Transition in Sterling Non-Linear Derivatives

The Working Group on Sterling Risk-Free Reference Rates

November 2020

Table of Contents

Foreword

The overall objective of the Working Group on Sterling Risk-Free Reference Rates (the "Working Group") is to enable a broad-based transition from GBP LIBOR to SONIA (the Sterling Overnight Index Average) by the end of 2021 across the sterling bond, loan and derivative markets.[1] This will reduce the financial stability risks arising from widespread reliance on GBP LIBOR, which in the years since the financial crisis has been based on relatively few underlying transactions.[2]

This paper can be used by all non-linear derivatives market participants and end-users. It describes how a non-linear derivatives market based on a risk free rate could be structured using compounded in arrears SONIA for the following product sets:

- Swaptions and Cancellable Swaps
- Caps & Floors
- Inverse Floaters & Callable Inverse Floaters
- CMS Swaps, Caps & Floors
- LIBOR In Arrears Swaps
- Range Accruals and Callable Range Accruals
- CMS Range Accruals and Callable CMS Range Accruals

In doing so, this paper takes into account how existing uncleared GBP LIBOR referencing derivatives could move to reference compounded in arrears SONIA when relying on the ISDA IBOR Fallbacks Protocol (the "Protocol") and IBOR Fallbacks Supplement (the "Supplement"). Further information for uncleared non-linear derivatives can be found in ISDA's RFR Conventions and IBOR Fallbacks - Product Table.

As mentioned in its statement welcoming the announcement by ISDA,[3] the Working Group strongly encourages market participants to adhere to the Protocol.[4] Ensuring widespread adoption of appropriate fallback language in derivatives contracts is a key priority for transition away from LIBOR and in addressing risks arising from the stock of legacy LIBOR contracts.

The Working Group is particularly grateful to the Non-Linear Derivatives Task Force for having developed this paper.

The Bank of England and FCA are each ex-officio members of the Working Group. The views and outputs set out in this Working Paper do not constitute guidance or legal advice from the Bank of England (including the Prudential Regulation Authority ("PRA")) or the FCA and are not necessarily endorsed by the Bank of England (including the PRA) or the FCA. In addition, this paper is not intended to impose any legal or regulatory obligations on market participants. This paper has been prepared for the purpose of highlighting to market participants some of the potential considerations. It does not constitute a comprehensive outline of all relevant considerations. Market participants should seek their own advice in relation to their legal, regulatory, tax and other obligations and as to any other considerations or risks that may arise or be relevant.

---

[1] https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr-terms-of-reference.pdf

[2] This was particularly evident during the period of disruption brought on by COVID-19 in March 2020 where the limited market transactions underpinning GBP LIBOR benchmarks fell away leaving them almost entirely reliant on expert judgment. Additionally, during this period, LIBOR rates – and hence costs for borrowers – rose as central bank policy rates fell and underlying market activity was low. This has reinforced the importance of completing the transition to alternative rates by end-2021. For more on this please refer to the Bank of England's May 2020 Financial Stability Report: https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2020/may-2020.pdf

[3] Statement welcoming the announcement by ISDA on its IBOR Fallbacks Protocol and IBOR Fallbacks Supplement

[4] Details on how to adhere to the Protocol can be found on ISDA's website here: http://assets.isda.org/media/3062e7b4/3cfa460a-pdf

Executive Summary

1. To promote the further shift from GBP LIBOR to SONIA in derivatives markets, the Working Group has set a target milestone for market participants to cease initiating new GBP LIBOR linked non-linear derivatives expiring after 2021 by end Q2/Q3 2021 (except for risk management of existing positions).[5] Market participants are encouraged to take all necessary steps to complete their operational transition plans for non-linear derivatives within this timeframe in order to reduce the financial stability risks arising from the widespread reliance on GBP LIBOR and to support an orderly transition ahead of end 2021.

2. For the uncleared derivatives market, ISDA launched on 23 October 2020 its IBOR Fallbacks Protocol (the "Protocol") and IBOR Fallbacks Supplement (the "Supplement"), with an effective date of 25 January 2021. These fallback provisions cover the transition arrangements for legacy GBP LIBOR derivatives, and they can be triggered by either: (i) the cessation of the publication of GBP LIBOR; or (ii) the Financial Conduct Authority (the "FCA") declaring that GBP LIBOR is no longer be representative of the underlying market. The Working Group considers ISDA's documentation as a key tool in the preparation for the end of LIBOR.

3. Whilst there is a liquid SONIA-referencing market in linear swaps, it is recognised by the Working Group that overall SONIA liquidity may also benefit from there being a functioning non-linear derivatives market that is based on SONIA. This would support market participants' plans to meet the end Q2/Q3 2021 target milestone and the market transition away from LIBOR too.

