IBOR REFORM
FREQUENTLY ASKED QUESTIONS

Benchmark Transition

Global Markets

July 2020

BNP PARIBAS

The bank
for a changing
world

CONTENTS

`

BACKGROUND

As regulators and supervisors are engaging in a global effort to reform IBOR (interbank offered rate) rates to make them more resilient and reliable by deriving them more directly from actual executed transactions as opposed to the polling of banks, there are more questions being asked by users of these rates.

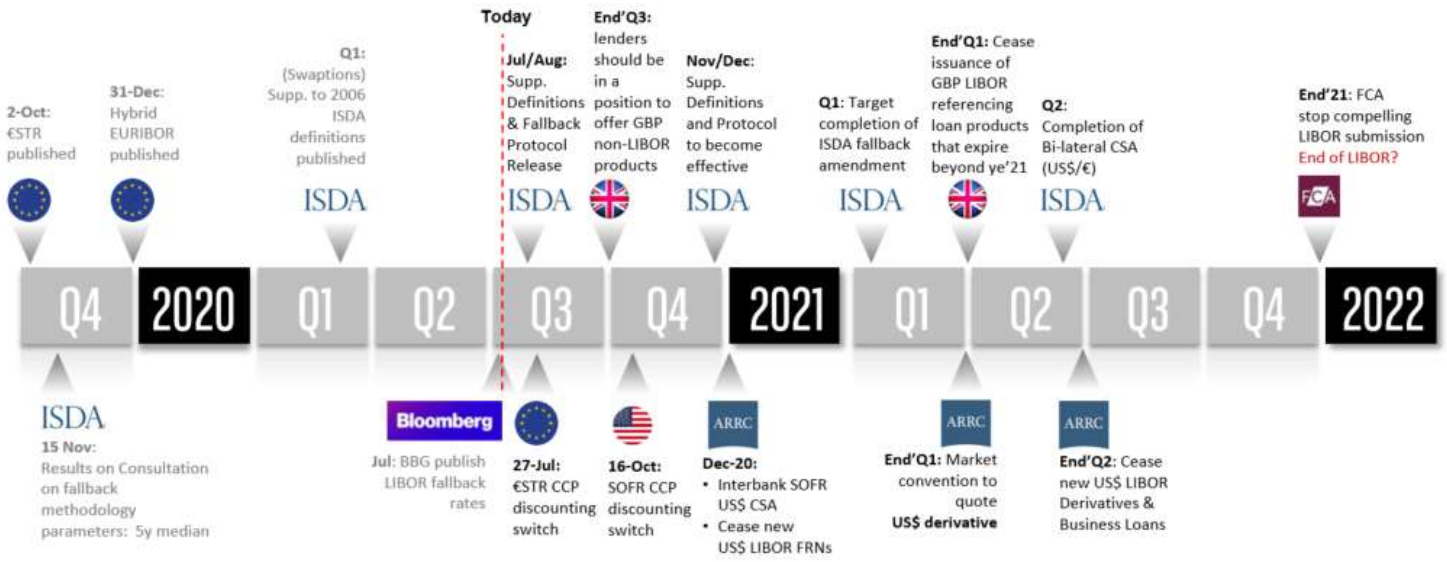
Industry groups, under the patronage of local supervisors, were set up in the various countries, including notably the US ARRC (Alternative Reference Rates Committee), and Euro Working Group on Risk-free Rates (EURO Working Group), to reform their respective IBOR rates and propose replacements and transitions.

Below are the key rates being reformed and the related alternative Risk-Free Rates (RFRs) they are intended to transition to:

