

Withdraw consent



Next steps for LIBOR transition in 2020: the time to act is now

Press Releases | Published: 16/01/2020 | Last updated: 16/01/2020

The Bank of England (the Bank), Financial Conduct Authority (FCA) and the Working Group on Sterling Risk-Free Reference Rates (RFRWG) have published a set of documents today, outlining priorities and milestones for 2020 on LIBOR transition.

This is a critical year for LIBOR transition. As the Bank's Financial Policy Committee (FPC) set out in December 2019, whilst good progress has been made, firms need to accelerate efforts to ensure they are prepared for LIBOR cessation by end-2021.

To help achieve this, the RFRWG has today published its priorities and an updated roadmap for the year ahead to highlight important events and clarify actions market participants should take to reduce LIBOR exposure and transition to alternative rates, including:

- Ceasing issuance of cash products linked to sterling LIBOR by end-Q3 2020;
- Throughout 2020, taking steps that demonstrate that compounded SONIA is easily accessible and usable;
- Take steps to enable a further shift of volumes from LIBOR to SONIA in derivative markets;
- Establishing a framework for the transition of legacy LIBOR products, in order to significantly reduce the stock of LIBOR referencing contracts by Q1 2021; and
- Considering how best to address issues 'tough legacy' contracts.

The Bank and FCA support these objectives and have published two documents designed to further catalyse transition efforts:

- First, a joint letter that has been sent to major banks and insurers, supervised in the UK. This letter sets out the initial expectations of the FCA and PRA of firms' transition progress during 2020, including in relation to the targets set by the RFRWG, and highlights the FPC's close monitoring of the steps being taken.
- Second, a statement from the Bank and the FCA encouraging market makers to switch the convention for sterling interest rate swaps from LIBOR to SONIA on 2 March 2020. This is designed to help progress transition in the derivatives market.

The RFRWG has also published a series of documents today, including:

- A document setting out the RFRWG's views on which types of business and client should use overnight SONIA, relative to alternatives including forward-looking term rates. This concludes that use of SONIA compounded in arrears is appropriate and operationally achievable for 90% of new loans by value, which is consistent with the RFRWG's existing expectation that the use of

forward-looking term rates will be more limited than the current use of LIBOR. The Bank and FCA supports this conclusion fully.

- A set of helpful 'lessons learned' from recent conversions of legacy LIBOR contracts.
- A factsheet that makes clear the 'whys' and 'whats' of LIBOR transition and sets out why all market participants need to act now.

Today's publications, along with an update in December (details in notes to editors), are a comprehensive suite of materials that support of the RFRWG's priorities and milestones. The time to act is now: with the tools published today and the support of the official sector domestically and internationally, market participants have what they need to leave LIBOR behind.

Tushar Morzaria, Chair, Working Group on Sterling Risk-Free Reference Rates, commented: '2020 will be a pivotal year in the transition journey, with critical focus on enabling the flow of new business away from sterling LIBOR. The Working Group on Sterling Risk-Free Reference Rates has therefore defined a key priority to cease issuance of sterling LIBOR cash products by the end of Q3. In conjunction, the RFRWG fully supports the Bank of England and FCA initiative to encourage market makers to change the market convention for sterling interest rate swaps from LIBOR to SONIA in Q1 2020.'

Andrew Hauser, Executive Director for Markets at the Bank of England noted: 'Today's suite of publications helps provide greater clarity to the market on a number of issues central to LIBOR transition as we head towards the 2021 deadline. I am particularly encouraged by the ambitious goals that market participants have set for themselves this year – including the aim to cease issuance of cash products linked to sterling LIBOR by 2020 Q3 – and by the steps already taken towards those goals, including the creation of new SONIA-linked loans and the conversion of legacy bonds. The groundwork has been laid for a decisive shift away from LIBOR in 2020.'

Christopher Woolard, Executive Director of Strategy and Competition at the FCA, commented: 'In most products, market participants have made impressive progress in moving away from LIBOR. The time has come to draw to a close its remaining use. The Bank and the FCA have written to major banks and insurers to set out our expectations for transition progress during 2020 and to reaffirm our support for the Working Group's targets. Firms must act now to help meet these targets and ensure a smooth transition to alternative rates by end-2021.'

Notes to Editors:

1. The [RFRWG documents](#) that have been published today are listed below:
 - a. The RFRWG's 2020 priorities and milestones.
 - b. A paper titled: The Use Cases of Benchmark Rates: Compounded in Arrears, Term Rate and Further Alternatives.
 - c. Lessons learned from recent conversions of legacy LIBOR contracts.
 - d. A factsheet titled: Calling time on LIBOR: Why you need to act now.
2. The [Statement from the Bank and FCA on OIS streaming conventions](#).
3. The [joint letter from the Bank and FCA to senior managers of UK banks and insurers with regards to LIBOR transition](#).
4. In December, a [consultation was published](#) considering the approach to use in order to determine the credit adjustment spread for inclusion in sterling cash products referencing LIBOR. To note that the window for feedback on this consultation paper closes 6 February 2020.
5. [Further information with regards to LIBOR transition](#).
6. The [Financial Stability Report](#) referenced in the press release. Box 10 relates to LIBOR transition.

Next steps for LIBOR transition in 2020: the time to act is now

Media Centre

Press releases and contacts for journalists and other media

Next steps for LIBOR transition in 2020: the time to act is now

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Published on 16 January 2020

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Press release



The Working Group on Sterling Risk-Free Reference Rates

Calling time on LIBOR: Why you need to act now

- 1** Interest rate benchmarks, such as LIBOR, are used to calculate the interest rate in financial products. These rates are written into loans, bonds and mortgages, and many other contracts.
- 2** LIBOR is the most common interest rate benchmark in the UK. LIBOR is expected to cease after end-2021. In particular, LIBOR-linked loans may not be offered after Q3 2020. This will impact the variable rate in LIBOR-linked financial products.
- 3** All financial products will need to remove dependence on LIBOR by end-2021. All users of LIBOR must act now.

What's happening?

LIBOR is being phased out

Since the 1980s LIBOR has been used widely as an interest rate benchmark for many products. LIBOR is based on banks' submissions of their interbank borrowing rates. However, since the financial crisis, banks no longer fund themselves in this way. The absence of an underlying active market means LIBOR is sustained by the use of "expert judgement". This cannot continue indefinitely, and [2021 is the last year panel banks](#) have agreed to participate in providing their submissions to LIBOR.

LIBOR is expected to cease after end-2021

Public authorities, in the UK and internationally, have been clear that LIBOR is expected to cease to exist after 2021. For loans, LIBOR products may not be offered beyond Q3 2020. All counterparties to a financial product or contract that references LIBOR will need to take action to remove any dependence on LIBOR that remains after 2021.

Robust alternative benchmark rates have been established, such as SONIA* in the UK

LIBOR is available in five currencies. Each relevant jurisdiction has established an alternative to LIBOR. This includes [SONIA*](#) in the UK. Unlike LIBOR which is fixed in advance for a set period (e.g. 3 months), SONIA is an overnight rate, measured on each day over the interest period to produce a final interest rate at the end. It is a (nearly) risk-free rate as it does not include any term bank credit risk or liquidity premium. These differences between SONIA and LIBOR will impact how interest is calculated.

Transition from LIBOR is underway, but all users must take further action

You will need to discuss with your bank or provider how you will switch your contract away from LIBOR. It is important that all users of LIBOR understand how the new rates differ from LIBOR, so they are prepared when providers get in touch about transition and the actions needed.

What do I need to do?

1. Establish where your LIBOR exposures are

Mortgages, loans, deposit facilities, derivatives and floating rate notes may reference LIBOR. It can also be found in ancillary contract terms (leasing and servicing contracts), company pension schemes, commercial contracts and discount rates used in valuations. It is important to identify your exposure to LIBOR and to understand what will happen to these contracts if LIBOR is no longer available.

2. Check your contract terms

Your contracts may include "fallback" terms setting out what will happen when LIBOR is not available. However these terms often do not envisage that LIBOR could be permanently unavailable. Check the fallback terms, what that means for your financial product and whether they need to be amended.

3. Familiarise yourself with SONIA, and what it means for you / your business

In sterling, the overnight rate [SONIA](#) is an alternative benchmark to LIBOR. SONIA is not a like-for-like replacement for LIBOR and cannot be directly substituted into existing contracts. Given the differences between the two rates, you/ your business may need to make changes to systems in order to use SONIA.

4. Speak to your bank, product provider, consult with a financial services professional or advisor

Ask your bank what preparations they are making and what that means for you/your business. You can seek further advice from financial service professionals as you consider how to prepare for transition.

