Topical Presentation: Global Reference Rate Reforms and the FX Market

GFXC MEETING
HOSTED BY THE BANQUE DE FRANCE
29-30 NOVEMBER 2018
Session Agenda

Part 1: Developments in Global Reference Rate Reform
• Update from FSB Official Sector Steering Group - Nov 2018
• Update on ARRC Reforms

Part 2: Relevance to the FX Market
• Implications for FX markets: Illustration - Cross currency basis swaps
• Questions for discussion
Session Agenda

Part 1: Developments in Global Reference Rate Reform

- Update from FSB Official Sector Steering Group - Nov 2018
- Update on ARRC Reforms

Part 2: Relevance to the FX Market

- Implications for FX markets: Illustration - Cross currency basis swaps
- Questions for discussion
“[Interest rate] benchmarks are at the heart of the plumbing of the financial system. They are widely referenced in financial contracts. Corporate borrowing rates are often priced as a spread to an interest rate benchmark. Many derivative contracts are based on them, as are most asset-backed securities. In light of the issues around the London Inter-Bank Offered Rate (LIBOR) and other benchmarks that have arisen over the past decade, there has been an ongoing global reform effort to improve the functioning of interest rate benchmarks.”

Guy Debelle (Deputy Governor of the Reserve Bank of Australia), September 8, 2017 speech

“…Reference rates are vital to the efficient market functioning. They facilitate trading in standardized contracts, which lowers transaction costs and increases market liquidity. Robust reference rates can also reduce information asymmetries and the risk of misconduct by providing transparent, independent pricing.”

William C. Dudley (Former President of the Federal Reserve Bank of New York), May 24, 2018 at Bank of England Markets Forum 2018

“In our view it is not only potentially unsustainable, but also undesirable, for market participants to rely indefinitely on reference rates that do not have active underlying markets to support them. As well as an inherently greater vulnerability to manipulation when rates are based on judgements rather than the real price of term funding, there are a host of questions about whether and how such reference rates can respond to stressed market conditions…I and my colleagues have therefore spoken to all the current panel banks about agreeing voluntarily to sustain LIBOR for a four to five year period, i.e. until end-2021.”

Andrew Bailey (Chief Executive of the FCA), July 27, 2017 at Bloomberg London

“The focus now is on transition. Market participants in every sector and market that use LIBOR now need to come together to identify and resolve issues, change business practices, and adopt alternative benchmarks…”

Mark Carney, May 24, 2018 at Bank of England Markets Forum 2018
FSB OSSG Progress Report: Reforming Major Interest Rate Benchmarks (Nov 2018)

Covers progress made in –
- Strengthening of IBORs
- Identification of and transition to alternative reference rates
- Enhancing contractual robustness

Strengthening of IBORs
- Work to strengthen IBORs have continued – methodologies, regulatory and supervision frameworks
- For LIBOR, which could cease once office sector support is withdrawn at end-2021, transition is necessary

Identification of and transition to alternative reference rates (i.e. risk free rates or RFRs)
- Approach towards RFRs have diverged across jurisdictions
- GBP/USD/CHF: Transition away from LIBOR necessary, to RFRs
- EUR: RFR transition may take longer; continue to support EURIBOR reform
- Other currencies (AUD/CAD/JPY/SGD): multiple rate approach adopted
Enhancing contractual robustness

- To address risk of discontinuation of major interest rate benchmarks
- Scope includes derivatives and cash products (e.g. loans, bonds, mortgages)
- ISDA and ARRC consultations on contractual fallbacks, and ISDA Benchmark Supplement

Substantial work remains...particularly transition planning and implementation challenges

- Continued engagement needed between authorities and market participants
- Approaches would differ across markets
- Areas of focus include -
  - Development of products referencing RFRs
  - Development of standards/protocols for RFRs
  - Transitioning of cross-currency basis market to new RFR benchmarks
  - Development of RFR-derived term rates
  - Conversion of legacy contracts
# Replacing LIBOR: Overview of RFRs