4. In this context, the Working Group set up a Non-Linear Derivatives Task Force of market practitioners and end-users in non-linear derivatives to discuss how these products could potentially function using compounded in arrears SONIA. This work leverages and expands upon the results of a survey of 15 dealers in sterling non-linear derivatives conducted by the Bank of England and the FCA to understand the preferred approach of market participants for the trading of interbank SONIA swaptions, caps and floors.[6] It also recognises that where non-linear derivatives are used to hedge interest rate risk in cash products based on compounded in arrears SONIA, consistency would ensure these products operate in a more robust fashion and would minimise basis risk between them. Alignment may also reduce operational, legal, tax, accounting and similar issues between the hedging non-linear derivative and the cash product.

5. Section 1 of this paper shows how a non-linear derivatives market could potentially be structured using compounded in arrears SONIA, considering evaluation factors that include economic nature of the trade, operational requirements and currently available pricing in the market. Section 2 of the paper provides high level views from the Working Group on operational preparedness for non-linear derivatives if they were based on compounded in arrears SONIA.

6. The considerations shared in this paper are intended to support new trade discussions by all market users in their transition away from the use of GBP LIBOR.

[5] https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/rfr-working-group-roadmap.pdf

[6] https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/statement-working-group-srfrr-swaption-caps-floor.pdf

Section 1: Considerations for new flows in non-linear derivatives based on compounded in arrears SONIA

Background

7. Working Groups in the LIBOR currency jurisdictions have recommended replacement rates for LIBOR; all have proposed alternative near risk-free rates ("RFRs"). The Working Group's recommended risk-free rate for sterling markets is SONIA and is administered by the Bank of England. SONIA, unlike LIBOR, is a robust fixing derived from an active liquid underlying market. Derivatives market participants are encouraged to continue to move consistently towards SONIA.

8. As a robust and viable alternative to LIBOR, the relevant RFR rate needs to be adjusted to account for it being an overnight rate and the various premia that are included within LIBOR. RFRs are expected to be lower than their LIBOR equivalent under most circumstances and so a credit adjustment spread is also applied to minimise the economic impact of moving to them. In the derivatives market, ISDA conducted consultations on the adjustments required to RFRs. The ISDA fallback rates in sterling will apply a compounded setting in arrears adjustment to SONIA and a credit adjustment spread based on a historical median over a five-year lookback period.[7] The fallback rates (including SONIA) for the relevant tenor will be as published by Bloomberg, who will compound the relevant RFR over the relevant tenor and apply a two-day 'backward shift' and add the spread adjustment.

9. It is the Working Group's view that a fully functioning SONIA-referencing non-linear derivatives market could potentially exist on terms similar to those found in ISDA's fallback provisions. This is also consistent with the results of the survey conducted by the Bank of England and FCA. See table 1 for further details.

[7] Summary of Responses to the ISDA Consultation on Final Parameters for the Spread and Term Adjustments, The Brattle Group, 15 November 2019.

Table 1: Mapping of non-linear derivatives based on compounded in arrears SONIA

	Could this product be made compatible with compounded in arrears SONIA?	***Could it be economically equivalent to its LIBOR version?***	***Could it proceed without a "SONIA swap rate" being available or a change to a swap fixing screen?***	***Operational settlement systems and pricing considerations***	***Relationship vs fallen back trade as described by ISDA[8]***
European Swaptions					
Physical settlement	√	√ When adjusted with the Bloomberg spread, the Working Group does not view the economic difference to be significant.	√	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. The market for these structures has not yet developed. Currently, physically settled SONIA swaptions have traded three times in the broker market in the past 12 months. Prices have been shown in the market sporadically but are increasing in frequency. The Working Group understands that ICAP plan to implement a page publishing at the money straddle prices and volatilities for Physically LCH settled SONIA swaptions this month, November 2020.	"…if cleared physically settled and CCP no longer clears the relevant IBOR swap (because the IBOR has been discontinued), then collateralised cash price cash settlement will apply;discontinuation of ICE Swap Rates will have implications for cash settled swaptions.*"*
Cash Settled IRR	√ Provided a fixing page is available, these are compatible with a compounded in arrears format.	√ When adjusted with the Bloomberg spread, the Working Group does not view the economic	X	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. To date there have been no known trades in the market against SONIA, and pricing in SONIA is not yet available in the broker market.	"…discontinuation of ICE Swap Rates will have implications for cash settled swaptions.*"*

[8] As found in ISDA's RFR Conventions and IBOR Fallbacks - Product Table.