Where can I find more information?

Authorities have convened industry-led groups in each jurisdiction to take this work forward:

£ → *SONIA (Sterling Overnight Indexed Average)	\$ → SOFR	€ → €STR
Sterling Risk Free Reference Rate Working Group website . In particular, the Working Group on Risk Free Rates' transition guide and the FCA/PRA statement on the largest banks' plans for transition may help you in preparing for LIBOR transition.	Alternate Reference Rate Committee (ARRC) website .	Euro Working Group website .

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FCA and Bank of England encourage switch from LIBOR to SONIA for sterling interest rate swaps from Spring 2020

Statements | Published: 16/01/2020 | Last updated: 16/01/2020

The FCA and the Bank of England encourage market makers to change the market convention for sterling interest rate swaps from LIBOR to SONIA (the Sterling Overnight Index Average) in Q1 2020. This change is intended to move the greater part of new sterling swaps trading to SONIA and reduce the risks from creating new LIBOR exposures.

Following FCA discussions with market makers, the authorities have identified 2 March 2020 as an appropriate date for this change to happen.

The market for SONIA derivatives is already well-established. Average cleared over-the-counter SONIA swaps exceeded £4.5trillion per month over the past six months, and the traded monthly notional value is now broadly equivalent to Sterling LIBOR.

This change is also reflected in the roadmap set out by the Working Group on Sterling Risk-Free Reference Rates ('the Working Group'). In addition to shifting the swap market convention, the roadmap details other priorities set by the Working Group, including ceasing GBP issuance of LIBOR-based loans by third-quarter 2020 and managing down legacy LIBOR-linked swap portfolios and exposures.

SONIA derivatives are likely to be the appropriate market convention for most contracts, particularly those maturing after 2021. The number of cases where LIBOR contracts are judged to remain appropriate is limited today, and will reduce further as the end of 2021 approaches. Market participants should be aware of the risks if new LIBOR transactions are entered into, and take appropriate steps to establish that their clients are too.

Commenting on this initiative, Edwin Schooling Latter, Director of Markets and Wholesale Policy at the FCA, said:

'We have seen great progress in the development of the SONIA derivatives market. I encourage all market participants to join the initiative to put SONIA first over LIBOR from 2 March. This should help make SONIA the market standard in sterling swaps as is already the case in the bond market.'

Andrew Hauser, Executive Director for Markets, Bank of England, said:

'This move toward a much greater use of SONIA in the sterling derivatives market builds on the strong foundations established in recent years and demonstrates a strong continuing partnership between UK authorities and market participants to bring about a decisive shift away from use of LIBOR ahead of end-2021.'



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16 January 2020

Dear SMF

Next steps on LIBOR transition

In June 2019, the Financial Conduct Authority (the FCA) and the Bank of England (the Bank) provided individual feedback to major firms who received our 2018/19 Dear CEO letter on LIBOR transition. We also published a [feedback statement](#) highlighting the importance of firms appropriately identifying and quantifying LIBOR exposures, and having detailed and robust plans in place to transition to alternative Risk-Free Rates (RFRs). The statement also encouraged firms to seek opportunities to transact using RFRs, and to support industry initiatives to ensure a smooth transition from LIBOR.

The FCA and the Bank will continue to support market-led transition efforts through the Working Group on Sterling Risk Free Reference Rates (RFRWG), including by working with the RFRWG, the Official Sector Steering Group, and each acting unilaterally to remove barriers to transition. For example, in November 2019 the FCA published [Q&As](#) to support firms in managing the conduct implications of transition; and on 18 December 2019 Sam Woods set out, in [his letter](#) to Tushar Morzaria, RFRWG Chair, how the Prudential Regulation Authority (PRA) is considering the interactions between LIBOR transition and the prudential regulatory framework.

In that context, [the Financial Policy Committee \(the FPC\)](#) has considered further potential supervisory tools that authorities could use to encourage the reduction in the stock of legacy LIBOR contracts to an absolute minimum before end-2021. The FPC will keep the potential use of supervisory tools under review in light of transition progress made by firms. As they have made clear, **'The intention is that sterling LIBOR will cease to exist after the end of 2021. No firm should plan otherwise.'**

This update from the FCA and the PRA sets out our initial expectations for transition progress during 2020.

Although several important milestones were met last year, as highlighted in the appendix, greater momentum is needed, and **2020 will be a key year for transition**. Orderly and timely progress requires individual firms to actively engage with the wider transition efforts in the market – both those of the authorities and of industry. We expect to see clear evidence of this engagement from the beginning of Q1 2020.

The RFRWG has set a series of **targets for 2020**, including to:

- Enable a further shift of volumes from LIBOR to SONIA in derivative markets, supported by a statement from the Bank and FCA encouraging a switch in the convention for sterling interest rate swaps from 2 March 2020;
- Cease issuance of cash products linked to sterling LIBOR by end-Q3 2020; and
- Significantly reduce the stock of LIBOR referencing contracts by Q1 2021.

The FCA and the Bank support these targets. They have also been endorsed by the Risk-Free Rate Senior Advisory Group, and are set out in the public transition road map. We expect all firms to play their part in meeting these targets: LIBOR transition plans should include the targets in project milestones and ensure that management information is available to track progress. As a guide, we consider that action in the following areas is key to delivery, and should feature in firms' planning from Q1:

- product development;
- reviewing infrastructure, including updating loan system capabilities;
- client communications and awareness; and
- updating documentation.

Ongoing engagement

The FCA and the PRA will step up engagement with firms on LIBOR transition through our regular supervisory relationship, reviewing your management information and by collecting data from you to assess progress. The first set of management information and data, requested from dual-regulated firms at the end of September, was due by 31 December. We will discuss the information firms have provided, and their progress with transition – including how their plans reflect the RFRWG targets. Progress in these areas, along with those identified in the June 2019 'Dear CEO' feedback statement, will help demonstrate that firms are taking due account of the expected demise of LIBOR at end-2021. It will also be a key input to the FPC's consideration in mid-2020 of whether sufficient progress is being made to avoid seeking recourse to supervisory tools.

The months ahead will be critical in achieving a successful and smooth transition from LIBOR by end-2021. We welcome firms' continued cooperation on this topic.

Yours sincerely,

David Bailey Sarah Breeden Anna Sweeney Megan Butler Jonathan Davidson

Appendix – progress made in 2019

Sterling LIBOR

Over the last 6 months, SONIA Overnight Index Swaps accounted for around 50% of cleared swaps by notional traded value, and since 2018 there have been over 85 SONIA bond issuances totalling over £40 billion. Three SONIA linked loans have been completed, and the first conversion of a LIBOR linked loan to SONIA was announced in October. The International Swaps and Derivatives Association (ISDA) has also made significant progress in developing robust fall-backs for derivative contracts, and in securing market consensus on a fair replacement value for LIBOR.

SONIA liquidity

Liquid markets for SONIA in cash and derivatives are important building blocks for a decisive shift away from LIBOR. Despite this, significant volumes of sterling LIBOR swaps contracts continue to be written, and hence the stock of LIBOR-referencing contracts continues to grow. This includes contracts that mature beyond the end of 2021. With that in mind, the [Financial Policy Summary and Records](#) of the FPC Meetings on 11 July and 2 October 2019 set out that 'There is no justification for firms continuing to increase their exposures to LIBOR'. Firms will need to manage down this stock of LIBOR linked contracts, and ensure that robust fall-backs are included wherever possible, to avoid significant legal uncertainty after 2021. Additionally, the pace of transition in the loan market will need to speed up during 2020 if these products are to be widely available and in use before the end of 2021.

SOFR liquidity

Looking beyond sterling, liquidity in SOFR continues to build, with around US\$7 trillion of notional issuance in cash and derivatives products since April 2018. However, greater momentum is also needed here to ensure timely and orderly transition by end 2021.

Supervisory Approach

After the Dear CEO letter feedback statement was published in June 2019, the PRA and FCA increased the level of engagement with firms on LIBOR transition. Individual firms are transitioning away from LIBOR at different rates, and we continue to expect all firms to be proactive in taking early action to mitigate the risks from transition.

Transition to sterling risk-free rates from Libor

Together with the FCA, we are working with market participants to catalyse a transition to using SONIA as the primary interest rate benchmark in sterling markets.



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Overview

The Working Group on Sterling Risk-Free Reference Rates was established in 2015 to implement the [Financial Stability Board's recommendation](#) to develop alternative risk-free rates (RFRs) for use instead of Libor-style reference rates. In April 2017, the Working Group recommended the [SONIA benchmark](#) as their preferred RFR and since then has been focused on how to transition to using SONIA across sterling markets.