## Risk-Free Rates Identified in LIBOR Currency Areas

<table>
<thead>
<tr>
<th>Country</th>
<th>Committee</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USA</strong></td>
<td>ARRC</td>
<td>Selected SOFR. Produced by NY Fed since April 2018 (secured)</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>RFRWG</td>
<td>Selected SONIA. BoE has reformed Sonia, produced since April 2018 (unsecured)</td>
</tr>
<tr>
<td><strong>EU</strong></td>
<td>ECB WG</td>
<td>Selected ESTER. ECB to produce in H2 2019 (unsecured)</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>BOJ Study Group</td>
<td>Selected TONAR (unsecured)</td>
</tr>
<tr>
<td><strong>Switzerland</strong></td>
<td>Working Group</td>
<td>Selected SARON, administered by SIX (secured)</td>
</tr>
</tbody>
</table>

*See Annex for links to committee websites*
Session Agenda

Part 1: Developments in Global Reference Rate Reform
• Update from FSB Official Sector Steering Group - Nov 2018
• Update on ARRC Reforms

Part 2: Relevance to the FX Market
• Implications for FX markets: Illustration - Cross currency basis swaps
• Questions for discussion
Briefing on the Alternative Reference Rates Committee (“ARRC”)

- **ARRC Formation:** In November 2014, the Federal Reserve Board (“FRB”) created the Alternative Reference Rates Committee (“ARRC”) to:
  1. **Identify a set of possible alternative reference rates** that comply with IOSCO Principles for Financial Benchmarks
  2. **Select one of these possible rates**; and
  3. **Identify an adoption plan** with means to facilitate the acceptance and use of the alternative rate

- **Membership:** Initially over-the-counter derivative dealers (all GSIBs represented), major clearing houses (LCH, CME), ISDA, and domestic supervisors
  - Expanded in 2018 to include a broad array of market participants, including asset managers, cash market participants across loans, bonds, securitizations, as well as their industry associations

- **Selection of Rate:** Secured Overnight Financing Rate (“SOFR”), which is an overnight U.S. Treasury repo rate, selected in June 2017; publication of SOFR commenced on April 3, 2018

- **Outreach Efforts:**
  - Public consultation and interim report on two proposed alternative rates and preliminary implementation plans (May 2016)
  - Roundtable events (June 2016, July 2018)
  - Solicitation of interest in joining a buy-side advisory group (August 2016)
  - Roundtable to solicit input on the development of the “paced transition” adoption plan (November 2017)
  - Second report released summarizing the decision to select SOFR and Paced Transition Plan (March 2018)
  - Guiding Principles for Fallback Language in new Cash product contracts released (July 2018)
  - LIBOR fallback market consultations for Floating Rate Notes and Syndicated Loans (comments due end of November 2018)

---

ARRC “Paced Transition” Timeline for the U.S. Derivatives Market

- **Jul-Dec 2018**: Develop infrastructure for futures/OIS trading in SOFR. Trading begins in futures and/or bilateral uncleared OIS referencing SOFR.
- **Jan-Mar 2019**: Market readiness to trade cleared OIS referencing SOFR in current PAI environment.
- **Jan-Mar 2020**: Ability to trade cleared contracts based on either SOFR and current EFFR discount curves.
- **Apr-Jun 2021**: CCPs no longer accept new swap contracts for clearing with EFFR as PAI and discounting unless risk-reducing for legacy contracts.
- **YE 2021**: Creation of a term reference rate based on SOFR-derivatives markets provided liquidity has developed sufficiently to produce a robust rate.

*Clearing timeline moved up to 2018

Source: ARRC Second Report on Transition from LIBOR, March 2018
ARRC Frequently Asked Questions

Why does the market need a new benchmark rate?
LIBOR is increasingly based on the expert judgment of panel banks due to the declining amount of unsecured, wholesale borrowings by banks since the financial crisis. For this reason, LIBOR is increasingly less of a robust, transactions-based market interest rate as envisioned by international standards for benchmarks.

