BANKERS ASSOCIATION OF THE PHILIPPINES

PHIREF Fallback
Implementation Methodology

A. LIBOR Cessation

Overview

On 5 March 2021, the UK's Financial Conduct Authority (FCA) formally announced the dates for the cessation of all London Interbank Offered Rate (LIBOR) benchmark settings currently published by ICE Benchmark Administration (IBA). The FCA also confirmed that where a "synthetic" LIBOR is available after the cessation dates, the synthetic LIBOR will not, in any event, be considered to be representative as of the cessation dates. This is an important step towards the end of LIBOR, providing market participants with a fixed timeline for LIBOR's cessation.

All LIBOR Settings will either cease to be provided by the Administrator, or no longer be representative based on the timeline below:

1. Immediately after December 31, 2021 for the following:
   - GBP LIBOR – all settings (overnight, 1 week, 1, 2, 3, 6 and 12 months);
   - EUR LIBOR – all settings (overnight, 1 week, 1, 2, 3, 6 and 12 months);
   - CHF LIBOR – all settings (spot next, 1 week, 1, 2, 3, 6 and 12 months);
   - JPY LIBOR – all settings (spot next, 1 week, 1, 2, 3, 6 and 12 months);
   - USD LIBOR – 1 week and 2 months settings; and

2. Immediately after June 30, 2023 for the following:
   - USD LIBOR – overnight and 1, 3, 6 and 12 months settings.

more information here: https://www.fca.org.uk/news/press-releases/announcements-end-libor

Transition to Alternative Risk-free Rates (ARR)

Banking regulators and financial institutions across the globe are working on the potential replacement rate for LIBOR for each respective currency. In the US, the Alternative Reference Rates Committee (ARRC) identified the Secured Overnight Financing Rate (SOFR) as the rate that represents best practice for use in certain new USD derivatives and other financial contracts.

more information here: https://www.newyorkfed.org/arrc/about

Contract Amendment

With SOFR identified as the best representative to replace LIBOR for USD transactions, the International Swaps and Derivatives Association (ISDA) launched its IBOR Fallbacks

Supplement to the 2006 ISDA Definitions and the ISDA 2020 IBOR Fallbacks Protocol on 23 October 2020. Early adherence to the Protocol was widely encouraged, which took into effect las 25 January 2021 for all adhering parties.

This is because existing derivatives transactions will require a bilateral amendment to adequately address the USD LIBOR discontinuation. The Protocol provides a uniform, market- wide mechanism for parties to voluntarily amend existing derivatives contracts to address the benchmark changes.

SOFR Methodology

Based on the ISDA recommendations, the SOFR fallback rate determined for each calculation period will be calculated as the sum of 1) the Adjusted SOFR Rate plus 2) the Spread Adjustment.

The "Adjusted SOFR Rate" will be calculated in arrears, meaning that it will be determined near the end of each calculation period, based on the average of the overnight SOFR rates observed during that calculation period and compounded daily. For example, for a transaction based on 1- month LIBOR, the Adjusted SOFR Rate for a calculation period would be based on the overnight SOFR rates for a period of 30 days.

On the other hand, the "Spread Adjustment" will be fixed upon the occurrence of an Index Cessation Event and will be calculated, for each tenor of USD LIBOR, as the median of the historical difference between such tenor of USD LIBOR and the compounded overnight SOFR rate for that tenor, observed over the prior five-year period. This adjustment is intended to account for the differences between USD LIBOR and SOFR, including the fact that USD LIBOR is an unsecured rate while SOFR is a secured rate. The Spread Adjustment is separate from, and not in place of, any spread to USD LIBOR previously negotiated between the parties. Any such negotiated spread will still be added to the "All-in" SOFR fallback rate to determine the floating rate on any such transactions.

Since the SOFR fallback rate is to be calculated in arrears based on overnight observations during each calculation period, it would not be possible to determine the rate in advance, or at the beginning of each calculation period. As a result, the SOFR fallback rate for each calculation period will be determined near the end of the calculation period, two business days prior to the related payment date.

ISDA has engaged Bloomberg Index Services Limited (BISL) to calculate and publish the fallback rates. BISL will publish, on a daily basis, the Adjusted SOFR Rate, the Spread Adjustment and the "All-in" fallback rate for each tenor of the USD LIBOR.

Under the Protocol and Amendments, BISL's published "All-in" SOFR fallback rates will be the official designated source for the replacement rate for each tenor of USD LIBOR following the occurrence of an Index Cessation Event.

Impact on the Philippine Interbank Reference Rate (PHIREF)

For the Philippines, the discontinuation of LIBOR also poses significant concerns given that the USD LIBOR is used in the calculation of the PHIREF, which is the implied Peso interest rate derived from done deals in the interbank foreign exchange swap market and is used as the benchmark for the reset value for the Peso floating leg of an Interest Rate Swap.

Revisions to the Existing Benchmark

As USD LIBOR is embedded in the current calculation of the PHIREF benchmarks, one alternative is to use the ISDA recommended fallback rate instead, which is SOFR. Unlike LIBOR which has a term structure, SOFR is compounded in arrears.