	Current IBOR Rates	EURIBOR EONIA	GBP LIBOR	USD LIBOR	CHF LIBOR	JPY LIBOR
Transition	Status	Euribor move to hybrid methodology from Q2 19 – Q4 19 EMMI authorized by FSMA **Euribor has received support from authorities to continue post 21**	Move to waterfall methodology (since May until Q1 19, IBA authorised by FCA) **Market must be prepared for discontinuation after end-21**			TIBOR: reform completed in July 2017
	Risk-Free-Rates	€STR	Reformed SONIA	SOFR	SARON	TONAR
	Nature	Unsecured	Unsecured	Secured	Secured	Unsecured
	Data / Transactions source	Wholesale euro unsecured overnight borrowing costs of euro area banks	Unsecured overnight sterling transactions negotiated bilaterally and brokered in Ldn by WMBA	Tri-party repo, FICC GCF repo, FICC bilateral treasury repo	CHF repo transactions in the interbank market	Data provided by money market brokers
	O/N Rate Available	✓	✓	✓	✓	✓
	When	From 02/10/2019	From 23/04/2018	From 03/04/2018	Not new	Not new
	Transition methodology	(i) Reformed EURIBOR (ii) €STR Oct 2019 with ECB to provide one-off computation of spread between €STR and EONIA (27-Jul-20)	(i) No transition needed on SONIA (ii) Term Sonia to be developed to facilitate the transition in some cash markets (not sterling derivatives)	Paced transition plan SOFR Futures (May 2018) CCPs will accept SOFR for PAI and discounting (16-Oct-20)	Consultation on Term Rates SARON	Coexistence of TIBOR and TONAR expected
	Further key steps promoting the transition	**Transition from EONIA to €STR:** EONIA as a 8.5 bp spread to €STR from 02 Oct 19 **Term €STR** WG: OIS tradeable quotes based methodoloby recommended	**SONIA futures:** 1-m SONIA future contracts trading since Dec 17 3-m contracts since Apr 18 **Term SONIA:** Based on firm quotes on spot-starting OIS Swaps. Q3 20	**SOFR futures:** Launched in May 18 **Term SOFR:** End H1 21		

Existing LIBOR rates are administered by ICE Benchmark Administrators (IBA) to which panel banks have committed to contribute to until end-2021. To date, no panel bank has publicly stated that they will not continue to contribute rates beyond this date, but the FCA have stated that the market must prepare for this eventuality.

Below is an expected timeline of milestones defined by the US ARRC, CCPs, ISDA and other industry bodies:



Market Progress:

- The LIBOR discontinuation deadline is approaching, and the official sector has reiterated the need for a transition away from LIBOR by the end of 2021. This is despite the additional operational and market challenges generated by the COVID-19 crisis. BNP Paribas has also published LIBOR transition: Progressing despite Covid-19 Uncertainty to help in understanding some of the market impacts seen to date.
- Significant progress has been made in infrastructure development and market creation in futures, swaps, and FRNs. However, critical mass has not been achieved in building a realistic substitute for LIBOR-based market liquidity, with the exception of the UK, where SONIA has become the market standard for derivatives trading.
- There has been an expectation that 2020 is to bring meaningful catalysts for liquidity in the alternative rates markets, including changes in regulation, tax, accounting, supply & demand, and valuation methodology at the clearing houses.
- IBOR fallback methodologies are being finalized for many products, and the ease of incorporating new fallbacks varies by asset class, and market adoption of fallbacks has also been limited in some areas to date.
- The widening of the IBOR/alternative rate spreads on the back of shallow unsecured wholesale bank funding has managed to, at the same time:
  i. Highlight the inherent volatility of unsecured funding rates on which LIBOR is currently based; and
  ii. Illustrate the need for a credit sensitive component

Latest Regulatory Announcements:

- **LIBOR Death Notice**: Edwin Schooling Latter (FCA) noted on 22nd of June that the formal announcement of the timing of the end of LIBOR could happen as early as November or December this year to give markets a full year to prepare for discontinuation.
- **BMR Legislation:** On the 23rd of June, the HM Treasury announced that it intends to bring forward legislation to amend the Benchmarks Regulation (BMR) to give the FCA enhanced powers. These could help manage an orderly wind-down of critical benchmarks such as LIBOR, and, in particular, help deal with the problem of 'tough legacy' contracts:
  i. The FCA has welcomed this, see BMR Amendment Announcement. It says: "It will also seek views on the consensus already established in international and UK markets on a way of calculating an additional fixed credit spread that reflects the expected difference between LIBOR and risk-free interest rates. See also, FCA FAQ on Proposed New Powers.
  ii. The FCA is mindful of 'tough legacy' contracts and is considering how to allow LIBOR to continue after the pre-cessation period is activated, to avoid 'considerable disruption'. However, this can be achieved only after some methodological changes are adopted in the calculation of LIBOR by the IBA to make it more 'stable' and to track the fallback rates better (see FCA FAQ above): "The FCA will seek market input on feasible and robust methodology changes that would, if these powers are used, reduce the risk of published LIBOR values diverging from the value of fallbacks that come into effect in line with market consensus on how to calculate fair fallback values for LIBOR

during a pre-cessation period." How this will be achieved in practice remains to be defined, in particular to deal with the timing mismatch between the "forward looking" nature of LIBOR and the "backward looking" nature of IBOR fallbacks defined for derivatives (RFR compounded in arrears).

iii. The FCA recognises in this FAQ that it is likely that LIBOR's currencies will not transition all at the same time.

