BENCHMARK TRANSITION CONFERE

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Please refer to important information at the end of this report

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LIBOR REFORM 101

***Why*? Regulators want to move away from a benchmark based on the unsecured term funding market**

- Potential for manipulation
- Over-reliance on ‘expert opinion’ (‘level 3 submissions’) relative to actual transactions
- Unsecured funding market has become too thin, especially during times of market stress
- Contributing banks may announce their departure from the LIBOR panel

***Solution*? Replace the LIBORs with solid fallbacks, based on overnight Risk Free Rates (RFR).**

- Determine a fixed credit spread using a 5 year look-back window for each LIBOR
- Add it to the compounded RFR that fixes in arrears
- Cashflow will be known near or at the end of accrual period
- Replacement RFR: GBP: SONIA, USD: SOFR, CHF: SARON, JPY: TONAR

***When*? Once FCA deems LIBORs no longer to be ‘representative’ as of some future date**

- Such pre-cessation declaration will likely fix the fallback spread
- Possible announcement date: December 2020
- Will require widespread adoption of ISDA Protocol
- Targeted transition date: end of 2021
- FCA to be given new powers to aid the transition and to deal with ‘tough legacy contracts’

***Which* products are affected? Everything LIBOR-linked:**

- Derivatives
- Loans
- Bonds

LIBOR PANEL BANKS: HOW MANY WILL LEAVE BY YEAR END 2021?

	USD	GBP	EUR	CHF	JPY
Bank of America N.A. (London Branch)	1				
Barclays Bank plc	1	1	1	1	1
BNP Paribas SA (London Branch)		1			
Citibank N.A. (London Branch)	1	1	1	1	
Cooperatieve Rabobank U.A.	1	1	1		
Crédit Agricole Corporate & Investment Bank	1	1			
Credit Suisse AG (London Branch)	1		1	1	
Deutsche Bank AG (London Branch)	1	1	1	1	1
HSBC Bank plc	1	1	1	1	1
JPMorgan Chase Bank, N.A. (London Branch)	1	1	1	1	1
Lloyds Bank plc	1	1	1	1	1
Mizuho Bank, Ltd.		1	1		1
MUFG Bank, Ltd	1	1	1	1	1
National Westminster Bank plc	1	1	1	1	1
Royal Bank of Canada	1	1	1		
Santander UK Plc		1	1		
Société Générale (London Branch)		1	1	1	1
Sumitomo Mitsui Banking Corporation Europe Limited	1				1
The Norinchukin Bank	1				1
UBS AG	1	1	1	1	1
total	**16**	**16**	**15**	**11**	**12**

Source: IBA (https://www.theice.com/iba/libor)

Representativeness is key: When a panel bank announces its departure from the panel, the 2016 EU Benchmark Regulation states that the administrator (IBA for LIBOR) and the Regulator (FCA for LIBOR) have to make an assessment of whether the IBOR remains 'representative of the underlying market. Failing this test could lead to activation of fallbacks; the so called 'pre-cessation' event.

FCA may choose reverse psychology: Rather than waiting for banks to declare their intention to quit the panel, the FCA may say that the end of compulsion beyond 2021 is in itself an argument for triggering pre-cessation. Banks will then likely declare that they'll pull out, as most will not want to contribute to an unrepresentative LIBOR panel.

POTENTIAL BOTTLENECKS FOR LIBOR TRANSITION

ISDA and FCA are getting ready

- ISDA is including pre-cessation as well as a cessation language into the updated 2006 Definitions and the legacy trade Protocol
- Publication is due during September 2020, and effective date is November 2020
- Fallbacks to be determined on pre-cessation event, rather than on actual cessation
- FCA: announcements about the discontinuation from the end of 2021 of LIBOR settings could come as early as November or December 2020 (Edwin Schooling Latter, 22 June 2020)
- Encouragement to restructure to Sonia via higher haircuts. Prohibition to issue LIBOR-linked loans after Q1 2021 (delayed by 6 months due to Covid)