The idea in computing the new PHIREF is for the existing calculation to be kept intact, thereby adding the swap point component to the alternative risk-free rate and retaining its nature. The adjustment will be on the calculation of the USD rate component as the fallback rate is now computed in arrears and is determined at the end of each tenor. Similar to SOFR, the PHIREF Fallback rates will now be published in arrears.

B. **PHIREF Fallback Methodology**

Overview

The Philippines Interbank Reference Rate (PHIREF) is an implied Philippine Interest rate derived from US Dollar (USD) to Philippine Peso (PHP) FX Forward trades and the USD Libor curve. It is published for 7 tenors: Overnight, 1-week, 1-month, 2-month, 3-month, 6-month and 1-year. PHIREF is used as the benchmark for the reset value for the peso floating leg of an interest rate swap.

The permanent cessation of the publication of USD Libor rates therefore will impact the future publication of PHIREF.

As of 31st December 2021, PHIREF will no longer be published for the 1-week and 2-month tenors as USD Libor in those tenors cease.

PHIREF will continue to be published for the Overnight, 1-month, 3-month, 6-month and 1-year until Libor ceases for those tenors on 30th June 2023.

To be consistent with the ISDA's approach, the calculation for the PHIREF fallback utilizing SOFR rate as the USD LIBOR replacement, needs to be adjusted for the term structure, credit spread and other factors (e.g. liquidity, operational risk and other risks), which, by nature, is currently embedded in the banks' pricing, as the Adjusted SOFR is considered a risk-free or nearly risk

free rate. Hence, the application of a spread adjustment could allow to possibly take these factors into account.

In this regard, the Administrator of PHIREF, the Bankers Association of the Philippines (BAP), has recommended a PHIREF Fallback for legacy trades or contracts to migrate to. The PHIREF Fallback will be published using similar methodology to PHIREF but instead of LIBOR will utilize the ISDA LIBOR fallback rates, defined as the Secured Overnight Financing Rate (SOFR) plus a spread. Fallback Rate (SOFR) will be used from two days prior to the Original PHIREF Rate Record Day. This is to allow for operational efficiency given the time difference between the US and the Philippines.

Coverage

Tenor	Swaps Component	USD Rate Component	PHIREF Fallback Basis
Overnight 1 Month 3 Months 6 Months	Weighted average of USD/PHP FX Swaps for the corresponding tenor booked from 9:00 AM to 11:30 AM, Philippine time.	Fallback Rate (herein referred to as SOFR or Secured Overnight Financing Rate, unless otherwise specified or amended) for the corresponding tenor published daily by Bloomberg as early as 8:00 AM New York time, which is equivalent to 9:00 PM, Philippine time.	PHIREF AM Fix for the corresponding tenor published as the corresponding USD Rate Component becomes available.

Day count convention: Actual/360

Calculation

Bloomberg, as the Calculation Agent, shall compute for and determine the PHIREF Fallback, for each maturity, matching each tenor specified above, on each business day as follows:

$$\left[\left(\frac{swap}{spot} * \frac{\left(360 + \frac{Interest\ Rate}{100} * days\right)}{days}\right) + \frac{Interest\ Rate}{100}\right] * 100$$

Where:

▪ **Swap Points**[1] refers to the volume weighted average price of Swap Points for qualifying transactions for each tenor. Note this input will match value used in PHIREF for the given

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[1] Higher Swap Points would result in a higher PHIREF Fallback. On the other hand, it is possible to have lower or even negative Swap Points, in which case, may result to a lower or negative PHIREF benchmark.

Rate Record Day. In the absence of done deals, the mid of the broker best bid and best ask appearing on the Bloomberg pages shall be used. *See Qualifying Transactions for selection criteria.*

- **Spot** refers to the volume weighted average price of spot reference rate for qualifying transactions for each tenor. Note this input will match value used in PHIREF for the given Rate Record Day. In the absence of done deals, the broker spot reference appearing on the Bloomberg pages shall be used. *See Qualifying Transactions for selection criteria.*

- **Days[2]** is the number of days in the calculation period for each corresponding tenor.

- **Interest Rate** is the 'all in' fallback rate which is the compounded SOFR over the relevant period and spread adjustment. The Rate Record Day for this fallback will correspond to two business days before the Original PHIREF Rate Record Day.

Qualifying Transactions
All interbank transactions greater than or equal to USD 1 Million electronically reported through BAP-approved trading platforms. Transactions must be entered between 09:00 and 11:30. There is a grace period of 15 minutes to identify transactions confirmed by 11:45.

Insufficient Trade Data
In the absence of qualifying transactions, the mid of best bids and best asks from specified broker quotes appearing on the Bloomberg pages at as of 11:30 AM. Broker prices must include bid and ask.

Spot & Swap Inputs
Swap Points & Spot input rates are published on the same day as corresponding trade date.