Please note the views and outputs of the Working Group are not necessarily endorsed by the Bank of England or the FCA.

Working Group updates (2019 onwards)

Next steps for LIBOR Transition in 2020: the time to act is now

On 16 January 2020, the Working Group on Sterling Risk-Free Reference Rates, Bank of England and FCA jointly published a set of documents, outlining priorities and milestones for 2020 on LIBOR transition.

News release: Next steps for LIBOR transition in 2020: the time to act is now

The material published by the Working Group highlights important events over 2020 and clarifies actions that market participants should take to reduce their LIBOR exposure ahead of end-2021 and transition to alternative rates. Market participants are encouraged to refer to:

The Working Group's priorities and roadmap for 2020 (PDF)

A paper setting out the Working Group's views on the appropriate use of SONIA compounded in arrears for businesses and clients, and guidance for where the use of alternative approaches, such as a Term SONIA Reference Rate, may be necessary:

The use cases of benchmark rates: compounded in arrears, term rate and further alternatives (PDF)

A statement considering helpful 'lessons learned' from recent conversions of legacy LIBOR contracts:

Progress on the transition of LIBOR-referencing legacy bonds to SONIA by way of consent solicitation (PDF)

A factsheet for end-users summarising LIBOR transition and setting out why market participants need to act now:

Factsheet - Calling time on LIBOR: Why you need to act now (PDF)

The [Working Group's consultation](#) (published in December) on credit adjustment spread methodologies for cash products, seeking feedback by 6 February 2020.

The Bank and FCA support the Working Group's 2020 objectives and have published two

documents designed to further catalyse transition efforts.

A letter from the FCA and the Bank to major banks and insurers setting out initial expectations of firms' transition progress during 2020

Letter to Senior Managers – Next steps on LIBOR transition

A statement encouraging market makers to switch the convention for sterling swaps from LIBOR to SONIA on 2 March 2020, designed to help progress transition in the derivatives market.

FCA and Bank of England encourage switch from LIBOR to SONIA for sterling interest rate swaps

Buy-side Sector Roundtable event

The Working Group on Sterling Risk-Free Reference Rates, in conjunction with the Bank of England and FCA, would like to invite buy-side market practitioners (e.g. traders, hedge fund managers, portfolio managers) to attend one of two roundtable events, on 24 and 31 January. The Working Group welcome interested practitioners with relevant expertise to join discussions on the buy-side barriers to LIBOR transition, dependencies on LIBOR and steps taken by firms to develop SONIA products.

If you would like to express your interest to attend, please contact RFR.Secretariat@bankofengland.gsi.gov.uk.

Consultation on credit adjustment spread methodologies for fallbacks in cash products referencing GBP LIBOR

The Working Group on Risk-Free Reference Rates is supportive of robust contractual fallback terms being in place to facilitate a smooth transition from LIBOR to SONIA. Such terms should include consideration of a credit spread adjustment to account for differences between LIBOR and SONIA. In the derivatives market, the International Swaps and Derivatives Association (ISDA) consulted on the spread methodology. This consultation resulted in agreement with regards to the appropriate methodology to be used for sterling LIBOR interest rate swaps. Following the progress made by ISDA, the Working Group has published a consultation paper for the sterling cash market (loans, bonds, and securitisations). This paper considers four methodologies that could be used to calculate the credit adjustment spread for fallback language in sterling cash instruments.

Sterling cash market participants are encouraged to feedback their answers to RFR.Secretariat@bankofengland.gsi.gov.uk by 6th February 2020.

Consultation on credit adjustment spread methodologies for fallbacks in cash products referencing GBP LIBOR (PDF)

Invitations for membership of the Tough Legacy; Cash Market Legacy Transition and Loans Flow Enablers Task Forces

The Working Group on Sterling Risk-Free Reference Rates would like to open invitations to join three new task forces, focusing on (i) enablers to moving new loans issuance away from GBP LIBOR, (ii) frameworks to support transition of legacy cash products, and (iii) providing

market input regarding the 'tough legacy' of products that may prove unable to be converted or amended to include robust fallbacks. The invitations to these three Task Forces are open to interested market participants with relevant expertise.

In the case of the Tough Legacy Task Force, the work will be building on the work of the Regulatory Dependencies Task Force to deliver a near-term output establishing the expected extent of these issues and likely market outcomes in the event of LIBOR cessation, any particular factors which lead contracts to be less likely to be able to convert, and any potential mitigants suggested by market participants to address the risks identified.

The Cash Market Legacy Transition Task Force will produce a discussion paper to support awareness of potential approaches to either actively convert existing contracts to alternative rates or update those contracts to include robust fallback language. This will also explore a range of key considerations around these approaches and solicit feedback on whether there are areas where further clarity is needed.

The Loans Flow Enablers Task Force will support the achievement of the Working Group's target of ceasing GBP Libor issuance by Q3 2020. It will include articulating key milestones, dependencies and potential blockers to achieving this target.

If you would like to express your interest in joining any of the three Task Forces, please contact the [RFR Secretariat](#).

Invitation for Loan Management System and Treasury Management System providers

The Working Group on Sterling Risk-Free Reference Rates would like to welcome providers of Loans Management Systems and Treasury Management Systems to present on their readiness to incorporate compounded SONIA capability in their products. Presentations would be made primarily to the Infrastructure Sub-Group, though the main Working Group itself will be interested to hear directly from those that are most advanced in their implementation.

If you would like to express your interest, please contact the [RFR Secretariat](#).

Letters to European Commission, Basel Committee on Banking Supervision, Prudential Regulation Authority and Financial Conduct Authority – October 2019

The Working Group on Sterling Risk-Free Reference Rates wrote to domestic (Prudential Regulation Authority and Financial Conduct Authority) and international (European Commission and Basel Committee on Banking Supervision) authorities regarding regulatory barriers to transition away from LIBOR. These letters request that the issues raised are considered and concrete actions are taken where necessary to ensure a smooth transition reducing risks to safety and soundness from continued reliance on a benchmark that is expected to cease at the end of 2021.

[Letter to European Commission \(PDF\)](#)

[Letter to Basel Committee on Banking Supervision \(PDF\)](#)

[Letter to Prudential Regulation Authority \(PDF\)](#)

[Letter to Financial Conduct Authority \(PDF\)](#)

Senior Advisory Group Terms of Reference – September 2019

The Risk-Free Reference Rate Working Group has published the Terms of Reference for the Risk-Free Rates Senior Advisory Group. The Working Group determined it would benefit from a Senior Advisory Group to provide strategic support and senior engagement in firms to help achieve the Working Group's deliverables and objectives.

[Sterling Risk-Free Rates Senior Advisory Group Terms of Reference \(PDF\)](#)

Conventions for referencing SONIA in new contracts, and considerations for loans processing systems – August 2019

The Working Group on Sterling Risk-Free Reference Rates has published a statement and an aggregated summary of responses to the [March 2019 Discussion Paper](#) on SONIA conventions and referencing SONIA in new contracts. The discussion paper captured the most significant conventions identified at the time by the Working Group.

The purpose of this document is to continue to support market participants in their adoption of SONIA, and provide further information when referencing SONIA in bonds, loans and derivatives.

[Statement on SONIA conventions and summary of responses \(PDF\)](#)

In addition, the Infrastructure sub-group published a working paper to aid in the operational processing of loans referencing alternative risk free rates, focusing on potential enhancements to loans systems for vendors and proprietary system owners. The sub-group has also published an update to its standing priority list.

[Working Paper on loans processing \(PDF\)](#)

[Infrastructure and systems priority list \(updated August 2019\) \(PDF\)](#)

Letter to European Insurance and Occupational Pensions Authority (EIOPA) – July 2019

The Working Group on Sterling Risk-Free Reference Rates wrote to the European Insurance and Occupational Pensions Authority (EIOPA) to welcome its decision to add the monitoring of LIBOR transition to their 2019 priorities. The Working Group recognises EIOPA's planned review of Solvency II in 2020, and would be grateful for further details regarding changes to the Solvency II risk-free reference rate. The letter would welcome EIOPA's consideration of a pan-European taskforce to address regulatory barriers to LIBOR transition.

[Letter to EIOPA \(PDF\)](#)

LIBOR transition event – June 2019

The Bank of England, FCA and Working Group jointly hosted a panel-based event 'Last Orders: Calling Time on LIBOR' on 5 June. Find out what was discussed, including the 'Dear CEO' thematic feedback, and watch a recording of the event [here](#).

Progress on adoption of risk-free rates in sterling markets

On 15 May 2019, a statement was released on behalf of the Working Group to update on progress in the adoption of SONIA in sterling markets, including work currently underway to develop a term benchmark based on that risk-free rate.