	Could this product be made compatible with compounded in arrears SONIA?	***Could it be economically equivalent to its LIBOR version?***	***Could it proceed without a "SONIA swap rate" being available or a change to a swap fixing screen?***	***Operational settlement systems and pricing considerations***	***Relationship vs fallen back trade as described by ISDA[8]***
		difference to be significant.			
Cash collateralised settlement	√ Provided a fixing page is available, these are compatible with a compounded in arrears format.	√ When adjusted with the Bloomberg spread, the Working Group does not view the economic difference to be significant.	X	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. Due to the absence of an available fixing page the market for these structures has not yet developed to date. Without this page, physically settled may have been preferred. ICAP currently publish at the money straddle prices and volatilities for cash settled CCP SONIA swaptions.	"Discontinuation of ICE Swap Rates will have implications for cash settled swaptions."
Bermudan Swaptions					
Physical Settlement	√	√ When adjusted with the Bloomberg spread, the Working Group does not view the economic difference to be significant.	√	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. To date there have been no known trades in the market against SONIA, and pricing in SONIA is not yet available in the broker market.	"If cleared physically settled no longer clears the relevant IBOR swap (because the IBOR has been discontinued), then collateralised cash price cash settlement will apply. Discontinuation of ICE Swap Rates will have implications for cash settled swaptions."
Cash Collateralised Settlement	√ Provided a fixing page is	√ When adjusted with the	X	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant.	"Collateralised cash price cash settlement will apply. Discontinuation of ICE Swap Rates will have implications for cash

	Could this product be made compatible with compounded in arrears SONIA?	***Could it be economically equivalent to its LIBOR version?***	***Could it proceed without a "SONIA swap rate" being available or a change to a swap fixing screen?***	***Operational settlement systems and pricing considerations***	***Relationship vs fallen back trade as described by ISDA[8]***
	available, these are compatible with a compounded in arrears format.	Bloomberg spread, the Working Group does not view the economic difference to be significant.		To date there have been no known trades in the market against SONIA, and pricing in SONIA is not yet available in the broker market.	settled swaptions."
Cancellable Swaps	√ The initial swap will function like a vanilla interest rate swap. The cancelation right is likely to function like a physically settled swaption.	√ When adjusted with the Bloomberg spread the Working Group does not view the economic difference to be significant.	√	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. To date there have been no known trades in the market utilising this approach.	N/A ISDA have not specifically stated the fallback for these products.
Caps & Floors	√ Whilst compatible in terms of establishing a go-forward market, the product is different compared to its LIBOR equivalent	X Different product in terms of optionality, even when adjusted to compounded in arrears plus the Bloomberg spread.	√	Due to the change in nature of the compounded in arrears format versus LIBOR, in particular the pricing of options on the daily compounded average, the Working Groups believes there could be additional steps involved to achieve compatibility with systems. The market for these structures is developing. Cap floors versus SONIA have traded on several occasions in the last year with increasing frequency. Prices are now shown in the broker market on an almost daily basis and are increasing in frequency.	"Payoff would not be known until two payment Business Days before the end of the period."

	Could this product be made compatible with compounded in arrears SONIA?	***Could it be economically equivalent to its LIBOR version?***	***Could it proceed without a "SONIA swap rate" being available or a change to a swap fixing screen?***	***Operational settlement systems and pricing considerations***	***Relationship vs fallen back trade as described by ISDA[8]***
				ICAP currently publishes prices and volatilities for at the money SONIA Cap floor straddles and out of the money SONIA caps and floors at various different strikes.	
Inverse Floaters and Callable Inverse Floaters	√ Whilst compatible in terms of establishing a go-forward market, the product is different compared to its LIBOR equivalent	X Different product in terms of optionality, even when adjusted to compounded in arrears SONIA plus the Bloomberg spread.	√	Due to the change in nature of the compounded in arrears format versus LIBOR, the Working Groups views there could be additional significant steps involved to achieve compatibility with systems. There is no existing market for Inverse Floaters or Callable Inverse versus SONIA. At the time of writing, no prices have been ever been shown in the broker market. No broker publishes prices in inverse floater products versus SONIA. However SONIA Cap Floor volatilities published by ICAP could be of use for valuation of Inverse Floaters.	N/A ISDA have not specifically stated the fallback for these products.
Constant Maturity Swaps Caps & Floors	√ Provided a fixing page is available, these are compatible with a compounded in arrears format.	√ When adjusted with the Bloomberg spread, the Working Group does not view the economic difference to be significant.	X	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. To date there have been no known trades in the market against SONIA, and pricing in SONIA is not yet available in the broker market.	N/A ISDA have not specifically stated the fallback for these products.
LIBOR In Arrears Swaps	X Due to the change in nature	X The change to the closest	√	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant.	"Documentation provides for use of the most recent fallback rate for the relevant IBOR tenor that is available two payment Business