TRANSITIONING TO ALTERNATIVE RATES

1. Is BNPP ready to offer the following products referencing the new RFRs?

Type	Product	€STR	SOFR	SONIA	SARON	TONA
Derivatives	Swaps	Yes(*)	Yes(*)	Yes(*)	Yes(*)	Yes(*)
	Options	TBC	No	Yes	TBC	TBC
	Futures	No	Yes	TBC	No	No
	FRAs	Alternate product are available on RFRs [1,2]				
Cash	FRN	Yes	Yes	Yes	TBC	TBC
	ABS	Yes	Yes	Yes	TBC	TBC
	Secondary Loans	TBC	No	TBC	TBC	TBC
	Margin loans	TBC	Yes	TBC	TBC	TBC
	Repo/SLAB	TBC	Yes	Yes	TBC	TBC

(*) if cleared by the wanted CCP -> to be checked

(1) A Swaplet can be arranged but this is subject to agreement of conventions and pay-off between the two parties as an alternate to forwards (FRAs)

(2) BNP Paribas will follow what CCPs propose for Cleared FRAs

TBC – the products are awaiting agreement on market conventions, awaiting a standardization by clearing houses and/ or are currently gaining liquidity on RFRs. We can work with the client to gather their requirements in terms of conventions and agree or other necessary parameters should there be interest/ client demand in the product. We will be developing/ improving current products to match client demand on as and when basis.

***Note**: The desired actual pay-off & pricing convention would need to be reviewed case by case*

2. When are you planning to offer those products to clients and by when?

We are already trading some products as per the above table, and we plan to trade on unavailable products as soon as market liquidity is realised and some other market dependencies in terms of trade conventions etc. are available for use.

3. What is your readiness on cross currency instruments referencing RFRs?

We are operationally ready to trade cross currency swaps vs RFRs. However, the desired pay-off and pricing convention will need to be reviewed. As far as offering is concerned, that would depend on market liquidity and pricing modality, to be checked for each currency pair.

4. How will forward-looking term structures work in the new rate environment?

The alternative risk-free rates that have been chosen are daily rates and the compounded in arrears adjusted RFR a "backward looking" rate whereas LIBOR was a forward looking rate (fixed at the start of a calculation period). While the backward looking rates are seen to be appropriate for the majority of products, there are certain products where this is not the case. In order to address this, the regulators are working to provide and publish robust RFR based forward looking rates that would meet IOSCO principles and EU Benchmark Regulations requirements. Work is still ongoing but below is a brief summary of progress to date:

- When is a SONIA forward-looking rate (TSRR) expected to be published?

  Market makers are now streaming SONIA term rates on electronic platforms. TP ICAP and Tradition have partnered with ISDA (SONIA term rates administrator). These rates are currently being trialled to test if they are robust and fit for purpose and the intention is to publish them to the market once deemed robust enough. Provisional live term rates are expected in Q3 2020 for SONIA.

- When is a SOFR forward-looking rate expected to be published?

  The ARRC has set a goal of seeing a robust, IOSCO-compliant forward-looking term rate produced by a private administrator that could be used in commercial contracts once the SOFR derivatives markets that the term rate would be based on have grown to sufficient depth.

Creation of a term reference rate based on SOFR derivatives markets is only feasible once liquidity has developed sufficiently to produce a robust rate. Anticipated completion: ARRC will seek to recommend a forward-looking SOFR term reference rate by the end of 2021 H1.

5. What is the status on new GBP LIBOR-linked loans vs RFR linked loans?

The combined statement by the BoE, FCA and RFRWG, in April 2020, acknowledges that it is no longer feasible to complete transition away from LIBOR across all new sterling LIBOR linked loans by the original target timelines, Q3 2020, and thus has been delayed by 6 months to the end of Q1 2021. However, the requirement that lenders be in a position to offer non-LIBOR linked products to their customers by Q3 2020 still exists, as well as include contractual arrangements or fallbacks to facilitate conversion ahead of end-2021 to SONIA or other alternatives. See link for full statement.

