determines rebates or surcharges based on the cost pass-through principle and such are calculated based on the difference between ADB's actual funding cost and the relevant reference rate. ADB will continue to determine rebates or surcharges based on the principle of cost pass-through—albeit benchmarked against the new SOFR/TONA reference rates. For Japanese yen, ADB proposes to use the same procedure for sovereign loans as described for the 6-month USD-denominated loan billing.[14]

The proposed approach to calculating SOFR in arrears and TONA in arrears and thereby converting overnight rates to a 6-month benchmark meets the four principles when determining ARRs for sovereign loans because of the following reasons:

(i) **Market-based approach.** SOFR and TONA have been identified by working groups established by regulators as replacements for LIBOR and accepted by the market.
(ii) **Cost pass-through principle.** ADB's cost pass-through principle refers to passing on its cost of funding to borrowers. As ADB's cost of funding will be based on the new benchmark in the derivative markets which is SOFR in arrears, ADB will therefore be able to use the same benchmark for both funding and lending and pass through its cost of funding to sovereign borrowers through rebates and surcharges.
(iii) **Uniformity.** For all newly approved regular loans from ADB's ordinary capital resources as of 1 January 2022, each loan will reflect the terms of the FLP.
(iv) **Transparency.** To ensure maximum transparency, ADB will disclose all relevant calculations to borrowers and the Board of Directors.

11. How is the cost-base rate component of interest of the sovereign FLP calculated?

The use of the SOFR Index and the 30-Day SOFR Average to determine 6-month "SOFR compounded in arrears" for a sample USD-denominated loan is illustrated. The interest calculation focuses on the cost-base rate component and excludes other components[15] for ease of understanding.

- **6-month interest period**: 1 July to 31 December 2020
- **Interest payment date:** 1 January 2021
- **Billing cut-off date**: 1 November 2020

Item 1 of the figure illustrates the first 4 months (1 July–31 October 2020) of the interest period. ADB will calculate the daily interest by multiplying the daily SOFR compounded rate with the actual daily

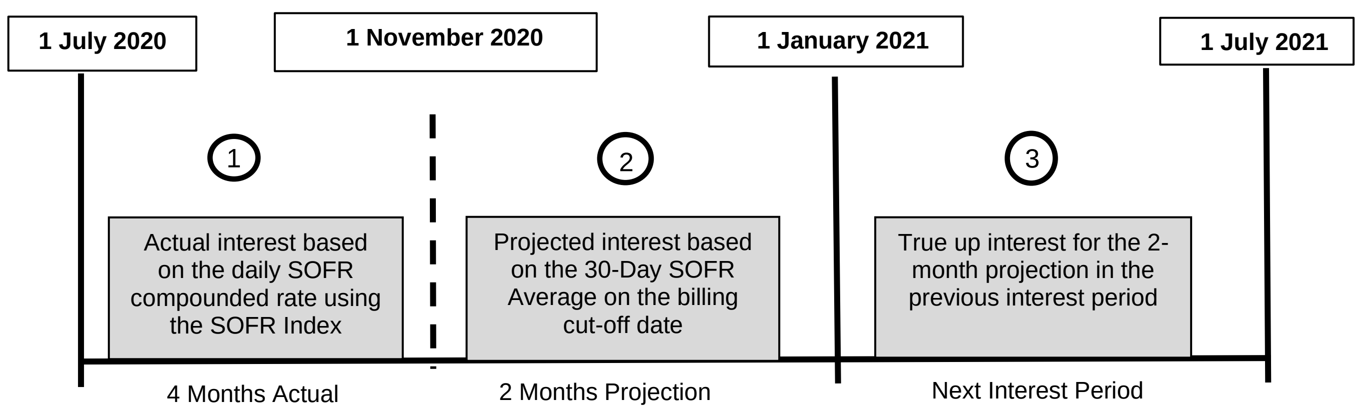
[13] The SOFR Index measures the cumulative impact of compounding SOFR on a unit of investment over time, with the initial value set to 1.00000000 on 2 April 2018, the first value date of SOFR.
[14] For Japanese yen, ADB will use compounded rate method for interest calculation in case there is no index data published.
[15] Other components are the contractual spread, the maturity premium and the rebate or surcharge.

principal balance. If there are no principal movements, the SOFR compounded rate for the 4 months (1 July to 31 October) will be calculated as follows:

$$= \frac{SOFR\ Index_{1\ November\ 2020} - SOFR\ Index_{1\ July\ 2020}}{SOFR\ Index_{1\ July\ 2020}}$$

Item 2 of the figure illustrates the next 2 months (1 November–31 December 2020) of the interest period. ADB will calculate the projected daily interest by multiplying the published 30-Day SOFR Average on the billing cut-off date with the principal balance on the billing cut-off date during this estimated part of the billing period.