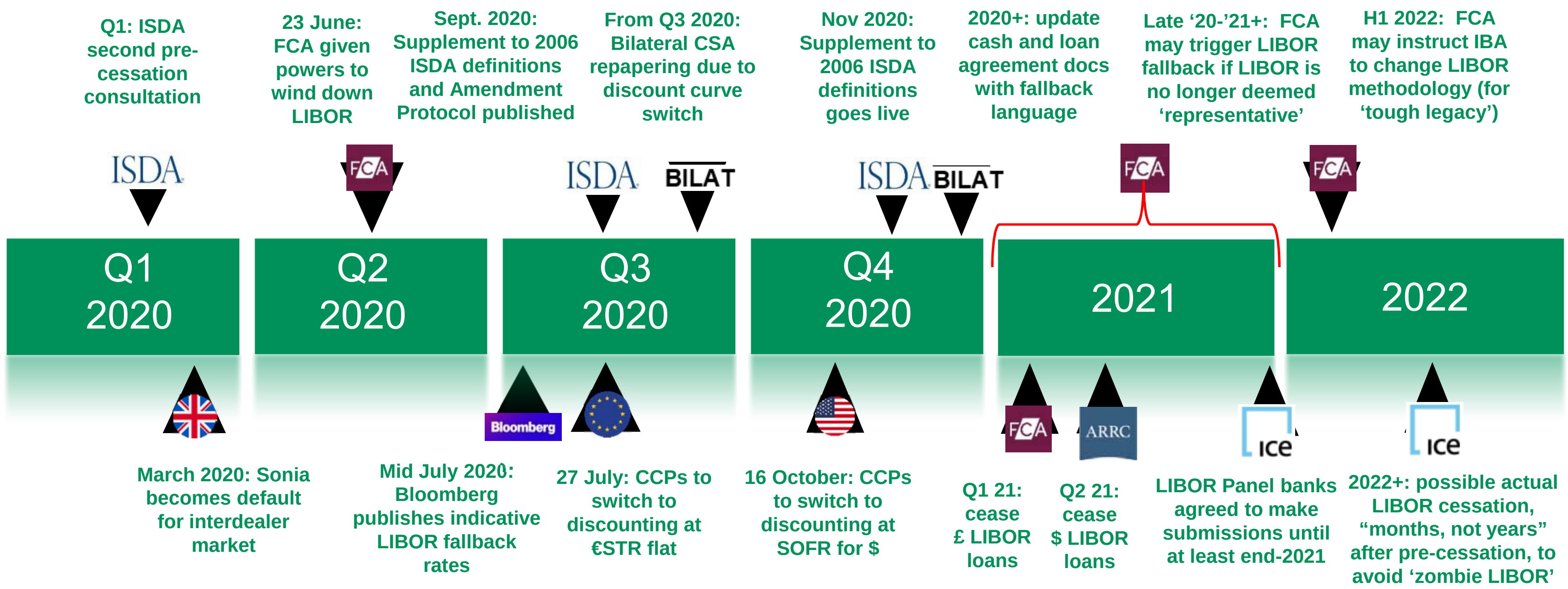
Market may not be ready

- Adoption of ISDA’s legacy trade Protocol is voluntary. Before adoption, a clear inventory needs to be made of transactions where the Protocol doesn’t provide an adequate solution, for example because they hedge cash or loan products that cannot easily be repapered (the so called ‘tough legacy contracts’).
- These transactions pose hedge accounting challenges and will need to be carved out before Protocol adoption.
- Payment and operational systems need to be updated to deal with new accrual methods, etc.

Solutions wanted before LIBOR disappears

- Banks: the loss of transmission of term unsecured funding costs to loan clients
  - NY Fed: ‘Credit Sensitivity Group’ to look into solutions, for USD (e.g. USD Bank Yield Index). May not work.
- No forward looking OIS fixings available yet (e.g. for inter-company loans, FRAs, Cap/Floors)
  - Initiatives are underway to create robust forward looking RFR. Sonia: Q3 2020, SOFR: H1 2021.
- Avoid erratic ‘Zombie LIBOR’ for tough legacy contracts during pre-cessation period
  - New powers to FCA and market consultation on how to amend IBA’s LIBOR calculation; to start in Q3 2020. This ‘Legacy’ LIBOR may well be a hybrid between forward looking RFR + fallback spread

INDICATIVE LIBOR TRANSITION TIMELINE



Sources: ISDA, ECB, FCA, EUREX, LCH, CME, ARRC, BNP Paribas

New trades:

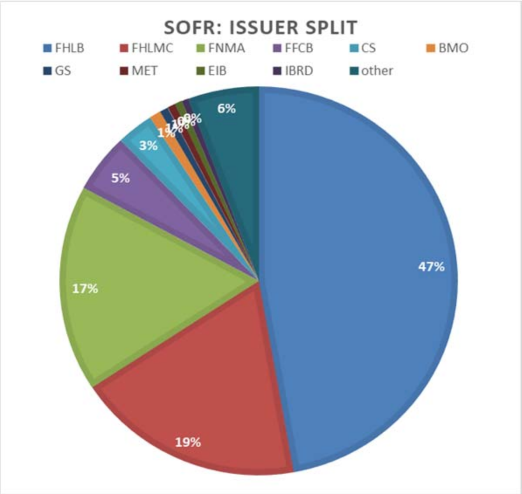
- **Supplement to the 2006 ISDA Definitions:** ISDA will amend its 2006 Definitions to implement new fallbacks for LIBOR in USD, GBP, JPY, CHF, EUR, AUD in a Supplement. The fallback language of the updated 2006 ISDA Definitions will start to apply to any new transactions that are entered into from about four months after publication

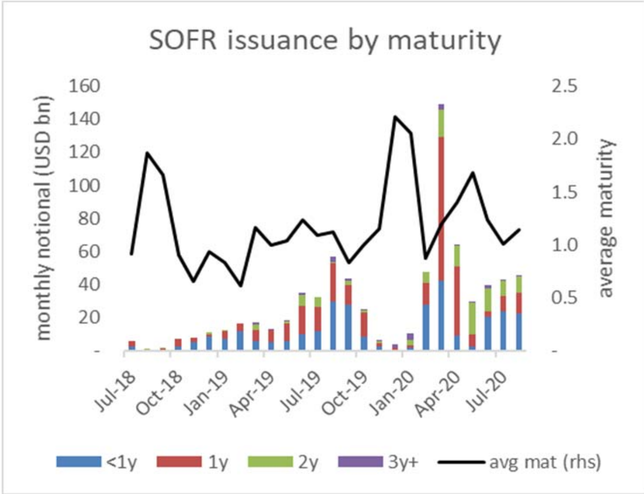
Legacy trades:

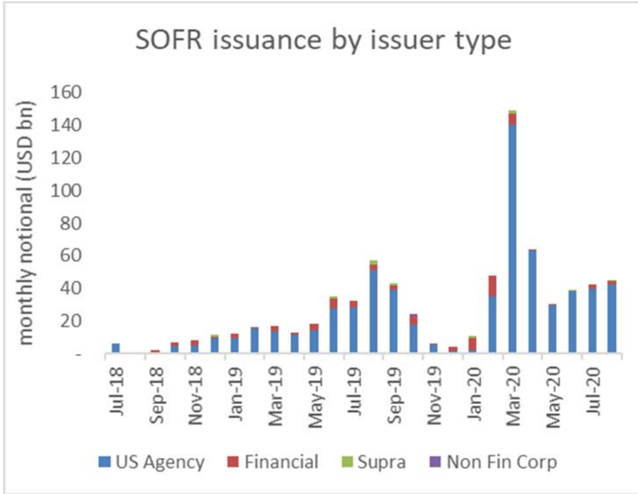
- **Protocol:** ISDA expects to publish a protocol to facilitate the inclusion of the amended definitions into legacy derivatives contracts
- Adhering to the protocol is optional, but should see widespread adoption. The protocol will only amend contracts between two adhering parties

SOFR AND SONIA ISSUANCE: STEADY MARKET GROWTH; €STR IS LAGGING (ONLY EUR4BN ISSUED, 7 DEALS)

Top 10 SOFR issuers: govt. agencies are over-represented. USD743bn, 780 deals.