What other rates were considered for replacing USD LIBOR?
The ARRC considered a comprehensive list of potential alternatives, including other term unsecured rates, overnight unsecured rates such as the Effective Federal Funds Rate (EFFR) and the Overnight Bank Funding Rate (OBFR), other secured repo rates, Treasury bill and bond rates, and overnight index swap rates linked to EFFR.

Will there be a “term SOFR”?
Once the initial steps of the ARRC’s Paced Transition Plan are successfully accomplished, which is expected in 2021, and liquid derivative markets referencing SOFR have developed, the final step in the Paced Transition Plan calls the creation of a forward-looking term rate based on SOFR-linked derivative markets.

Who administers and produces SOFR and how is the rate production process reviewed?
The New York Fed is the administrator and producer of SOFR. The New York Fed publishes SOFR on a daily basis on its website at approximately 8:00 a.m. eastern time. An internal New York Fed Oversight Committee periodically reviews the rate production process. The Oversight Committee consists of members from across the New York Fed organizational structure who are not involved in the daily production of SOFR.

Is SOFR meant to co-exist with LIBOR, or is it meant to replace LIBOR?
The ARRC’s focus is to encourage voluntary adoption of SOFR, rather than to mandate a transition away from USD LIBOR. SOFR, therefore, will co-exist with USD LIBOR as long as USD LIBOR is published, offering market participants an alternative reference rate for new transactions.

Who will be impacted by this transition to SOFR?
Due to the broad use of USD LIBOR as a reference rate, all financial market participants including retail customers, corporations, issuers, investors, asset managers, service providers of financial products, and large financial institutions are impacted by the risks associated with USD LIBOR.

What sort of financial products are expected to reference SOFR?
SOFR is suitable to be used across a broad range of financial products, including but not limited to, derivatives (listed, cleared, and bilateral-OTC), and many variable rate cash products that have historically referenced LIBOR.

What is “fallback language”?
“Fallback language” refers to the legal provisions in a contract that apply if the underlying reference rate in the product (e.g. LIBOR) is discontinued or unavailable.

What should market participants do to strengthen fallback language in derivatives?
ISDA is in the process of updating the definitions of USD LIBOR and other key benchmarks tied to interbank funding markets used in derivatives contracts to include new fallbacks (SOFR with certain contemplated adjustments for USD LIBOR) in the event of a permanent discontinuation of the relevant benchmark. ISDA also plans to publish a multilateral protocol to assist market participants in including the amended definitions (i.e., the definitions with fallbacks for benchmark cessations) in legacy swap contracts.

What should market participants do to strengthen fallbacks in cash products?
Although the timing and method of implementing new fallbacks in cash products will vary with the product type, the ARRC plans to consult on standardized fallback language available for voluntary adoption for a variety of cash products by the end of 2018.

How do we know SOFR is here to stay?
The overnight U.S. Treasury repo market that SOFR is based on is the largest rates market at a given maturity in the world, and SOFR encompasses the widest coverage of the market available, which will allow it to evolve with the market. The ARRC concluded that SOFR is superior to USD LIBOR, and other alternative reference rates considered by the ARRC. The coordination with a broad range of financial market participants, and commitments from the private-sector (including the financial services industry) will ensure the availability, adoption, and transition to SOFR in a smooth and timely manner.

Source: ARRC Frequently Asked Questions, September 2018
Challenges in the Derivatives and Cash Markets
Transition Challenges in the Derivatives Market

- **ISDA IBOR Fallback WG.** Considering different methodologies for fallbacks to central bank committee “risk free rates” + spread in the event of a permanent cessation of an IBOR
  - ISDA has conducted a broad survey of the market to develop consensus for one of several options for Sterling LIBOR, JPY LIBOR & several other interest rate benchmarks
    - US & Europe to be the subject of a separate consultation
  - Purpose is to adjust for the fundamental difference between the “risk free rates” (overnight rates) and LIBOR (which is a forward looking rate that takes into account credit risk)
    - *Preliminary results of the survey were released this week:*
      - Adjusted Risk Free Rate: Compounded Setting in Arrears
      - Spread Adjustment: Historical Mean Approach
      - ISDA hopes to publish aggregated and anonymized results by end of December 2018; and preliminary feedback that results may be appropriate for USD LIBOR, EURIBOR & EUR LIBOR