Item 3 of the figure illustrates the true-up of interest for 1 November–31 December 2020 in the next interest period. The true-up of interest is the difference between the actual interest calculated using the daily SOFR compounded rate for 1 November 2020–31 December 2020 and the estimated interest, which was based on the published 30-Day SOFR Average in item (ii). Accordingly, an adjustment will be reflected in the subsequent billing statement. After the last billing period, there will be a close-out billing to settle the remaining true-up amounts for the fully repaid loan. Question #13 in Appendix 1 provides a sample calculation.



A numerical example is provided as follows:

Principal outstanding: $100,000,000
6-month interest period: 1 July to 31 December 2020
Interest payment date: 1 January 2021
Billing cut-off date: 1 November 2020

(i) The daily interest calculation using the SOFR Index for 1 July 2020 is:

$$\boldsymbol{Daily\ SOFR\ compounded\ rate} = \frac{SOFR\ Index_{2\ July\ 2020} - SOFR\ Index_{1\ July\ 2020}}{SOFR\ Index_{1\ July\ 2020}}$$

$$= \frac{1.04149838 - 1.04149520}{1.04149520}$$

$$= 0.00000305$$

$$Daily\ interest\ (1\ July\ \ 2020) = \$100{,}000{,}000 \times 0.00000305 = \ \$305$$

(ii) If the principal balance during 1 July–31 October 2020 is constant, the total interest for the 4 months will be calculated as follows:

$$Compounded\ Rate\ (1\ July\text{–}\ 31\ October\ 2020)$$

$$= \frac{SOFR\ Index_{1\ November\ 2020} - SOFR\ Index_{1\ July\ 2020}}{SOFR\ Index_{1\ July\ 2020}}$$

$$= \frac{1.04182332 - 1.04149520}{1.04149520}$$

$$= 0.00031505$$

$$Interest\ (1\ July\text{–}\ 31\ October\ 2020) = \$100{,}000{,}000 \times 0.00031505$$

$$= \$31{,}505$$

(iii) The projected interest for 1 November–31 December 2020 is:

$$30 - Day\ Average\ SOFR\ (2\ November\ 2020)^{16} = 0.08800\%$$

$$Projected\ Interest\ (1\ November\text{–}\ 31\ December\ 2020) = \$100{,}000{,}000 \times 0.08800\% \times \left(\frac{61}{360}\right)$$

$$= \$14{,}911$$

(iv) The true-up of interest is:

$$Compounded\ Rate\ (1\ \text{November– 31 December 2020})$$

$$= \frac{SOFR\ Index_{1\ January\ 2021} - SOFR\ Index_{1\ November\ 2020}}{SOFR\ Index_{1\ July\ 2020}}$$

$$= \frac{1.04197497\ -\ 1.04182332}{1.04149520}$$

$$= 0.00014561$$

$$Actual\ interest\ (1\ \text{November– 31 December 2020}) = \$100{,}000{,}000 \times 0.00014561 = \$14{,}561$$

$$True - Up\ Interest\ = Actual\ Interest - Projected\ Interest$$

$$= \$14{,}561 - \$14{,}911$$

$$= (\$350)$$

The daily SOFR compounded rates are calculated with the SOFR Index. The SOFR Index and the 30-Day Average SOFR are published on the Federal Reserve Bank of New York Fed website.[17]

[16] 2 November 2020 published 30-Day Average SOFR. 1 November 2020 is a holiday, and the following day was considered given the non-business day convention.
[17] Federal Reserve Bank of New York. SOFR Averages and Index Data.

12. What timeline does ADB consider for the LIBOR transition?

In early June 2021, the Board of Directors has reviewed the proposed FLP that will replace the LBL product. ADB is now engaging borrowers through an outreach program to inform them about the proposed FLP and ADB's LIBOR transition approach. Consultations with borrowers will assist in the finalization of the Recommendation paper which will be presented to the Board of Directors in July 2021.

13. What rules apply to nonsovereign loans?

The terms and conditions of ADB's nonsovereign loan product must also be transitioned from LIBOR to the new ARRs. ADB is committed to continue to use industry-based loan agreements that incorporate all relevant market provisions and evolve with the transition process in private sector loan markets.

14. How is ADB cooperating with other MDBs in this area?

ADB and other 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 their approaches may differ 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 International Bank for Reconstruction and Development (IBRD). The World Bank is the designated MDB representative in the ARRC.

15. Where can information on the SOFR be found?

ARRC publishes materials to explain SOFR and the transition. Below are links to ARRC's SOFR starter kit and guide to published SOFR averages.

SOFR Starter Kit: Factsheet 1
https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Factsheet_1.pdf

SOFR Starter Kit: Factsheet 2
https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Factsheet_2.pdf

SOFR Starter Kit: Factsheet 3
https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Factsheet_3.pdf

Guide to Published SOFR Averages
https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/20210511-guide-to-published-sofr-averages