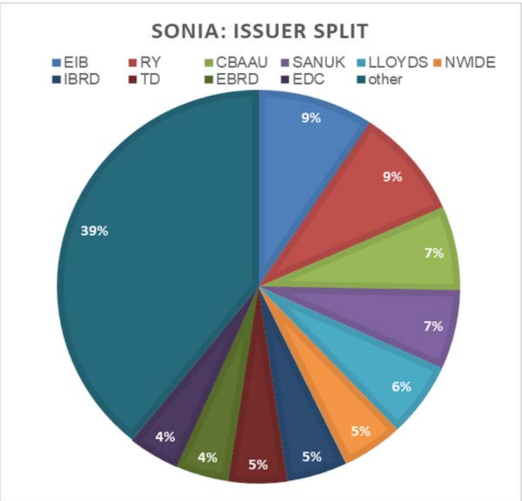


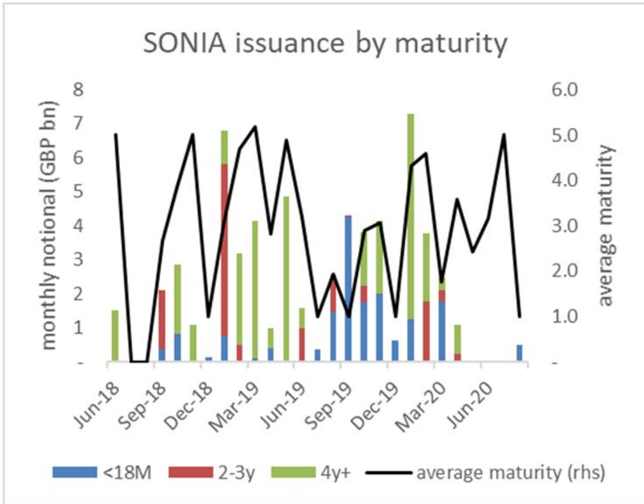


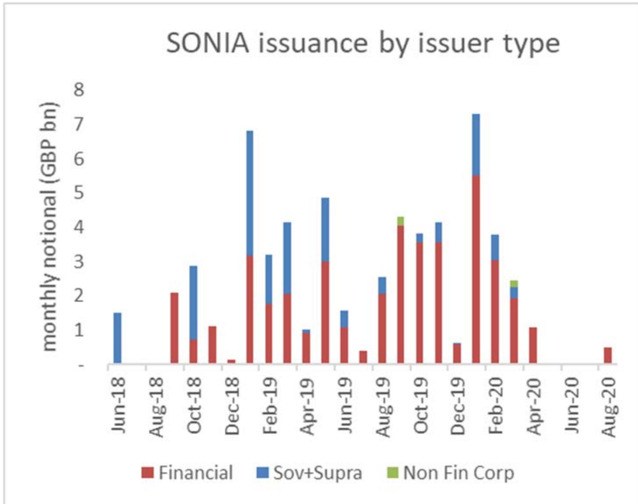
Sources: Bloomberg, BNP Paribas. Up until 31 August 2020

Sources: Bloomberg, BNP Paribas

Top 10 Sonia issuers: a wide array, mostly financials. GBP 60bn, 139 deals. Market paused during summer of 2020..







Sources: Bloomberg, BNP Paribas. Up until 31 August 2020

Sources: Bloomberg, BNP Paribas.

EURIBOR HAS STRONG SUPPORTERS, BUT THERE ARE NO GUARANTEES

Strong support from the Working Group, strong support from the European Commission:

- “The European Commission reiterated the importance of the EURIBOR being authorised by the end of 2019, as maintaining a euro term rate was in the public interest, especially given the EURIBOR’s key role in the European retail and mortgage sectors”;
- “In this regard, the ability to impose mandatory contributions for five years (as opposed to two) showed that the public interest imperative was being taken seriously.”
- The European Commission also expressed confidence that, with the necessary reforms, the EURIBOR had good medium-term prospects and said that contributors should recognise the value of joining its panel
- The Working group’s working assumption was that the EURIBOR would become BMR-compliant once the hybrid methodology has been finalised in the second half of 2019 and that EMMI would become an authorised benchmark administrator for the EURIBOR. This has been achieved as of January 2020
- The Chair also agreed that non-contributing banks should join the EURIBOR panel in order to support the robustness and sustainability of the EURIBOR. **18** Banks are currently on the panel

Reassuring stance from the FSMA:

- “FSMA’s earlier conclusion that the EURIBOR’s reformed methodology provided a solid basis for a robust EURIBOR”

Banks: don’t try to fix something that isn’t broken:

- Transmission of unsecured funding costs to loanbook is a valuable feature
- Euribor is deeply embedded in numerous products (e.g. mortgages), and used for discount purposes (e.g. EIOPA)

Caveat 1: Banks may become too reliant on **secured** term funding, (e.g. ECB TLTROs), causing volatility in Euribor fixings

Caveat 1: Liquidity may eventually migrate to €STR, especially if regulation mandates it

In July, the ECB castigated banks for not sufficiently preparing for the possible scenario of the disappearance of Euribor.