- **Implementation of Fallback.** ISDA definitions to include fallback for new IBOR trades to “risk free rate” plus spread and a protocol to amend legacy IBOR transactions

- **Term Rate Challenge.** The Official Sector Steering Group (OSSG) has communicated that the derivatives market should transition to overnight rates and not wait for forward looking term rates derived from the “risk free rates”

- **Regulatory Challenges.** The ARRC Regulatory WG is seeking regulatory relief both for (a) voluntary conversion of grandfathered IBOR swaps to “risk free rate” swaps and (b) amendment of IBOR swaps to incorporate the new ISDA IBOR fallback provisions, under Title VII of Dodd Frank (e.g., applicability of uncleared margin rules, mandatory clearing and trade reporting)
Transition Challenges in the Cash Market

Securitized Products include MBS & CMOs, CLOs, ABS and CDOs.

Cash Market Roll-Down Over Time

- Securitized Products
- Bonds (FRNs)
- Consumer Loans
- Business Loans

71% of Cash Products mature by YE2021, compared with 82% for total USD LIBOR exposure.

Typical Contract Language Varies Across Cash Products

<table>
<thead>
<tr>
<th>Securitized Products (1)</th>
<th>Business Loans</th>
<th>Bonds (FRNs)</th>
<th>Mortgages / Consumer Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fallback Rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Agency MBS and CMO: Issuer selection</td>
<td>• Obtain bank quotes \rightarrow Alternative Base Rate</td>
<td>• Obtain bank quotes \rightarrow Fixed Rate at last published LIBOR set</td>
<td>• Alternative Base Rate plus / (minus) spread</td>
</tr>
<tr>
<td>• Non-agency MBS and ABS: Bank poll \rightarrow Fixed Rate at last published LIBOR set</td>
<td>• Prime Rate</td>
<td>• CLO: Final LIBOR set</td>
<td>- Spread component undefined</td>
</tr>
<tr>
<td>• CLO: Final LIBOR set</td>
<td>• EFFR plus fixed spread</td>
<td>• Unanimous consent among bondholders</td>
<td>• Chosen by noteholder</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consent Required</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bilateral Loans: Agreement between borrower and lender</td>
<td>• Bilateral Loans: Agreement between borrower and lender</td>
<td>• Unanimous consent among bondholders</td>
<td>• Agency MBS and CMO: Unanimous consent</td>
</tr>
<tr>
<td>• Syndicated Loans: Unanimous consent</td>
<td>• Bonds (FRNs) Consent Required</td>
<td></td>
<td>• Non-agency MBS and ABS: Unanimous consent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• CLO: Unanimous consent (typically called after 1-2 years)</td>
</tr>
</tbody>
</table>

Mortgages / Consumer Loans

- Alternative Base Rate plus / (minus) spread
- Spread component undefined

Bonds (FRNs)

- Obtain bank quotes \rightarrow Fixed Rate at last published LIBOR set
- Unanimous consent among bondholders


1. Securitized Products include MBS & CMOs, CLOs, ABS and CDOs.
Purpose of ARRC Market Consultations.

- Solicit feedback from market participants on proposed LIBOR fallback provisions to be included in new USD LIBOR floating rate notes ("FRNs") and syndicated loans.
- Comments due by November 26, 2018

Proposed fallbacks have 3 key components:

- Observable triggers that invoke the transition from LIBOR to the new replacement rate
- A successor rate waterfall
- A spread adjustment mechanic
  - Purpose of spread is to address the differences between LIBOR (which is a forward looking term rate with a credit risk component) and SOFR (or the other replacement rates listed further down the waterfall, which are overnight rates)

ARRC members participated in the development of the proposed LIBOR fallbacks:

- FRN – a single proposal which defines the events that commence the LIBOR transition and a specific waterfall of replacement rates and spread adjustments
- Syndicated loans - two different proposals:
  - Hardwired Approach - similar to FRNs, or
  - Amendment Approach – amendment mechanism allowing the borrower and administrative agent to select a replacement rate giving due consideration to market convention and recommendation by a relevant governmental authority, subject to a 5 business day negative consent of majority lenders.
ARRC Market Consultations - Trigger Events

- **LIBOR Cessation Triggers:**
  - Public statement by benchmark administrator (ICE) that it has ceased or will cease to provide LIBOR
  - Public statement by regulator of ICE (FCA), central bank (Federal Reserve) or a resolution authority that the benchmark administrator has ceased or will cease to provide LIBOR

- **Proposed Additional Pre-Cessation Triggers:**
  - Failure by the benchmark administrator to publish LIBOR for five consecutive business days (and such failure is not due to a temporary disruption)
  - Public statement by the benchmark administrator that it has invoked or will invoke (permanently or indefinitely) its insufficient submissions policy
  - Public statement by regulator of the benchmark administrator announcing that LIBOR is no longer representative or may no longer be used.

- **Opt-In Trigger for Loans:**
  - Both the Syndicated Loans Amendment Approach and Hardwired Approach allow parties to determine that a trigger has occurred if new (or amended) syndicated loans are being executed utilizing a new benchmark rate to replace LIBOR.
Proposed replacement rate waterfall for FRNs and Syndicated Loans:

<table>
<thead>
<tr>
<th>FRN Replacement Benchmark Waterfall</th>
<th>Syndicated Loan Hardwired Approach Waterfall</th>
<th>Syndicated Loan Amendment Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong>: Term SOFR recommended by Relevant Governmental Body¹ + Spread</td>
<td>✓</td>
<td>The Administrative Agent and Borrower may amend the agreement to replace LIBOR with an alternative benchmark rate (which may include term SOFR) plus spread, giving due consideration to any convention for similar USD-denominated syndicated credit facilities or any selection by the Relevant Governmental Body with respect to such facilities.</td>
</tr>
<tr>
<td><strong>Step 2</strong>: Compounded SOFR + Spread</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong>: Spot SOFR + Spread</td>
<td>✓³</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong>: Replacement rate recommended by Relevant Governmental Body + Spread</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong>: Replacement rate in ISDA Definitions at such time + Spread²</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong>: Replacement rate determined to be an FRN industry accepted rate by issuer (or its designee) + Spread</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

¹ Relevant Governmental Body means the Fed, N.Y. Fed, or a committee officially endorsed or convened by the Fed or N.Y. Fed, such as the ARRC.
² If the replacement rate can’t be determined in Steps 1-4 and the issuer (or its designee) determines that Step 5 is not an industry-accepted successor rate for FRNs, then Step 6 applies.
³ If the Administrative Agent determines that Steps 1-3 cannot be determined, then the Administrative Agent and Borrower shall establish an alternative rate of interest that gives due consideration to any prevailing market convention for syndicated loans in the U.S. or any selection by the Relevant Governmental Body.
**Proposed spread adjustments for FRNs and Syndicated Loans:**

<table>
<thead>
<tr>
<th>FRN Replacement Benchmark Spread Waterfall</th>
<th>Syndicated Loan Hardwired Approach Spread Waterfall</th>
<th>Syndicated Loan Amendment Approach Spread Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong> Spread recommended by Relevant Governmental Body</td>
<td>✓</td>
<td>The spread adjustment, or method for calculation of the spread adjustment, agreed by the Administrative Agent and Borrower, giving due consideration to any convention for similar USD-denominated syndicated credit facilities or any selection by the Relevant Governmental Body with respect to such facilities.</td>
</tr>
<tr>
<td><strong>Step 2:</strong> Spread used for LIBOR fallback in ISDA definitions, provided that the FRN replacement benchmark(^1) is equivalent to the ISDA fallback rate(^2)</td>
<td>✓ (^4)</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3:</strong> Spread determined by issuer (or its designee) to produce a FRN industry accepted replacement rate(^3)</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