Publication

PHIREF Fallbacks are published at 10:30 AM EST on the same day as the corresponding Fallback Rate (SOFR) is published. **Note that the corresponding Fallback Rate (SOFR) is two business days prior to PHIREF Rate Record Day.**

Due to the alignment of the Fallback Rates' (SOFR) Day Count convention to match that of the IBOR, it can happen that on a certain day there may be one, several, or no PHIREF Fallbacks published.

PHIREF Fallback rates have two dates associated with it:

- Original PHIREF Rate Record Day
- Calculation Date

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[2] Note that the day count used to calculate the PHIREF may not necessarily be the same as the day count between 2 IRS fixing dates.

Holidays

PHIREF Fallback will be published Mondays to Fridays for each valid business day for USD/PHP transactions, except in the following cases:

- Overnight – Not published on PHP & Fed Holidays.
- 1, 3 & 6 Month – Not published on PHP Holidays.

Publication Pages

PHIREF Fallback rates will be published on the Bankers Association of the Philippine's (BAP) website (https://bap.org.ph) as well as the Bloomberg Terminal.

The last available PHIREF Fallback is available on the Bloomberg page; PHRF<GO>. PHIREF Fallback for a specific Original PHIREF Rate Record Day is available via HP<GO> for the specific tenor. There are two dates associated with each tenor:

- Date – Referred to as Original PHIREF Rate Record Day.
- Calc Date – Referred to as the Calculation Date.

C. Implementation

Philippine banks have already started tracking and monitoring their PHIREF and LIBOR exposure. They are encouraged to initiate communication on the risk-free benchmark fallback rates to all stakeholders. Each bank must also prepare their operations to accommodate PHIREF Fallback application.

There will be a test period for PHIREF Fallback prior to the permanent cessation of LIBOR. This shall provide time for banks to identify and troubleshoot any system limitations. During this time, regulators will as well evaluate and approve the new methodology.

For derivative transactions that have reference to PHIREF, which currently relies on USD LIBOR for its calculation, the Fallback Rate "PHIREF Fallback" would officially apply following the permanent cessation of the said USD benchmark. **It is possible that a PHIREF Fallback for a Rate Record Day is not published prior to IRS payment date. In such events, BAP recommends parties use the last available PHIREF Fallback.**

PHIREF Fallback shall be published until December 31, 2027, at which point publication will cease. If feedback prior to that data suggests no usage, the rate may be discounted earlier. At least 90-day notice will be provided.

Post-LIBOR cessation, another improvement on the existing PHIREF Fallback benchmark rates may need to be created as the USD rate basis will shift to SOFR compounded (in arrears), depending on the direction from the local regulators and the possible creation of an Overnight Index Swap (OIS) or Cross Currency Swap (CCS) market.

D. Annex

Annex I: 3 Month Calculation Example

PHP FX Trade Date	PHP FX Value Date	PHP FX 3 Month Settle Date	Appropriate USD Rate (2BD before FX Trade Date)	PHIREF Fallback Rate Record Day	PHIREF Fallback Calculation Date	Remarks
Monday, June 7, 2021	Tuesday, June 8, 2021	Wednesday, September 8, 2021	Thursday, June 3, 2021	Same as PHIREF	Friday, September 3, 2021	Fallback Calc Date 3BD before Settle
Tuesday, June 8, 2021	Wednesday, June 9, 2021	Thursday, September 9, 2021	Friday, June 4, 2021	Same as PHIREF	Tuesday, September 7, 2021	Fallback Calc Date 2BD before Settle
Wednesday, June 9, 2021	Thursday, June 10, 2021	Friday, September 10, 2021	Monday, June 7, 2021	Same as PHIREF	Tuesday, September 7, 2021	Fallback Calc Date 3BD before Settle
Thursday, June 10, 2021	Friday, June 11, 2021	Monday, September 13, 2021	Tuesday, June 8, 2021	Same as PHIREF	Wednesday, September 8, 2021	Fallback Calc Date 3BD before Settle
Friday, June 11, 2021	Monday, June 14, 2021	Tuesday, September 14, 2021	Wednesday, June 9, 2021	Same as PHIREF	Thursday, September 9, 2021	Fallback Calc Date 3BD before Settle

Typically, PHIREF Fallback will be available one or more business days prior to settlement date. There may be cases in which PHIREF Fallback is not available in time for swaps payment. In those cases, the previous days PHIREF Fallback should be used.

Annex II: 3 Month Comparative Example

Component	Day	Input
USDPHP 3-month Swap Points	9-Jun-21	0.1542
USDPHP Spot	9-Jun-21	47.7288
3 Month USD Libor	7-Jun-21	0.1231%
Day count	9-Jun-21	92
3-month PHIREF	**9-Jun-21**	**1.387%**

Component	Day	Input
USDPHP 3-month Swap Points	9-Jun-21	0.1542
USDPHP Spot	9-Jun-21	47.7288
3 Month Fallback Rate (SOFR)	7-Jun-21	0.3073%
Day count	9-Jun-21	92
3-month PHIREF	**9-Jun-21**	**1.572%**