6. What are the ARRC Recommendations & Best Practices?

The ARRC has developed a set of Recommended Best Practices to assist market participants in preparing for the cessation of U.S. dollar (USD) LIBOR by the end of 2021. This document sets forth recommended timelines / milestones and intermediate steps market participants can take to achieve a successful transition.

The ARRC document outlines date-based guidance on near-term transition steps across various products, including floating rate notes, business loans, consumer loans, securitisations and derivatives. See link for published best practices table listing product recommended timelines.

The Best Practices are in addition to the Paced Transition Plan which also provides specific steps and timelines designed to encourage adoption of SOFR.

7. Is there any Asia Pacific specific transition to new rates?

The direct use of LIBOR rates in APAC will result in the same qualitative impact, however there are other rates in APAC that use USD LIBOR in their calculation, or the calculation of their fallback rates. As such, there are programmes in the respective countries to factor in the prospective lack of availability of USD LIBOR as a rate, and move to alternative rates, or to transform the methodology to factor in USD SOFR instead. Below is a summary of these:

- Singapore: SOR → SORA transition using Adjusted SOR as a temporary fallback for SOR
- Thailand: THBFIX → Adjusted THBFIX
- India: MIFOR transition is to be confirmed*
- Philippines: PHIREF transition is to be confirmed*

  * As alternative rates for MIFOR and PHIREF are still to be confirmed, they may not be covered by the updated ISDA definitions and protocol discussed in FAQ 8 below

8. What is the timeline for the updated ISDA fallback definitions and protocol?

The final form of a Supplement to 2006 ISDA Definitions providing revised floating rate option (FRO) IBOR definitions incorporating comprehensive fallbacks and a Protocol to apply those FROs to existing transactions are expected to be published in July/August 2020, using a methodology agreed following market consultations conducted by ISDA commencing in 2018 and continuing to date, (see ISDA Benchmark Reform and Transition from LIBOR).

These new definitions are intended to be effective on a date 4 months after publication (expectation could therefore be to be effective by November/December 2020) as part of a "big bang" approach to the application of the Protocol even though we do not expect universal adoption.

9. What is a pre-cessation event and what does a pre-cessation trigger provision mean for my trades that fall under the revised IBOR FRO definitions?

"Pre-cessation" is a feature of the revised FROs that applies in the event that a competent authority (the FCA for LIBOR for example) declares an IBOR to be no longer representative. Following such a declaration, the rate fallback would be activated at a given date and the reference rate in contracts that are covered by the revised FROs will be transitioned to the specified ISDA fallback rate (i.e. the compounded in arrears adjusted RFR, as per ISDA methodology, see link, even while the unrepresentative LIBOR continues to be published.

This additional fallback trigger that will be included with the permanent cessation trigger, along with the methodology chosen to determine the ISDA fallback rate, may not be always consistent with the fallback arrangements reflected in contractual documentation of cash products (e.g. loans, bonds etc.) to which a derivative acts as a hedge, meaning that there is a risk of disconnect and loss of hedge efficiency.

10. Will BNP Paribas sign up to the ISDA protocol for legacy LIBOR transactions?

Yes, we intend to sign up the ISDA protocol to introduce the new ISDA fallbacks in our legacy derivatives transaction portfolio. Accordingly we will reach out to our transaction counterparts in the coming months.

However, please note that the ISDA fallback rates may not be compatible with certain transactions (such as non-linear derivatives), or may not be in-line with the fallback of the related cash product as explained in question 9. Although we are proactively reaching out to our counterparts on the modalities of the transition and are trying to anticipate such situations where they may need to carve out transactions (specific transactions can be excluded from the Master Agreement via bi-lateral agreement) from the coverage of the ISDA protocol, the ability to transition to ISDA fallback rates may depend among other things on our counterpart's operational ability to switch to the compounded in arrears adjusted RFR. Therefore we encourage our clients to review their portfolio in view of those new ISDA standards and to reach out to us to discuss their situation.

Cleared - CCP Discounting Switch

11. What is the impact of the upcoming CCP discounting switch on Swaptions?

The upcoming Central Counterparty (CCP) discounting switches will raise specific issues for swaption products if the exercise date of these contracts is after the CCP transition date. Particularly given that since the contracts are bi-lateral, the CCP compensation mechanism will not apply in the case of any valuation transfers.