Statement: progress on adoption of risk-free rates in sterling markets (PDF)

As mentioned in the statement, the benchmark administrators that have confirmed they are working on the development of a Term SONIA Reference Rate are FTSE Russell, ICE Benchmark Administration and Refinitiv. More recently, IHS Markit also confirmed they are working to develop a term SONIA rate. Each administrator presented on their respective work to the Working Group, and these presentations are available to download below.

FTSE Russell - Term SONIA Reference Rates - 14 May 2019 (PDF)

ICE Benchmark Administration - Building Term SONIA Reference Rates - 14 May 2019 (PDF)

Refinitiv - Term SONIA Reference Rates - 14 May 2019 (PDF)

IHS Markit – Term SONIA Reference Rates – 5 September 2019 (PDF)

SONIA task forces

The Working Group agreed to set up three priority task forces on SONIA to look at term rates, accounting treatment and regulatory dependencies.

We have welcomed the strong interest from experts in the market to be involved in these task forces. The expressions of interest received during our request period have been registered and the work of the task forces is now being taken forward.

If you would like more information, or to express your interest, please contact RFR.Secretariat@bankofengland.co.uk.

Letter to the International Accounting Standards Board – March 2019

On 18 March, the Working Group on Sterling Risk-Free Reference Rates wrote to the International Accounting Standards Board (IASB) to extend its support to the IASB on risk-free rate transition.

The Working Group welcomes the IASB's decision to add the IBOR Reform and the Effects on Financial Reporting project to its Standard Setting agenda. The Working Group also welcomes the IASB's decision to prioritise the analysis of the accounting issues affecting financial reporting. The letter sets out how the Working Group could provide support and outlines its assessment of the priority technical accounting issues that need to be addressed as soon as possible.

This letter is available to download below. If there are specific topics, questions or feedback you would like to share with us, please contact the RFR Secretariat on the following email address: RFR.Secretariat@bankofengland.co.uk.

Letter (PDF)

Discussion paper on market conventions for SONIA - March 2019

The Working Group on Sterling Risk-Free Reference Rates has published its discussion paper on SONIA market conventions and further considerations for referencing SONIA.

The purpose of this discussion paper is to raise awareness on these market conventions for a broad range of market participants that seek to reference SONIA in new contracts and to support the preparedness of infrastructure service providers for the continued growth of

SONIA referencing products. This discussion paper delivers a key milestone for the Working Group to communicate best practice for referencing SONIA across bonds, loans and derivatives.

The discussion paper is available to download below. If you would like to share any specific feedback or questions with us, please contact the RFR Secretariat on the following email address: RFR.Secretariat@bankofengland.co.uk.

Discussion paper (PDF)

Infrastructure Forum – 31 January 2019

The Infrastructure Forum enabled the RFRWG to engage with infrastructure and systems providers on key impacted markets and to better understand any outstanding issues - and potential solutions - for infrastructure to support the development of SONIA and other RFR linked products.

Infrastructure firms play a key role in supporting a successful transition to RFR and helping to reduce the financial stability risks arising from the widespread reliance of financial markets on LIBOR. The RFRWG (supported by the Bank of England and the Financial Conduct Authority) are grateful for the engagement received to date in this market-led transition effort.

Slides of the presentation and a summary note of the forum is available to download in the documents section below. If there are specific topics or questions that you would like to share with us, please contact the RFR Secretariat on the following email address: RFR.Secretariat@bankofengland.co.uk

Infrastructure forum: presentation slideshow (PDF)

Infrastructure forum: summary note (PDF)

Infrastructure sub-group: calculator specifications (PDF)

Infrastructure sub-group: terms of reference (PDF)

Catalysing transition to SONIA as the risk-free rate (2018)

The Working Group's mandate is to catalyse a broad-based transition to using SONIA – the market's preferred risk-free rate – as the primary sterling interest rate benchmark in bond, loan and derivatives markets, over the next four years. That reflects concerns about the sustainability of Libor beyond 2021.

The Working Group on Sterling Risk-Free Reference Rates (RFRWG) issued a consultation on forward-looking Term Sonia Reference Rates (TSRR) on 17 July 2018, that closed on 26 October 2018. The consultation attracted 45 responses from a wide variety of market participants. The RFRWG published a summary of responses on 23 November 2018, compiled by the Bank of England acting as RFR Secretariat.

The membership of the Working Group includes banks and dealers, investment managers, non-financial corporates and other sterling issuers, infrastructure firms and trade associations. We have published the [full list of member firms](#) and [membership selection criteria](#).

We invite further expressions of interest in participating in transition work either as members of technical sub-groups or market sector forums to share views on aspects of the transition. This includes expressions of interest from professional services firms, in particular accountancy firms, law firms and financial consultancies where the work would be on a pro bono basis to provide expert input to the working group and related sub-groups.

*Please note: Market participants and professional service firms expressing their interest should not use their participation or contribution for marketing purposes.

For more details or to express interest, please contact RFR.Secretariat@bankofengland.co.uk.

[Consultation on Term SONIA Reference Rates \(PDF\)](#)

[Summary of responses for the consultation on SONIA term rates, published by the Sterling Risk-Free Rates Working Group \(PDF\)](#)

[LIBOR Transition and development of a term rate based on SONIA: Next steps \(PDF\)](#)

[New and legacy loan transactions referencing sterling LIBOR \(PDF\)](#)

[Infrastructure and systems preliminary priority list \(PDF\)](#)

[Working Group on Sterling Risk-Free Reference Rates - New issuance of sterling bonds referencing Libor \(PDF\)](#)

[Considerations around credit spread adjustment options in ISDA consultation on fallback rates \(PDF\)](#)

[Syndicated Loan Replacement of Screen Rate clause \(PDF\)](#)

[Working Group on Sterling Risk-Free Reference Rates – Terms of reference \(PDF\)](#)

[Working group on sterling risk-free reference rates - Timeline with Milestones \(PDF\)](#)

[Preparing for 2022: What you need to know about LIBOR transition \(PDF\)](#)

Working Group newsletters

[Newsletter - December 2019 \(PDF\)](#)

[Newsletter - November 2019 \(PDF\)](#)

[Newsletter - October 2019 \(PDF\)](#)

[Newsletter - September 2019 \(PDF\)](#)

[Newsletter - August 2019 \(PDF\)](#)

[Newsletter - July 2019 \(PDF\)](#)

[Newsletter - June 2019 \(PDF\)](#)

[Newsletter - May 2019 \(PDF\)](#)

[Newsletter - April 2019 \(PDF\)](#)

- Newsletter - March 2019 (PDF)
- Newsletter - February 2019 (PDF)
- Newsletter - January 2019 (PDF)
- Newsletter - December 2018 (PDF)
- Newsletter - November 2018 (PDF)

Working Group documents (2018 onwards)

- Terms of reference (PDF)
- Membership of the working group (PDF)
- Term SONIA reference rates sub-group terms of reference (PDF)
- SONIA Futures sub-group terms of reference (PDF)
- Pension Funds and Insurance Companies sub-group Terms of Reference (PDF)
- Sub-Group on Benchmark Transition Issues in Bond Markets Terms of Reference (PDF)
- Sub-Group on Benchmark Transition Issues in Syndicated Loan Markets Terms of Reference (PDF)
- Sub-Group on Outreach & Communication Terms of Reference (PDF)

NB The views and outputs of the Working Group are not necessarily endorsed by the Bank of England or the FCA.

The choice of SONIA as the risk-free rate (2015 to 2017)

In the Working Group's first phase they considered available risk-free rates and in April 2017, following two years of deliberations, the Working Group announced SONIA as its' preferred risk-free interest rate benchmark for use in sterling derivatives and relevant financial contracts.

The Working Group published a White Paper explaining its choice, seeking feedback on approaches to adoption and a gaining a better understanding of the views of a broad set of stakeholders. Feedback to the White Paper – and at an industry Roundtable hosted by the Working Group in July 2017 – confirmed strong support for SONIA as the preferred sterling risk-free rate.

White Paper: SONIA as the risk-free rate and approaches to adoption

Record: Roundtable on Sterling Risk-Free Raters - 6 July 2017

Working Group documents (2015-2017)

[Initial Selection Criteria for the Risk-free reference rate \(PDF\)](#)

[Design criteria for a sterling secured overnight money market benchmark \(PDF\)](#)

[Interim report of the working group on sterling risk-free reference rates \(PDF\)](#)

[Open letter from the Bank of England to the risk-free rate working group](#)

[A potential transition of the sterling overnight indexed swap market \(PDF\)](#)

[White paper: SONIA as the risk-free reference rate and approaches to adoption - June 2017 \(PDF\)](#)

[Record – Roundtable on Sterling Risk-Free Rates – 6 July 2017 \(PDF\)](#)

[Summary White Paper responses \(PDF\)](#)

NB The views and outputs of the Working Group are not necessarily endorsed by the Bank of England or the FCA.