---

1. The FRN replacement benchmark means the *unadjusted* benchmark listed in the replacement rate waterfall (not taking into account any spread adjustment).
2. If the issuer (or its designee) determines that Step 2 does not produce an industry accepted successor rate for FRNs, then Step 3 applies.
3. Issuer (or its designee) to modify the ISDA spread adjustment, if available.
4. The Hardwired Approach does not include a requirement that the replacement benchmark is equivalent to the ISDA fallback rate.
Session Agenda

Part 1: Developments in Global Reference Rate Reform
- Update from FSB Official Sector Steering Group - Nov 2018
- Update on ARRC Reforms

Part 2: Relevance to the FX Market
- Implications for FX markets: Illustration - Cross currency basis swaps
- Questions for discussion
Relevance to the Global FX Market: Mechanics

1. Interest rates factor into **pricing** of certain FX Products

2. Interest rates factor into **contractual terms** for certain FX Products

3. FX products could be an **intersection** where two different interest rate benchmarks will meet in a single instrument
Implications for FX markets

An illustration: Cross currency basis swaps

Intersection of 2 IBORs – Some observations

- Market convention/operational issues to be sorted out due to differing benchmark publication timings
- Secured vs. unsecured reference benchmark
- Overnight versus term rates
- Differences in the timing of benchmark reform could complicate transition efforts
Questions for discussion

1. What are the possible implications on the FX market?

2. What are the FX products that could be impacted e.g. cross currency basis swaps?

3. What is the state of industry preparedness? What are the indicators to monitor?

4. What role should the various stakeholders play in the transition?
Developments in Global Reference Rate Reform: Reform Efforts

- US: Alternative Reference Rates Committee
- UK: Working Group on Sterling Risk-Free Reference Rates
- Switzerland: The National Working Group on Swiss Reference Rates
- Japan: Study Group on Risk Free Reference Rates
- Euro Area: Working Group on Risk-Free Reference Rates for the Euro Area
### Developments in Global Reference Rate Reform: Reform Efforts

<table>
<thead>
<tr>
<th>Currency</th>
<th>Interest rate benchmark</th>
<th>Alternative reference rate (candidates)</th>
<th>Type of alternative reference rate</th>
<th>Remarks</th>
<th>Key milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD</td>
<td>BBSW</td>
<td>RBA Cash Rate</td>
<td>Unsecured</td>
<td>Multiple-rate approach has been adopted</td>
<td></td>
</tr>
<tr>
<td>BRL</td>
<td>DI rate</td>
<td>Selic</td>
<td>Secured</td>
<td>Multiple-rate approach has been adopted</td>
<td></td>
</tr>
<tr>
<td>CAD</td>
<td>CDOR</td>
<td>Enhanced CORRA</td>
<td>Secured</td>
<td>Multiple-rate approach has been adopted</td>
<td>White paper on enhanced CORRA is to be published in Q1 2019.</td>
</tr>
<tr>
<td>CHF</td>
<td>LIBOR</td>
<td>SARON</td>
<td>Secured</td>
<td>Transition is necessary. Compounded SARON is recommended. A forward-looking term rate seems not feasible.</td>
<td>The FCA has said it will not use its powers to maintain LIBOR beyond end-2021.</td>
</tr>
<tr>
<td>EUR</td>
<td>LIBOR</td>
<td>ESTER or Euribor</td>
<td>Unsecured</td>
<td>EUR LIBOR is not in scope of the working group on euro RFR owing to its limited market usage as compared to Euribor. Possible alternatives could be ESTER or the reformed Euribor.</td>
<td>The FCA has said it will not use its powers to maintain LIBOR beyond end-2021.</td>
</tr>
<tr>
<td>EUR</td>
<td>Euribor</td>
<td>ESTER</td>
<td>Unsecured</td>
<td>Term RFR under consideration, meanwhile Euribor is being reformed to meet BMR requirements.</td>
<td>A phase-in to a new hybrid methodology for Euribor is expected in the course of 2019.</td>
</tr>
<tr>
<td>EUR</td>
<td>EONIA</td>
<td>ESTER</td>
<td>Unsecured</td>
<td>A possible recommendation on a specific path for transition is planned around end-2018.</td>
<td>Usage of EONIA is to be prohibited for new contracts at the end of the BMR’s transitional period, i.e. from 1 January 2020.</td>
</tr>
</tbody>
</table>
# Developments in Global Reference Rate Reform: Reform Efforts