Public consultations were held by the ARRC and EURO Working Group to gather feedback on whether the committees should recommend voluntary compensation for legacy Swaptions that are impacted by the CCP discounting switch to RFRs.

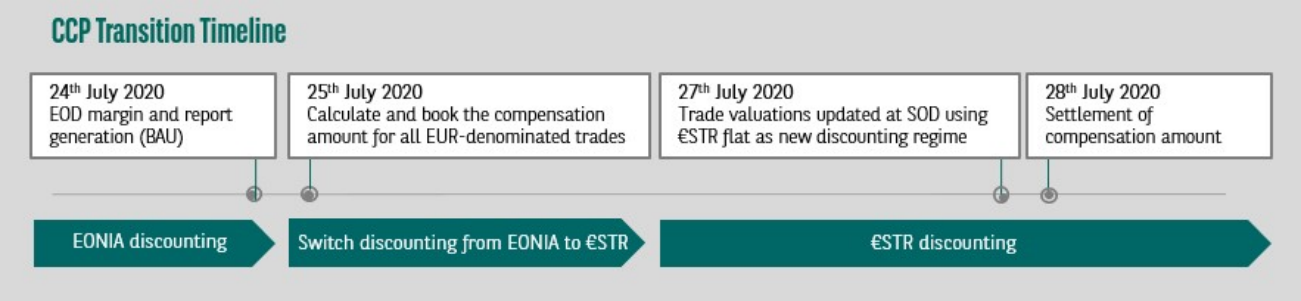
Both the ARRC and EURO Working Group consultations broadly supported a recommendation that bilateral counterparties to legacy swaption contracts voluntarily exchange compensation. Working groups are now discussing how this will work in practice.

However questions have been raised about the efficiency of a Working Group recommendation in implementing a voluntary compensation process, if such compensation process cannot be enforceable in bilateral contracts without further intervention from the regulator.

- See link for Euro WG consultation results and link for the working group's recommendations
- See link for ARRC announcement

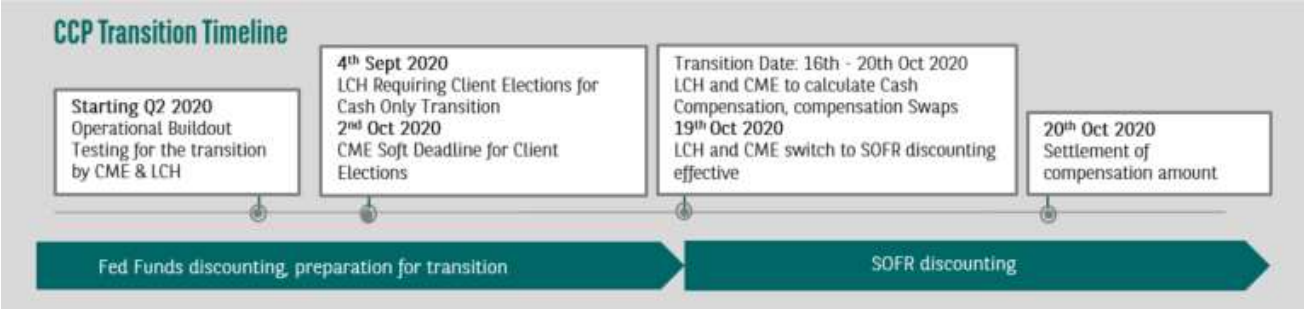
12. What is the impact of the discounting switches for our cleared derivatives portfolio?

€STR



- How will clients be impacted by the CCPs transition to €STR discounting?
  - The transition to €STR discounting will result in a change to the net present value (NPV) of all EUR-denominated cleared trades. To counter this valuation change, the CCPs will apply cash compensation payments calculated as the differential between the present value of cashflows under EONIA versus the €STR discounting regime (future cashflows held constant). No other form of compensation (i.e. swaps) will be offered by the CCPs.
- Will clients have the option to elect out of the cash compensation process?
  - Cash compensation will be mandatory, clients will not have the option to elect out of the process.