Financial Stability Report, Financial Policy Committee Record and stress testing results - December 2019

The Financial Stability Report sets out our Financial Policy Committee's view on the stability of the UK financial system and what it is doing to remove or reduce any risks to it.



Stress testing

Our 2019 stress test shows that major UK banks are strong enough to carry on lending to households and businesses even in a recession worse than the financial crisis.



Payments

Whatever system you use to make payments, old or new, your money will need to be protected to the same standards.



Capital

UK banks will have more flexibility to use their capital to absorb losses. So they'll have even more room to keep lending to UK households and businesses in recessions.



Housing

The mortgage measures we introduced in 2014 guard against the damage to the economy that would be caused if lending standards went from responsible to reckless, as they have in the past.

Published on 16 December 2019

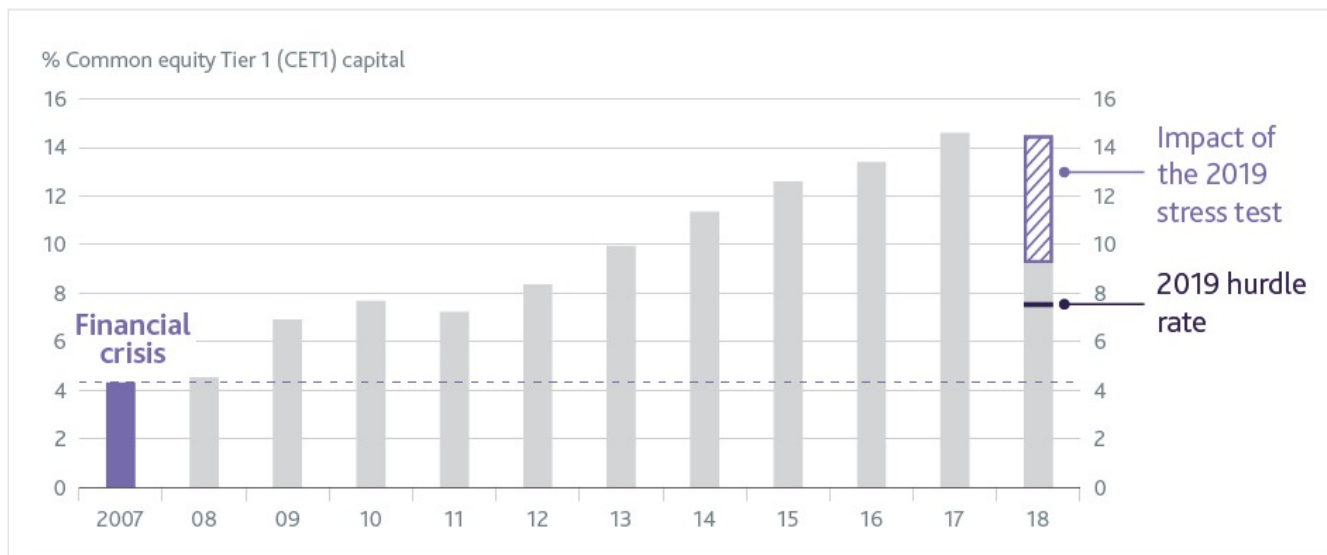
The Financial Policy Committee (FPC) aims to ensure the UK financial system is resilient to, and prepared for, the wide range of risks it could face — so that the system can serve UK households and businesses in bad times as well as good.

At its meeting on 13 December the FPC reviewed developments since its meeting on 2 October.

2019 annual cyclical scenario stress test

The 2019 annual cyclical scenario stress test (ACS) shows the UK banking system would be resilient to deep simultaneous recessions in the UK and global economies that are more severe overall than the global financial crisis, combined with large falls in asset prices and a separate stress of misconduct costs. It would therefore be able to continue to meet credit demand from UK households and businesses even in the unlikely event of these highly adverse conditions.

Even after the 2019 stress test, banks would still have twice as much capital as in 2007



- ◊ In the 2019 stress-test scenario, world GDP falls by 2.6%, UK GDP falls by 4.7%, Bank Rate rises to 4% and the UK unemployment rate rises to 9.2%.
- ◊ Losses on corporate exposures are higher than in previous tests, reflecting some deterioration in asset quality and a more severe global scenario. Despite this and weakness in banks' underlying profitability (which reduces their ability to offset losses with earnings), all seven participating banks and building societies (together 'banks') remain above their hurdle rates.
- ◊ The major UK banks' aggregate common equity Tier 1 (CET1) capital ratios after the 2019 stress scenario would still be more than twice their level before the crisis.
- ◊ Banks' resilience relies in part on their ability in stress to cut dividend payments, employee variable remuneration, and coupon payments on additional Tier 1 instruments. If banks had not cut their distributions during the stress, in aggregate they would not have met the 2019 ACS hurdle rate. Investors should be aware that banks would make such cuts as necessary if a stress were to materialise.

Major UK banks' capital ratios have remained stable since year-end 2018 (the starting point of the 2019 stress test). At the end of 2019 Q3, their CET1 ratios were over three times higher than at the start of the global financial crisis. Major UK banks also continue to hold sizable liquid asset buffers.

Global developments

The global economy has continued to slow, reflecting in part the broad effects of the trade war between the United States and China. In Hong Kong, rising political tensions have contributed to the sharpest fall in economic activity since the global financial crisis.

The FPC judges that the 2019 stress-test scenario for the global economy was sufficiently severe to encompass economic risks from both a broader trade war and tensions in Hong Kong. Major UK banks were resilient to the stress scenario, and so will be able to continue to lend to UK households and businesses, even if these risks play out further.

The Committee continues to judge that underlying global vulnerabilities remain material, and that there are risks of further deterioration.

- ◊ A broadening of the trade war beyond tariff measures to restrictions on technology and capital would further fragment the global economy and slow its rate of potential growth.
- ◊ While lower risk-free interest rates will support global growth, monetary authorities have correspondingly less room to respond in the event of further shocks to the global outlook.
- ◊ Although overall debt levels in advanced economies are rising no faster than incomes, debt vulnerabilities remain in China and in the US corporate sector. Risks remain in the euro-area banking sector. Flows of capital to

emerging markets remain vulnerable to changes in risk sentiment. And political tensions in Hong Kong pose risks due to its position as a major financial centre.

Domestic vulnerabilities and Brexit

In the UK, against a backdrop of Brexit-related uncertainty, growth has slowed and international investor demand for UK assets, notably commercial real estate, has fallen.

The core of the UK financial system — including banks, dealers and insurance companies — is resilient to, and prepared for, the wide range of UK economic and financial shocks that could be associated with a worst-case disorderly Brexit.

- ◊ The 2019 stress-test scenario for the UK economy was severe enough to encompass the range of economic shocks that could be associated with a disorderly Brexit. The core UK banking system demonstrated its resilience to — and capacity to keep lending in — that stress scenario.
- ◊ Even if a protectionist-driven global slowdown were to spill over to the UK at the same time as a worst-case disorderly Brexit, the FPC judges that the core UK banking system would be strong enough to absorb, rather than amplify, the resulting economic shocks.

Reflecting extensive preparations made by authorities and the private sector, most risks to UK financial stability that could arise from disruption to cross-border financial services in a worst-case disorderly Brexit have been mitigated.

- ◊ A range of measures have been put in place by financial services firms and authorities, including in the European Union (EU), to address these risks. Since November 2017, the FPC has regularly published a checklist of actions to avoid disruption to end-users of financial services during Brexit. The FPC updated this checklist at its most recent meeting.
- ◊ With over £1 trillion of high-quality liquid assets, major UK banks can meet their maturing obligations without any need to access wholesale funding for many months. They can also withstand an unprecedented loss of access to foreign currency markets. As a further precaution, the Bank is maintaining operations to lend in all major currencies on a weekly basis.
- ◊ The FPC welcomes the recent proposal from the European Commission to extend the temporary equivalence arrangements relating to UK central counterparties (CCPs). It expects confirmation of this and extended recognition of UK CCPs to be provided by end-December.
- ◊ Financial stability is not the same as market stability. Significant further volatility and asset price changes would be expected in a disorderly Brexit.

The FPC judges that domestic vulnerabilities (excluding Brexit) that can amplify economic shocks have not changed materially since July and remain at a standard level overall.