In sum: we must consider the possibility that Euribor may not last forever in its current form

Sources: ECB RFR Working Group

ISDA: IMPLEMENTING ROBUST FALLBACKS IN DERIVATIVES CONTRACTS

Result of ISDA's fallback consultations (2018, 2019):

TERM ADJUSTMENT		**CREDIT SPREAD ADJUSTMENT**		**FALLBACK RATE FOR IBOR**
(to be calculated on an ongoing basis) **Compounded Setting in Arrears Rate** = Daily compounding of RFR observed throughout the IBOR period	+	**(to be calculated as of the day before the fallback is triggered – then frozen)** **Historical median approach** = Average of spot IBOR vs term RFR spreads over a 5 year period (5y Median)	=	

Source: ISDA

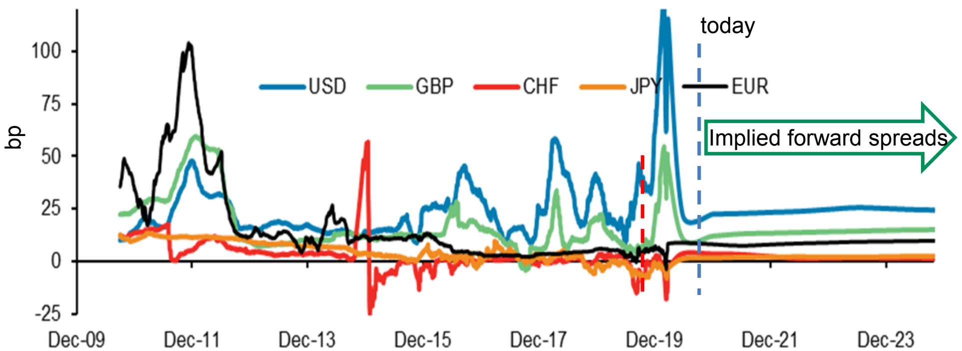
The results are in: 5 year historical Median!

- Strong support for 5y median over 10y mean prevailed
- Median naturally trims outliers, it tends to lead to lower spreads than mean
- Consistency across IBORs deemed important
- No transition period, i.e. no gradual implementation of fallback spreads
- Negative spreads to be included in the fallback spread calculation

Regarding Risk Free Rate:

- Backward shift: 2 business days to allow time for coupons to be determined before payment date

3m IBORs – OIS spread history (compounded, fixing in arrears)



Sources: Bloomberg, BNP Paribas

FALLBACK SPREAD ESTIMATES: LIMITED IMPACT FROM COVID

Market implied IBOR-OIS spreads, with BNP 5y Median estimate

vs	3m GBP **Sonia**	6m GBP **Sonia**	1m Eurib **Eonia**	3m Eurib **Eonia**	6m Eurib **Eonia**
22-Jun-25	14.2	22.7	2.5	9.0	15.6
YE24	13.6	22.6	2.0	8.5	15.3
22-Jun-24	12.9	22.5	1.4	7.9	14.9
YE23	12.7	21.8	1.1	7.4	14.1
22-Jun-23	12.4	20.9	0.7	6.8	13.2
YE22	11.8	20.6	0.3	6.2	12.7
22-Jun-22	11.1	20.2	-0.1	5.4	12.1
YE21	11.6	22.7	-0.6	5.1	12.4
22-Jun-21	12.2	25.5	-1.1	4.7	12.9
YE20	12.1	25.8	-1.0	4.7	13.3
22-Jun-20	12.1	26.0	-0.8	4.5	12.8
YE21 est. as of 29 Nov 19	12.4	22.7		5.8	13.2
5y5y bor/ois implied	15.5	25.7	4.8	10.3	14.4
10y5y bor/ois implied	15.3	25.9	4.4	9.1	8.4

Sources: Bloomberg, BNP Paribas calculations as of 22 June 2020

ISDA FALLBACKS – ROADMAP

MANDATES OF ISDA WORKING GROUPS

01 IDENTIFY TRIGGERS FOR FALLBACK RATES

02 SELECT FALLBACK RATE(S) AND MECHANISMS

03 DRAFT AMENDMENTS TO THE 2006 ISDA DEFINITIONS

04 DEVELOP PLAN TO AMEND LEGACY CONTRACTS REFERENCING IBORS

https://www.isda.org/2020/05/11/benchmark-reform-and-transition-from-libor/

TARGET TIMING FOR FALLBACK IMPLEMENTATION

- Publication of Bloomberg indicative fallback rates: **Completed (July 2020)**
- Launch of amendments to the 2006 ISDA definitions and related protocol: **September 2020** (or later date after positive feedback from the US DoJ and relevant competition law authorities, to the proposal submitted in July 2020).
- “Adherence in escrow”: ISDA will provide **2-4 weeks notice of the official launch date** and later effective date, and offer the possibility to adhere via a private link prior to the launch date. Adherence will not appear/be effective until the official launch date – Aim is to show wide take up / mitigate “wait and see” by showing upfront wide adherence
- Effectiveness of amendments to the 2006 ISDA Definitions and related protocol: **Late 2020/Early 2021** (or 2-4 months after publication)

ISDA FALLBACKS – FAQ

How can I adopt the new fallbacks?