SOFR



- How will clients be impacted by the CCPs transition to SOFR discounting?
    - The transition to SOFR discounting will result in a change to the net present value (NPV) of all USD-denominated cleared trades. To counter this valuation change, the CCPs will apply cash compensation payments calculated as the differential between the present value of cashflows under Fed Funds versus the SOFR discounting regime (future cashflows held constant). The CCPs will also offer a swap compensation to adjust the risk back to Fed Funds discounting, each will be offering clients the ability to either opt out or close out that swap during the transition process.
- Will clients have the option to elect out of the cash and/or swap compensation process?
    - Cash compensation will be mandatory, clients will not have the option to elect out of the transition. While the CCPs have slightly different approaches for handling the swap compensation process, both will facilitate an auction for clients to liquidate unwanted compensation swaps.
    - If clients wish to participate to bid on swaps in the auction, they must coordinate directly with the clearing houses:
        - LCH Ltd (SwapClear): Clients will have the option to opt out of the risk compensating swaps and an auction process will be conducted prior to booking of the compensatory swaps to client/member accounts. Clients who opt out of the swaps will be expected to pay any difference between the mid-price established in the auction process and the final bid price on which the PTF was auctioned at. The cash final results of the auction will be used to derive the SOFR curve upon which all other compensation calculations will be addressed through a Cash Settlement Process (CSP). If the auction fails (see CCP materials for scenarios), it is possible for clients to still receive swaps as compensation.
        - CME Clearing: It is mandatory for clients to receive the risk replacement swaps as part of the transition, however clients will have the ability to elect i) how they would like to receive the swaps and ii) if they would like them to be included in the auction being offered post the transition process. Clients will receive swaps over the transition weekend into their accounts. On Monday of the transition, 19 October, for those clients who have elected to participate an auction process will occur and the cash movements resulting will be processed.

Uncleared – OTC Contracts & Repapering

13. How do you intend to deal with the end of EONIA for end-2021 in transaction documentation, including Credit Support Annexes (CSAs)?

We will propose to our counterparts to use newly revised ISDA definitions and "EONIA (collateral rate)" effectively maintaining continuity, as EONIA has been converted to €STR+8.5bp. CSAs which have been repapered this way ahead of the deadline will then continue referencing the same discounting rate after 31st December 2021. Further discussions with clients requesting a switch to €STR flat + Compensation will be required since any Compensation will need to be agreed via bilateral negotiation.

14. When do you plan to engage with us on this repapering?

We plan to start reaching out to our counterparts on EONIA repapering in September 2020.

15. What can I do to get prepared?

The implications of this transition are pervasive and will have impacts on your risk exposures as well as your system infrastructure and technology. If not already doing so, we recommend that you should identify and assess your exposures to LIBORs and EONIA. You should consider what risks or exposures can be transferred from LIBOR to RFRs. New LIBOR linked transactions should insert fallback clauses referencing RFRs (as found in the revised ISDA FROs) to ensure contractual continuity.

Robust fallbacks and adherence to the ISDA Fallback Protocol should only be regarded as a safety net and the voluntary conversions of legacy transactions from LIBOR to RFR is considered the favoured approach to reduce your exposure and for a smooth transition. This will also mitigate any risks that may arise from different LIBOR fallbacks (legacy or new) across asset classes and jurisdictions, particularly where, for example, you have executed derivatives as hedges to FRNs, loans or securitisations. This is important as there is no assurance that the composition or characteristics of any such RFRs following LIBOR discontinuation will be similar to or produce the same value or economic equivalence as LIBOR and that it will have the same volume or liquidity, as did LIBOR prior to its discontinuation.

As LIBOR and RFRs are different in nature, it is likely that you will need to adapt your own information technology and financial system to handle products that will reference compounded in arrears rates in the new regime. Banks and financial institutions are actively preparing for this shift to be ready in due course, but it is likely that all end-users systems and processes need to be adapted accordingly. It is important to begin to assess the potential impact on your infrastructure, systems and processes, and to engage with 3rd party providers and vendors that will help you through the transition.

BNP Paribas is committed to helping our clients manage the benchmark transition process. We are reviewing client positions and taking steps to ensure fair outcomes for clients and to meet regulatory expectations with regard to market integrity. Please contact your BNP Paribas representative with any questions or regarding voluntarily conversion of any of you legacy LIBOR-linked products to RFRs

16. How will the transition affect front-to-back processes in financial institutions?

The US ARRC have released a document covering transition activities into the following categories, with one-page summaries for the sub-topics covered within each:

- Product and Business Development
- Trading and Brokerage
- Client Servicing
- Trading Risk Management
- Data Management
- Operations
- Risk Controls
- Financial Controls
- Legal and Compliance
- Information Technology

There is also a Practical Implementation Checklist for SOFR Adoption from the US ARRC.