- ◊ Credit growth remains moderate. Household and corporate debt-servicing burdens are low. Interest rates would need to rise materially in order to return the share of households and companies with high debt-servicing burdens to historical averages.

Irrespective of the particular form of the UK's future relationship with the EU, and consistent with its statutory responsibilities, the FPC will remain committed to the implementation of robust prudential standards in the UK. This will require maintaining a level of resilience that is at least as great as that currently planned, which itself exceeds that required by international baseline standards, as well as maintaining UK authorities' ability to manage UK financial stability risks.

Bank capital requirements



Stepping back from current risks, the FPC, together with the Prudential Regulation Committee and the Bank, has reviewed the structural level and balance of capital requirements for the UK banking system. As a result of that review:

- ◊ The FPC is raising the level of the UK countercyclical capital buffer (CCyB) rate that it expects to set in a standard risk environment from in the region of 1% to in the region of 2%.
- ◊ Reflecting the additional resilience associated with higher macroprudential buffers, the Prudential Regulation Authority (PRA) will consult in 2020 on proposals to reduce minimum capital requirements in a way that leaves overall loss-absorbing capacity (capital plus bail-inable debt) in the banking system broadly unchanged.
- ◊ The Bank, in its capacity as the UK resolution authority, is also clarifying that, in the event of a bank resolution, it expects all debt that is bailed in to be written down or converted to the highest quality of capital, CET1.

Together, these changes will ensure the banking system can support the wider economy through financial and business cycles. They:

- ◊ **Increase resilience.** While leaving the overall loss-absorbing capacity for the banking system broadly unaffected, the changes will shift the balance of that capacity towards higher-quality Tier 1 capital.

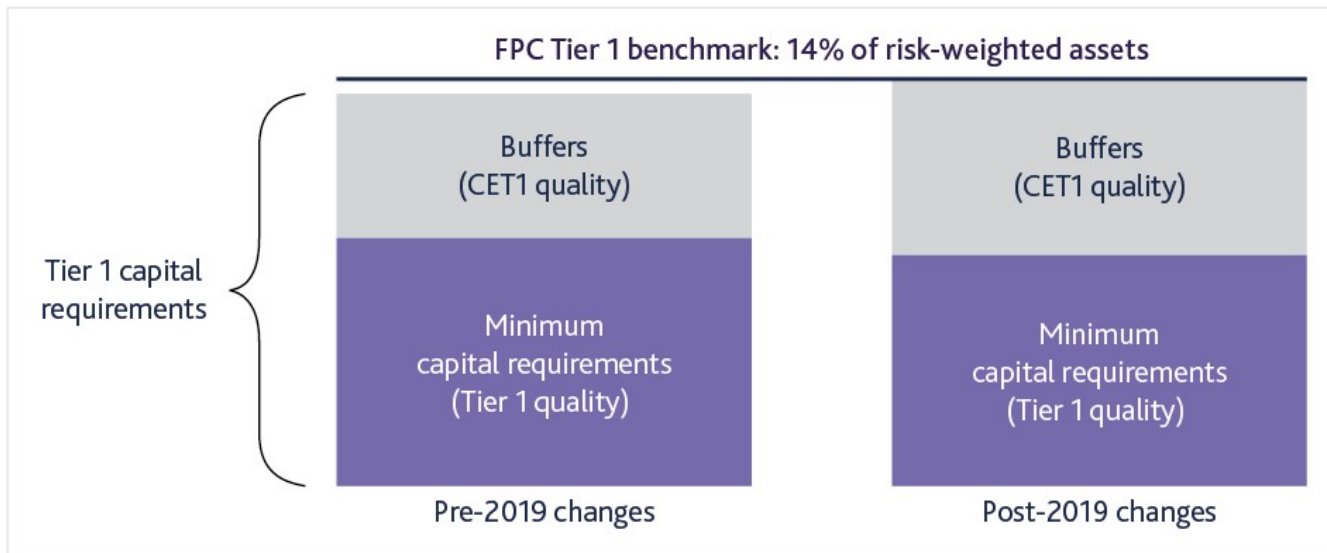
The changes will keep capital requirements for major UK banks in line with the benchmark level first set by the FPC in 2015. That benchmark balances the need for banks to be able to keep lending through downturns with the need for them to provide the finance that supports growth over the medium term.

Unless banks increase their risk appetite significantly, the Committees expect overall capital requirements for major UK banks to remain broadly flat in the coming period.

- ◊ **Improve the responsiveness of capital requirements to economic conditions.** By shifting the balance of capital requirements from minimum requirements that should be maintained at all times towards buffers that can be drawn down as needed, these changes will mean banks are more able to absorb losses while maintaining lending to the real economy through the cycle.

In a stress, the FPC would be prepared to release the CCyB. If the UK CCyB rate was cut from 2% to 0%, this would enable banks to absorb up to £23 billion of losses, which might otherwise lead them to restrict lending. Given losses of that scale, a cut in the UK CCyB rate to 0% could preserve up to £500 billion of banks' capacity to lend to UK households and businesses. This compares with around £100 billion of net lending in the past year.

A higher setting of the UK countercyclical buffer rate in standard conditions will allow the FPC to pursue a gradual approach to raising the buffer as the risks faced by banks build up. It will also ensure that the buffer is sufficiently large when risks are elevated to create the capacity for banks to lend through subsequent downturns.



- ◊ **Enhance resolvability.** The Bank's intention, in resolution, to write down or convert debt to CET1 capital will make resolved banks resilient to further losses, supporting their resolution and minimising the wider economic costs of their failure.

The FPC judges a 2% UK CCyB rate to be appropriate for the current standard risk environment. It is therefore raising the CCyB rate from 1% to 2%. This will take effect in one year.

- ◊ Alongside the Prudential Regulation Authority, the FPC will now pilot options for an enduring approach for incorporating the new IFRS 9 accounting standard into bank stress tests and capital requirements. The approaches to be piloted are consistent with the principle that the new accounting standard, which is being phased in until 2023, should not result in an unwarranted de facto increase in capital requirements.

The FPC stands ready to move the UK CCyB rate in either direction as economic conditions and the overall risk environment evolve. If a major economic stress were to materialise, the FPC is prepared to cut the UK CCyB rate, as it did in July 2016. In the absence of such a stress, the FPC remains vigilant to developments, particularly in the domestic credit environment.

Review of FPC mortgage market Recommendations

The FPC has reviewed its limit on the amount of new mortgage lending at or above 4.5 times the borrower's income, and its calibration of the test that lenders should use to assess whether a borrower can afford a mortgage.

- ◊ Mortgages are households' largest financial liability and lenders' largest loan exposure. In the past, lenders' underwriting standards have loosened sharply and at times shifted from responsible to reckless. This can lead to a significant increase in the number of more highly indebted households.
- ◊ In a downturn, these households are more likely to face difficulties and can cut back sharply on spending to make their mortgage payments. This poses risks to the wider economy and ultimately to lenders.

Households with higher mortgage debt adjusted spending more sharply during the crisis



- ◊ To insure against this, the FPC has, since June 2014, recommended a limit of 15% on the proportion of new mortgages extended at or above 4.5 times a borrower's income. Building on Financial Conduct Authority (FCA) rules, the FPC has also recommended that lenders assess whether borrowers could meet their mortgage payments if their mortgage interest rate switched to the contractual reversion rate and increased by 3 percentage points.

The FPC's measures prevent a loosening of underwriting standards that would otherwise lead to an increase in the number of more highly indebted households. These benefits substantially outweigh any macroeconomic costs. These standards therefore maintain financial stability and support economic growth through the cycle.

Alternative policies to achieve similar benefits would be much more costly to the wider economy and pose greater risks to the Committee's secondary objective to support the Government's economic policy of strong, sustainable and balanced growth.

- ◊ Without the FPC's insurance policies, monetary policy might need to address the financial stability consequences of deteriorating underwriting standards and rapid credit growth. Since monetary policy cannot be targeted at the mortgage market alone, this could generate a potentially severe economic slowdown, far outweighing any macroeconomic costs of the FPC's policies.
- ◊ Alternatively, looser underwriting standards would result in an increase in the number of more highly indebted households and greater economic volatility. In those circumstances, to maintain the resilience of banks, the prudential authorities would need to require banks to have materially higher levels of capital, raising the cost of credit.

The FPC therefore judges it is appropriate to maintain both Recommendations. It views them as structural measures intended to remain in place through cycles in the housing market.

These measures have had limited effect to date on mortgage availability. Lenders have maintained their underwriting standards in recent years.