- ISDA will publish a Supplement amending the 2006 ISDA definitions to incorporate the new fallbacks. These changes will **automatically apply to new trades** executed on or after the Supplement effective date
- ISDA will also publish a **protocol** to enable market participants to incorporate the revisions into their **legacy trades** with counterparties that also opt to adhere to the protocol
- Parties can also agree to incorporate the new fallbacks in legacy trades by **bilateral agreements**
- **Clearing houses** will amend their rulebooks to implement the fallbacks in all their legacy cleared trades as of the effective date.

What will trigger the fallback provisions?

- Fallback mechanisms will apply in the event that the applicable **IBOR is permanently discontinued** or the applicable **LIBOR has been determined by the FCA as being no longer representative** even if it continues to be published (“pre-cessation”)

What rates are covered:

- LIBORs: USD, GBP, CHF, EUR, JPY
- BBSW (Australian Dollar AUD)
- CDOR (Canadian Dollar CAD)
- EURIBOR (Euro)
- HIBOR (Hong Kong Dollar HKD)
- Euroyen TIBOR, TIBOR (Japanese yen JPY)
- SOR (Singapore Dollar Swap offer rate) *
- THBFIX (Thai Baht Interest rate fixing) *

Where can I find the fallback rates?

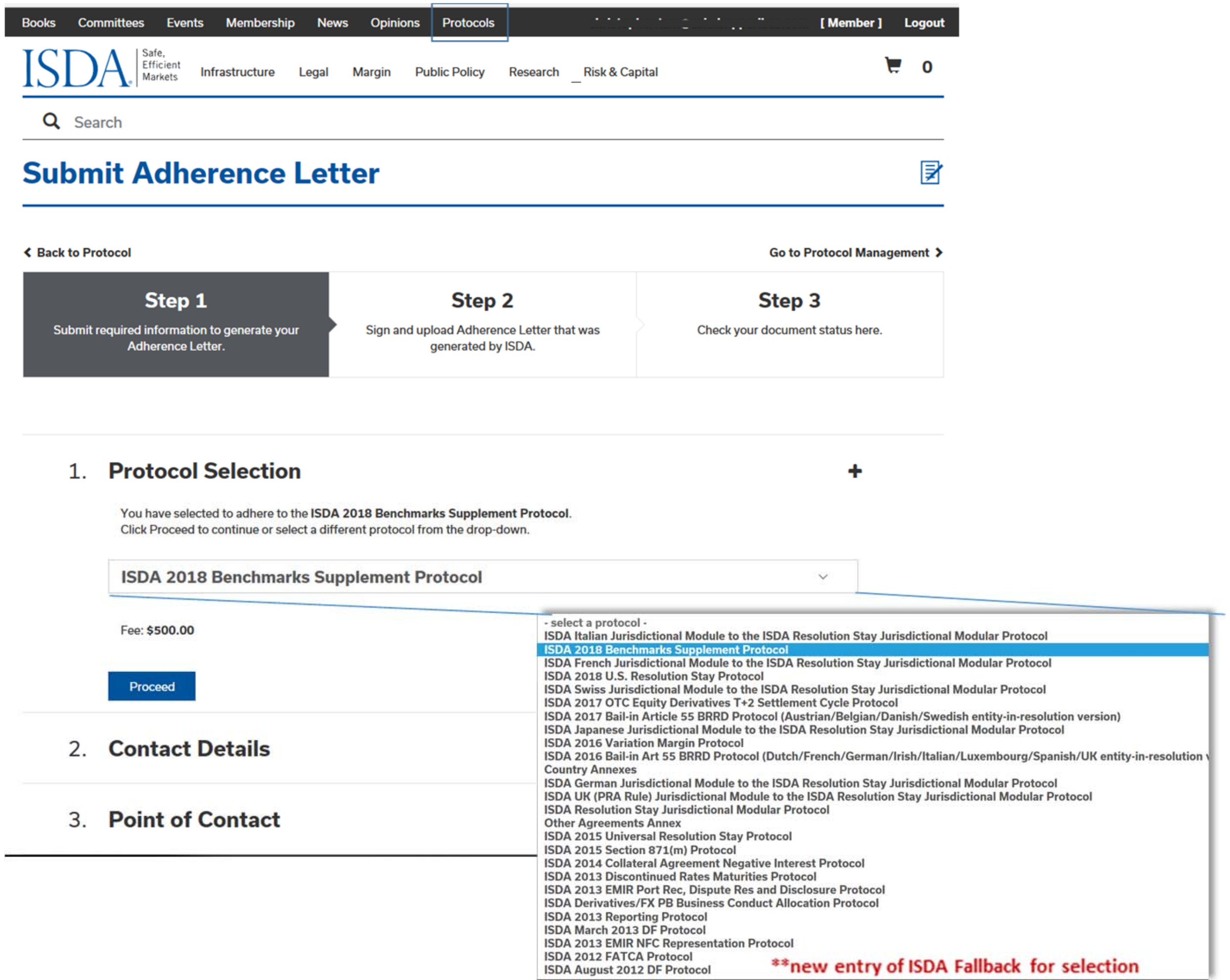
- Indicative(*) fallback rates are being published by Bloomberg since 17th July (Bloomberg IBOR Fallback Rate Adjustments FAQs)
- Fallbacks to SOR and THBFIX will be published respectively by ABS Benchmarks Administration Co Pte. Ltd and Bank of Thailand.