	Could this product be made compatible with compounded in arrears SONIA?	***Could it be economically equivalent to its LIBOR version?***	***Could it proceed without a "SONIA swap rate" being available or a change to a swap fixing screen?***	***Operational settlement systems and pricing considerations***	***Relationship vs fallen back trade as described by ISDA[8]***
	of the compounded in arrears format, this product ceases to function in its usual manner relative to LIBOR.	available fixing changes the economics. An in advance term fixing could be considered here instead.		The Working Group does not expect that there will be any trades or pricing in the market against the compounded in arrears format.	Days before the relevant Payment Date (which will shift the period back by the approx. length of the tenor)."
Range Accruals and Callable Range Accruals	√ Whilst compatible in terms of establishing a go-forward market, the product is different compared to its LIBOR equivalent.	X Different product in terms of optionality, even when adjusted to compounded in arrears plus the Bloomberg spread.	√	Due to the change in nature of the compounded in arrears format versus LIBOR, the Working Groups believes there could be additional significant steps involved to achieve compatibility with systems. To date there have been no known trades in the market against SONIA, and pricing in SONIA is not yet available in the broker market.	"Documentation provides for using fallback rate for the relevant IBOR tenor for each applicable observation date (provided that such day is defined as or by reference to a Reset Date such that it is an original fixing date for the purposes of the fallbacks) for which such fallback rate is available two payment Business Days before the relevant Payment Date (which fallback rate includes a backward shift). For other observation dates (again, provided that such day is defined as or by reference to a Reset Date such that it is an original fixing date for the purposes of the fallbacks), documentation provides for use of the most recent fallback rate for the relevant tenor that is available two payment Business Days before the relevant Payment Date

	Could this product be made compatible with compounded in arrears SONIA?	***Could it be economically equivalent to its LIBOR version?***	***Could it proceed without a "SONIA swap rate" being available or a change to a swap fixing screen?***	***Operational settlement systems and pricing considerations***	***Relationship vs fallen back trade as described by ISDA[8]***
					(which would likely result in use of the same fallback rate for multiple observation dates).."
CMS Range Accruals and Callable Range Accruals	√ Provided a fixing page is available these are compatible with a compounded in arrears format.	√ When adjusted with the Bloomberg spread the Working Group does not view the economic difference to be significant.	X	The Working Group does not view the steps to achieve compatibility with existing systems for analytics, settlement and accounting as being significant. To date there have been no known trades in the market utilising this approach, and pricing in SONIA is not yet available.	N/A ISDA have not specifically stated the fallback for these products.

Section 2: High level views on operational preparedness for new flows in non-linear derivatives if based on compounded in arrears SONIA

SONIA Interest Rate Swap Fixings

10. ICE Benchmark Administration began publishing daily indicative GBP SONIA Interest Swap Fixings on 2 October 2020 on "Beta" settings. These settings are currently solely for information and illustration purposes in order to enable stakeholders to evaluate the rates and provide feedback during an initial testing period. The Working Group understands that IBA intends to announce when GBP SONIA ISR will be made available as a benchmark for use in financial contracts.

11. Timothy J Bowler, President ICE Benchmark Administration made the following statement on the 27th of October 2020 in an open letter[9] to Tushar Morzaria, Chair of the Working Group on Sterling Risk free reference rates:

    "*IBA is engaging with the International Swaps and Derivatives Association (ISDA) with a view to the new ISR being memorialised in standard definitions for derivatives. IBA is also committed to engaging with other key infrastructure providers to facilitate a smooth transition away from LIBOR® for the swaps market.*

    IBA's introduction of GBP SONIA ISR does pave the way for this new benchmark to be used as a building block, either in ISDA definitions or by mutual agreement between the parties, to help settle legacy contracts that were written by reference to ISR linked to LIBOR.

    We would be delighted to engage further with the Working Group on this and to attend at a future meeting of the Non-Linear Derivatives Task Force."

12. The Working Group's Non-Linear Derivatives Task Force is engaged in establishing a methodology that meets market wide approval to convert these GBP SONIA ISR fixings into a synthetic LIBOR ISR equivalent using the published relevant RFR IBOR spread adjustment.

---

[9] [Updated January 2021: https://www.theice.com/publicdocs/IBA_Letter_GBP_RFR_WG-27_OCT_20.pdf]