- ◊ The FPC's limit on high loan to income mortgage lending has not been reached. Mortgage approvals have remained steady. First-time buyers — who tend to have a greater reliance on borrowing at higher loan to income ratios — now account for a higher share of activity than when the measures were introduced. Thus far, the measures have not constrained a material number of prospective home buyers from purchasing a home.

Financial market liquidity

The recent period of volatility in the US dollar repo market shows how markets can become illiquid in the face of shocks and may not be able to rely on dealers to maintain levels of liquidity. Investors should not assume that markets will remain liquid at all times.

- ◊ Post-crisis reforms have contributed to the resilience of, and reduced the interconnections between, dealers that sit at the centre of many financial markets. That, in turn, has reduced the risk of severe and sudden reductions in market liquidity.
- ◊ Maintaining those standards is crucial to supporting financial stability. However, these reforms may have affected how some dealers behave in response to shocks, reducing market liquidity in some circumstances.
- ◊ The FPC emphasises that firms are able to draw down liquidity buffers and draw on Bank of England facilities to support market functioning through the cycle, as well as in a stress. The 2019 biennial exploratory scenario will be used to illustrate how liquidity buffers can be drawn down, how the Bank of England's facilities can be used, as well as how the PRA's approach to supervision would align with this.

Vulnerabilities in open-ended funds

The FPC judges that the mismatch between redemption terms and the liquidity of some funds' assets means there is an advantage to investors who redeem ahead of others, particularly in a stress. This has the potential to become a systemic risk.

As part of the ongoing review by the Bank and FCA of open-ended funds, the FPC has established that there should be greater consistency between the liquidity of a fund's assets and its redemption terms. In that regard:

- ◊ Liquidity of funds' assets should be assessed either as the price discount needed for a quick sale of a representative sample (or vertical slice) of those assets or the time period needed for a sale to avoid a material price discount. In the US, the Securities Exchange Commission (SEC) has recently adopted measures of liquidity based on this concept.
- ◊ Redeeming investors should receive a price for their units in the fund that reflects the discount needed to sell the required portion of a fund's assets in the specified redemption notice period.
- ◊ Redemption notice periods should reflect the time needed to sell the required portion of a fund's assets without discounts beyond those captured in the price received by redeeming investors.

In addition to enhancing financial stability, these changes should also promote funds' ability to invest in illiquid investments, helping to increase the supply of productive finance to the economy through business and financial cycles, in line with the Committee's secondary objective.

Ensuring that rapidly evolving payment systems support financial stability

Innovation in payments could bring significant benefits for users.

At the same time, the ability to transact safely and smoothly is critical to financial stability and the regulatory framework will need to keep pace with innovation. HM Treasury's current review of the payments landscape is an opportunity to ensure that it can.

The FPC considers that the current framework will need adjustment in order to accommodate innovation in this sector. It has therefore developed the following approach that could usefully inform the Treasury review.



- ◊ Regulation of payments should reflect the financial stability risk, rather than the legal form, of payments activities. Firms that are systemically important should be subject to standards of operational and financial resilience that reflect the risks they pose.
- ◊ The systemic importance of any single firm should be informed by whether it is part of one or more systemic 'payment chains' — the set of activities necessary for a payment to be made — and whether its failure could disrupt the end-to-end chain. Innovation has made payment chains more complex. New firms, separate to regulated banks and payment systems have become involved in providing payment services and could become systemically important.
- ◊ In order to ensure the information necessary for regulation and supervision to be effective, all firms above a certain threshold carrying out the activities that make up the payment chain should provide sufficient information to support the identification of systemically important payments firms as they emerge.

In future, digital tokens known as stablecoins might increasingly be used to make payments. Stablecoin-based payment chains pose additional issues for regulation. In assessing how stablecoins should be treated in the regulatory framework, the FPC has considered them against its principle that the regulation of payments activities should reflect the financial stability risks they pose, rather than their legal form. It judges that:

- ◊ Payment chains that use stablecoins should be regulated to standards equivalent to those applied to traditional payment chains. Firms in stablecoin-based systemic payment chains that are critical to their functioning should be regulated accordingly.
- ◊ Where stablecoins are used in systemic payment chains as money-like instruments they should meet standards equivalent to those expected of commercial bank money in relation to stability of value, robustness of legal claim and the ability to redeem at par in fiat.

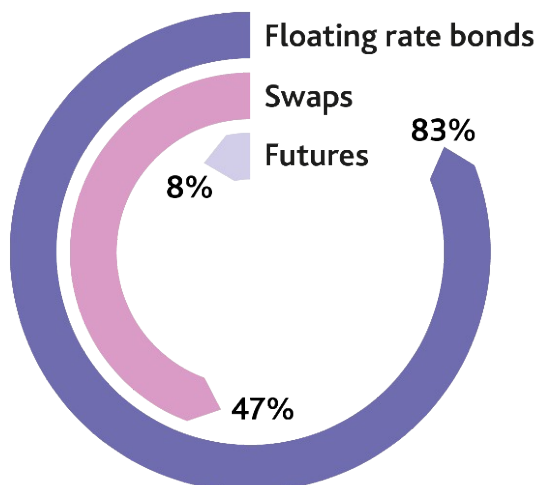
Libra is a high-profile example of a stablecoin proposal. It would have the potential to become systemically important. The regulatory framework that would apply to Libra must be clear and in place in advance of any launch.

The transition away from Libor

Continued reliance of financial markets on Libor poses a risk to financial stability that can only be reduced through a transition to alternative risk-free rates. The intention is that sterling Libor will cease to exist after the end of 2021. No firm should plan otherwise.

Sterling markets show encouraging signs in the development of new products linked to the sterling overnight interbank average (SONIA), and the transition of some legacy products. But important gaps remain so these efforts will need to continue to accelerate in the first half of 2020.


Share of SONIA linked volumes compared to £-Libor, since July 2019





Deadline for transition: End-2021

- ◊ The UK industry working group for transition has set a target to cease issuance of cash products linked to sterling Libor by 2020 Q3. The FPC endorses this target and encourages all lenders and borrowers to take the necessary steps to prepare themselves to meet this timeline.
- ◊ The PRA and FCA have taken steps to ensure that each of the largest regulated firms has nominated a senior manager to be responsible for that firm's transition away from Libor, and the FPC considers this good practice for all firms with material Libor exposures.
- ◊ The Bank is currently reviewing its risk management approach to Libor-linked collateral delivered in its Sterling Monetary Framework.
- ◊ The FPC has also considered further potential supervisory tools that could be deployed by authorities to encourage the reduction in the stock of legacy Libor contracts to an irreducible minimum ahead of end-2021, and will keep this under review in light of progress made by firms in the transition.
- ◊ Compared to progress in sterling Libor markets, transition remains further behind in US dollars, the largest Libor market.


Press conference

 [Financial Stability Report - December 2019 \(PDF\)](#)

 [Record of the Financial Policy Committee meeting held on 13 December 2019 \(PDF\)](#)

 [Chart slides and data \(ZIP\)](#)

 [Governor's opening remarks \(PDF\)](#)

 [Press conference transcript \(PDF\)](#)



FCA and Bank of England encourage switch from LIBOR to SONIA for sterling interest rate swaps from Spring 2020

The FCA and the Bank of England encourage market makers to change the market convention for sterling interest rate swaps from LIBOR to SONIA (the Sterling Overnight Index Average) in Q1 2020.



BANK OF ENGLAND

Published on 16 January 2020

This change is intended to move the greater part of new sterling swaps trading to SONIA and reduce the risks from creating new LIBOR exposures.

Following FCA discussions with market makers, the authorities have identified 2 March 2020 as an appropriate date for this change to happen.

The market for SONIA derivatives is already well-established. Average cleared over-the-counter SONIA swaps exceeded £4.5trillion per month over the past six months, and the traded monthly notional value is now broadly equivalent to Sterling LIBOR.

This change is also reflected in the roadmap set out by the Working Group on Sterling Risk-Free Reference Rates ('the Working Group'). In addition to shifting the swap market convention, the roadmap details other priorities set by the Working Group, including ceasing GBP issuance of LIBOR-based loans by third-quarter 2020 and managing down legacy LIBOR-linked swap portfolios and exposures.

SONIA derivatives are likely to be the appropriate market convention for most contracts, particularly those maturing after 2021. The number of cases where LIBOR contracts are judged to remain appropriate is limited today, and will reduce further as the end of 2021 approaches. Market participants should be aware of the risks if new LIBOR transactions are entered into, and take appropriate steps to establish that their clients are too.

Commenting on this initiative, Edwin Schooling Latter, Director of Markets and Wholesale Policy at the FCA, said:

'We have seen great progress in the development of the SONIA derivatives market. I encourage all market participants to join the initiative to put SONIA first over LIBOR from 2 March. This should help make SONIA the market standard in sterling swaps as is already the case in the bond market.'