(*) The actual fixing of the fallback rate will not take place until the actual discontinuation trigger (permanent or pre-cessation trigger)
(**)As USD LIBOR is an input to SOR and THBFIX, the IBOR Fallbacks Supplement includes new fallbacks to those rates in the event of permanent cessation or “pre-cessation” of USD LIBOR

ISDA FALLBACKS – FAQ

How in practice do I adhere to and implement the IBOR Fallback Protocol?

- Access to the “Protocols” section of the ISDA website at www.isda.org and select the ISDA IBOR Fallback option that will be soon be made available
- Enter the information that is required to generate a form of Adherence Letter.
- Sign and upload it as a PDF attachment in the Protocol system
- Once the Adherence Letter accepted by ISDA, you will receive an e-mail confirmation of adherence to the protocol
- Adherence is public



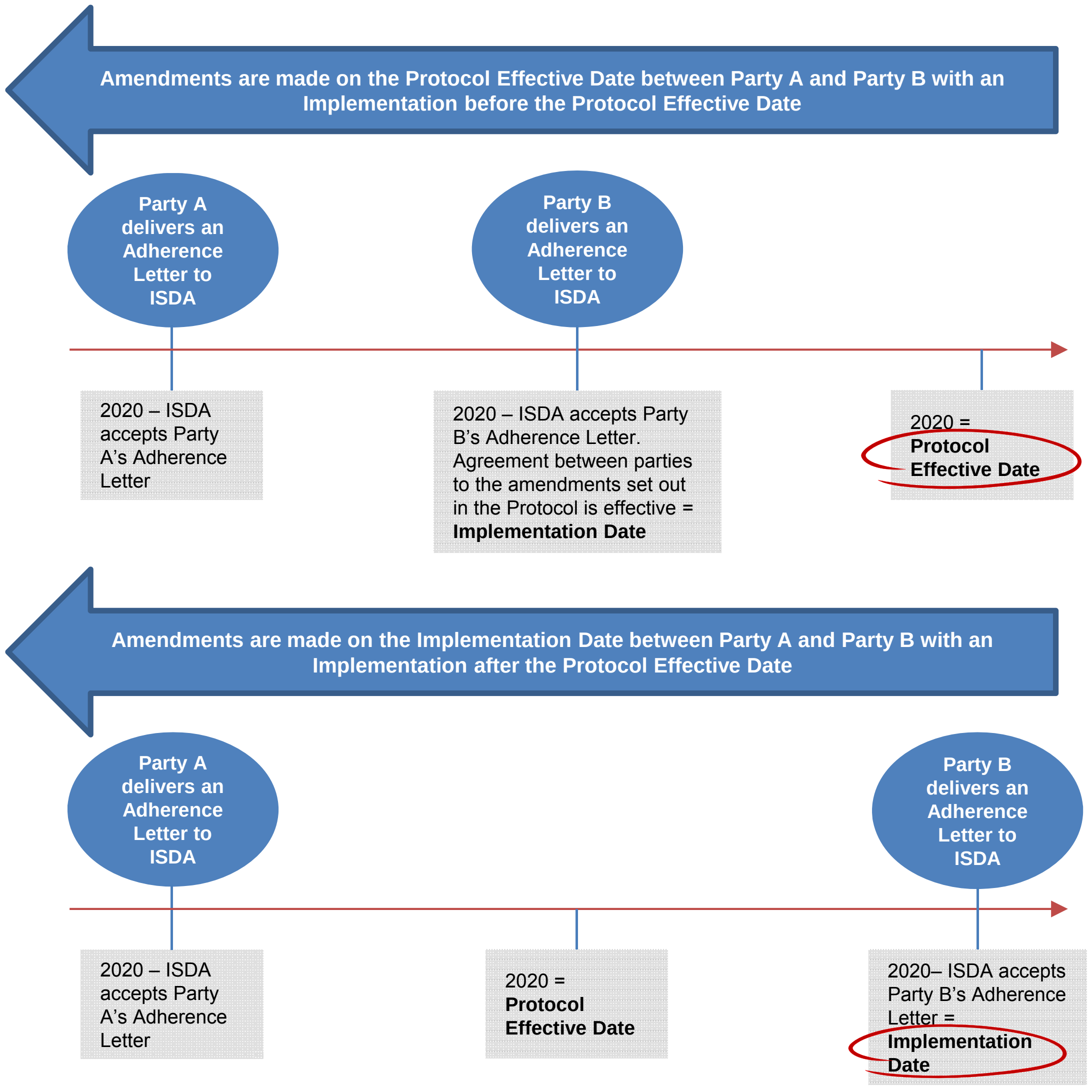
Cost

- ISDA Primary Members: One time fee of USD 500
- Non ISDA Primary Members: no fee if they submit prior to the Protocol Effective Date / USD 500 if they submit after the Protocol Effective Date

ISDA FALLBACKS – FAQ

When will the protocol amendments be effective?

- The later of the Implementation Date and the Protocol Effective Date.
  - The Protocol Effective Date is the date on which all the protocol adherences completed in the period up to that date will be implemented and become legally effective. It is designated by ISDA to allow a "big bang implementation between all the parties that have signed up during the period (expected to be 2-4 months).
  - The Implementation Date will be date on the later of a pair of protocol adherents completes its adherence.



ISDA FALLBACKS – FAQ

What documents are covered by the IBOR Fallbacks protocol?

- The range of documents within scope is broad.
- covers transactions that incorporate or reference a rate reference from the 2006 Definition (or one of the predecessors to the 2006 ISDA Definitions, such as the 2000 ISDA Definitions) including where the transaction in question is not otherwise documented under ISDA terms such as under an ISDA Master Agreement.