<table>
<thead>
<tr>
<th>Currency</th>
<th>Interest rate benchmark</th>
<th>Alternative reference rate (candidates)</th>
<th>Type of alternative reference rate</th>
<th>Remarks</th>
<th>Key milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBP</td>
<td>LIBOR</td>
<td>SONIA</td>
<td>Unsecured</td>
<td>Transition is necessary. Public consultation on term SONIA reference rates released.</td>
<td>See RFRWG provisional timeline. The FCA has said it will not use its powers to maintain LIBOR beyond end-2021.</td>
</tr>
<tr>
<td>HKD</td>
<td>HIBOR</td>
<td>To be determined(^{103})</td>
<td>Multiple-rate approach not precluded</td>
<td>TMA market consultation by early 2019.</td>
<td></td>
</tr>
<tr>
<td>JPY</td>
<td>LIBOR</td>
<td>TONA or TIBOR</td>
<td>Unsecured</td>
<td>Transition is necessary. Term RFR planned to be discussed</td>
<td>The Committee will hold public consultation and a forum before publishing deliverables by late 2019. The FCA has said it will not use its powers to maintain LIBOR beyond end-2021.</td>
</tr>
<tr>
<td>JPY</td>
<td>TIBOR</td>
<td>TONA</td>
<td>Unsecured</td>
<td>Multiple-rate approach has been adopted</td>
<td>The Committee will hold public consultation and a forum before publishing deliverables by late 2019.</td>
</tr>
<tr>
<td>JPY</td>
<td>Euroyen TIBOR</td>
<td>TONA</td>
<td>Unsecured</td>
<td>Multiple-rate approach has been adopted</td>
<td>JBATA will develop reforms during the first half of 2019 and conduct the second consultation on integration of Japanese Yen TIBOR and Euroyen TIBOR.</td>
</tr>
</tbody>
</table>
Developments in Global Reference Rate Reform: Reform Efforts

<table>
<thead>
<tr>
<th>Currency</th>
<th>Interest rate benchmark</th>
<th>Alternative reference rate (candidates)</th>
<th>Type of alternative reference rate</th>
<th>Remarks</th>
<th>Key milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGD</td>
<td>SIBOR</td>
<td>N/A</td>
<td>N/A</td>
<td>Rate not used in SGD derivatives</td>
<td>Enhanced methodology to be implemented after transitional testing in H2 2019.</td>
</tr>
<tr>
<td>SGD</td>
<td>SOR</td>
<td>To be determined</td>
<td>To be determined</td>
<td>SOR is a transaction-based rate</td>
<td>To review the appropriate USD funding rate for SOR computation, taking into consideration the transition of USD LIBOR to SOFR.</td>
</tr>
<tr>
<td>USD</td>
<td>LIBOR</td>
<td>SOFR</td>
<td>Secured</td>
<td>Transition is necessary</td>
<td>ARRC’s Paced Transition Plan contains milestones out to 2021. The FCA has said it will not use its powers to maintain LIBOR beyond end-2021. Guiding principles for fallback contract language for cash products released (in July 2018).</td>
</tr>
<tr>
<td>ZAR</td>
<td>Jibar</td>
<td>To be determined (Reformed Jibar for existing derivative contracts. Choice of ZARibor and SASFR for new derivative contracts.)</td>
<td>Reformed Jibar: unsecured ZARibor: unsecured SASFR: secured</td>
<td>Multiple-rate approach recommended Treasury bill curve and GC repo market potential platforms for term RFRs</td>
<td>Recently formed MPG will map project plans once benchmark rates have been finalised in Q2 2019.</td>
</tr>
</tbody>
</table>