17. Do you have client material that you can share with us to help us understand your plans and decisions on some key topics of the transition?

Below are links to useful industry/working groups' websites where detailed information is provided on the ongoing IBOR reform:

- JPY: Study Group on Risk-Free Reference Rates & Bank of Japan Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks

- EURO: Working group on Euro Risk-Free Rates
- GBP: Working group on Sterling Risk-Free Rates
    i. SONIA: Factsheet
- USD: Alternative Reference Rates Committee
- CHF: National Working Group on Swiss Franc Reference Rates
- AUD: Reserve Bank of Australia Market Operations Resources
- CAD: Canadian Alternative Reference Rate Working Group
- SGD: Steering Committee for SOR Transition to SORA

Additional links to regulators and trade organisations:

- US ARRC: US Alternative Reference Rates Committee (ARRC)
- ISDA Website: Benchmark Reform and Transition of LIBOR
    i. ISDA FAQ: Fallback Factsheet
    ii. ISDA Research Note: Major Developments in 2020
    iii. ISDA Brochure: Benchmark Reform at A Glance
- FCA: Transition from LIBOR
    i. UK Government Announcement: Amendment's to BMR
- GFMA: GFMA IBOR Transition
    i. GFMA IBOR Materials June 2020 (Detailed transition timeline across currencies)

Below are links to selected BNPP client communications that have been communicated previously. While this is a standalone document, this FAQ has aimed to build on previous communications and thus not all topics have been covered to the same detail again:

- Whitepaper – May 2019: Benchmark transition: From IBORs to Risk-Free Rates
- Markets 360 – February 2020: IBOR Reform – Frequently Asked Questions
- Markets 360 – May 2020: LIBOR transition: Progressing despite Covid-19 Uncertainty

Disclaimer

This document has been prepared in good faith by BNP Paribas. This document is provided to you by BNP Paribas or any of its affiliates for informational purposes only, is intended for your use only and may not be quoted, circulated or otherwise referred to without BNP Paribas' express consent. This document is not a research report or a research recommendation and does not constitute a personal recommendation. This document should not be considered as an offer or a solicitation to engage in any trading strategy or to purchase or sell any financial instruments or offer any clearing or other services. The information and opinions contained in this document have been obtained from sources believed to be reliable, but BNP Paribas makes no representation, express or implied, that such information and opinions are accurate or complete. In any event, information in this publication is intended to provide only a general outline of the subjects covered. This material is not intended to provide, and should not be relied on for, legal, tax, accounting, regulatory or financial advice. Other financial institutions or persons may have different opinions or draw different conclusions from the same facts or ideas analysed in this document. No BNP Paribas Group Company accepts any liability whatsoever for any direct, indirect or consequential loss arising from any use of material contained in this document.

BNP Paribas does not provide legal or regulatory advice and, in all cases, recipients should conduct their own investigation and analysis of the information contained in this document and should consult their own professional advisers.

BNP Paribas, incorporated in France with Limited Liability (Registered Office: 16 boulevard des Italiens, 75009 Paris, France, 662 042 449 RCS Paris,www.bnpparibas.com) is authorized and supervised by European Central Bank (ECB) and by Autorité de Contrôle Prudentiel et de Résolution (ACPR) in respect of supervisions for which the competence remains at national level, pursuant to Council Regulation n° 1024/2013 of 15 October 2013 conferring specific tasks on the ECB concerning policies relating to the prudential supervision of credit institutions.

BNP Paribas London Branch

10 Harewood Avenue, London NW1 6AA; tel: +44 20 7595 2000; fax: +44 20 7595 2555- www.bnpparibas.com. Incorporated in France with Limited Liability. Registered Office: 16 boulevard des Italiens, 75009 Paris, France. 662 042 449 RCS Paris. BNP Paribas London Branch is lead supervised by the European Central Bank (ECB) and the Autorité de Contrôle Prudentiel et de Résolution (ACPR). BNP Paribas London Branch is authorised by the ECB, the ACPR and the Prudential Regulation Authority and subject to limited regulation by the Financial Conduct Authority and Prudential Regulation Authority. Details about the extent of our authorisation and regulation by the Prudential Regulation Authority, and regulation by the Financial Conduct Authority are available from us on request. BNP Paribas London Branch is registered in England and Wales under no. FC13447.