- covers a range of ISDA published master agreements and credit support documents, but also extends to agreements not published by ISDA, such French and Spanish Master Agreements and master agreements that do not cover derivative transactions such as the Global Master Securities Lending Agreement and the Global Master Repurchase Agreement.

What might happen if I am using a derivative to hedge another product?

- Mismatches may arise if a derivative transaction is used to hedge a product (e.g. a loan or a bond) which does not deal with the discontinuation of the relevant IBOR and the non-representativeness of LIBOR in the same way as the derivative transaction.

How does the IBOR Fallbacks protocol apply to non-linear derivative transactions?

- It is also unclear whether the fallbacks set out in the protocol would be suitable for certain non-linear derivative transactions into which parties may have entered. These include, for example, in-arrears swaps, interest rate caps and floors and range accrual products.

Can parties agree to include the amendments contemplated by the IBOR Fallbacks protocol without adhering to it?

- ISDA has published forms of bilateral agreements which enables parties to introduce the amendments contemplated by the protocol without adhering to it.

Can parties agree to bilaterally amend the terms or scope of the IBOR Fallbacks protocol?

- The protocol is intended for use without negotiation and a party will not be able to specific additional provisions, conditions or limitations while adhering. Parties will however be able to bilaterally amend its terms or scope. ISDA has also published template language that enables parties to alter the scope of the protocol.
- Parties may want to exclude from the Protocol amendment process transactions which are to be amended as part of a more specific amendment process, such as amending hedges in concert with amendments to a syndicated loan arrangement.

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