Andrew Hauser, Executive Director for Markets, Bank of England, said:

'This move toward a much greater use of SONIA in the sterling derivatives market builds on the strong foundations established in recent years and demonstrates a strong continuing partnership between UK authorities and market participants to bring about a decisive shift away from use of LIBOR ahead of end-2021.'

Use Cases of Benchmark Rates: Compounded in Arrears, Term Rate and Further Alternatives

The Working Group on Sterling Risk-Free Reference Rates

January 2020

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Foreword

The overall objective of the Working Group on Sterling Risk-Free Reference Rates (the "**Working Group**") is to enable a broad-based transition to the Sterling Overnight Index Average ("**SONIA**") by the end of 2021 across the sterling bond, loan and derivative markets. This will reduce the financial stability risks arising from widespread reliance on GBP LIBOR. As part of this work, the Working Group consulted on Term SONIA Reference Rates ("**TSRR**") in 2018.¹ Following this, the Working Group recommended the need for a forward-looking term rate for some participants in the cash markets and to support the transition of certain legacy contracts.²

The prevailing view of the Working Group is that overnight SONIA, compounded in arrears, will and should become the norm in most derivatives, bonds, and bilateral and syndicated loan markets given the benefits of the consistent use of benchmarks across markets and the robust nature of overnight SONIA.³ The future use of a forward-looking term rate in cash markets should be more limited than the current use of LIBOR. So, where possible, counterparties are encouraged to transition to overnight SONIA compounded in arrears.

In this context, a new Term Rate Use Case Task Force (the "**Task Force**") was formed to identify where the usage of SONIA compounded in arrears is appropriate and provide guidance where the usage of alternative approaches, such as a TSRR, may be necessary. Although a sterling TSRR does not exist today, administrators are working on the development of an IOSCO-compliant TSRR, and it is expected that TSRRs will be published in Q1 2020 for a period of observation.

This paper (the "**Working Paper**") considers the use of SONIA by market participants. In particular, it:

- outlines why the use of TSRR must be limited
- considers use cases within cash markets where a TSRR would be beneficial and where overnight SONIA compounding in arrears is likely appropriate, taking into consideration:
 - the operational capability and the sophistication of the borrower
 - the structure and characteristics of a product and its use

It is addressed to financial firms and non-financial end users, such as corporates, small to medium size enterprises (SMEs), retail consumers and others, who will be impacted by the intended cessation of GBP LIBOR.

This Working Paper was considered by the Working Group on 5 December 2019 which agreed to its publication. The Working Group is particularly grateful to the Use Case Task Force, for having developed this Working Paper.

The Bank of England and the Financial Conduct Authority ("**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.

¹ <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/consultation-on-term-sonia-reference-rates>

² <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/term-sonia-reference-rates-consultation-summary-of-responses.pdf>

³ <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/statement-on-the-progress-on-adoption-of-risk-free-rates-in-sterling-markets.pdf>

Executive summary

The Working Group on Sterling Risk-Free Reference Rates set up a Term Rate Use Case Task Force (the “**Task Force**”) to provide guidance on the need for and potential usage of Term SONIA Reference Rates (“**TSRR**”), if available, alongside SONIA compounded in arrears, across different client segments. The Task Force consisted of banks, non-banks and trade associations (ACT, LMA, ICMA, UK Finance) in order to analyse the broad range of products in the cash market that use LIBOR today. For each segment the Task Force considered both the client and operational suitability, with results where possible validated with representative clients and trade bodies representing those segments.

The Task Force considered that use of SONIA compounded in arrears was appropriate and is likely operationally achievable for approximately 90% by value of the Sterling Libor loan market sampled and that the remaining 10% by total loan value would likely require alternative rates. The 10% requiring alternative rates consists primarily of lower value loans to a wide range of smaller borrowers and therefore accounts for a somewhat greater proportion when measured by borrower numbers rather than total loan values. These proportions are based on estimates from members of the Task Force that have been collected using an anonymous survey by the RFR Secretariat.

Current users of SONIA compounded in arrears include larger and more sophisticated corporates and specialist lending sectors. Smaller corporate and retail clients for whom simplicity and/or payment certainty is a key factor may wish to consider alternative rates such as a fixed rate, the Bank of England’s Bank Rate (the “**Bank Rate**”, which is an overnight rate), or a SONIA term rate, if available.

To continue with the current market practice, alternative rates should also be considered for trade and working capital, which use discounted cash flows and therefore require a forward-looking term rate with the ability to interpolate mid period dates, and Islamic finance which can pay variable rates of return so long as the variable element is pre-determined.

Consistent with the view of the RFRWG, the UK authorities have made clear their preference for the market to adopt a broad-based transition to SONIA compounded in arrears for new transactions, with use of a TSRR being more limited than the current use of LIBOR⁴. This Working Paper has provided further clarity on the potential usage of a TSRR going forward and also why compounding in arrears is likely to be preferred for most types of new business.

⁴ <https://www.fca.org.uk/news/speeches/libor-preparing-end>

Progress in LIBOR transition and necessary next steps in loan markets

In April 2017, the Working Group recommended the SONIA benchmark as their preferred risk-free rate (RFR). Since then, the Working Group has focussed on supporting transition away from LIBOR across sterling markets.

SONIA compounded in arrears has been traded in the derivatives market for over 20 years, with interest calculation and payment conventions well established. Market participants using derivative markets to hedge or take positions will want access to the most liquid markets. Market liquidity in derivatives is expected to shift further from LIBOR to SONIA in 2020, such that it becomes the most common benchmark for GBP derivatives. The FCA and the Bank of England encourage market makers to change the market convention for sterling interest rate swaps from LIBOR to SONIA in Q1 2020. This change is intended to move the greater part of new sterling swaps trading to SONIA and reduce the risks from creating new LIBOR exposures and is also reflected in the timeline set out by the Working Group. Following FCA discussions with market makers, the authorities have identified 2 March 2020 as an appropriate date for this change to happen.

In the cash market, overnight SONIA compounded in arrears has become the market norm for floating rate sterling bonds and there is strong liquidity developing for securitisations that reference overnight SONIA compounding in arrears.

Loan markets have been slower to progress. Loans referencing overnight SONIA compounded in arrears have been extended to corporate borrowers, demonstrating proof of concept and that borrowers are capable of adapting to this new rate. These initial loans have been offered under pilot schemes by banks while the necessary infrastructure to support broad usage of compounded in arrears SONIA products are completed.

Barriers to widespread use of loans referencing overnight SONIA compounded in arrears and ending reliance on LIBOR exist, but work is underway to address these barriers. Specifically:

- Loan IT system providers are updating their systems to make them compatible with overnight SONIA compounded in arrears
- Treasury management system providers are undertaking a similar exercise to ensure that corporates can manage their cash flows accordingly
- The Loan Market Association (LMA) and market participants have developed standardised documentation to help facilitate syndicated lending and club loans
- Market conventions for calculating interest payments are being established through the execution of new SONIA loans and
- The development of alternative products to meet the needs of clients who prefer variable rates that provide cash flow certainty. These products can be developed using already available rates, such as the overnight Bank Rate (which SONIA closely tracks). However, some market participants have indicated they would like to offer products referencing the Term SONIA Reference Rate that is still being developed.

The Working Group has set a target of end Q3 2020, to cease issuance of GBP LIBOR-based cash products that mature beyond end-2021. Due to the expected decline in the liquidity in Libor based derivatives, a potential risk that firms and borrowers may wish to consider is that offering Libor based loans may include an increased risk in cost of hedging.⁵

Market participants in the loan market are continuing to work towards addressing the barriers to facilitate and encourage transition towards SONIA in order to meet this target. Market infrastructure - including conventions, deal booking and settlement systems - are expected to be made available before Q3 2020 to enable SONIA compounded in arrears lending at scale. The use of a TSRR will only be appropriate for those products where operational necessity precludes the use of a compounded in arrears product, another existing available rate or where the client has very simple needs (e.g. does not use derivative products).

⁵ For further details please see: <https://www.fca.org.uk/news/speeches/next-steps-transition-libor>

Use of Term SONIA Reference Rate (TSRR)

In December 2018, the Working Group published a statement inviting interested benchmark administrators to consider responses to the TSRR consultation.⁶

The development of a TSRR is progressing well. Four administrators (FTSE Russell, ICE Benchmark Administration, Refinitiv and IHS Markit) have confirmed they are working on the development of a TSRR and have presented their plans to the Working Group. There are methodological differences across the four administrators, meaning that the rates produced are likely to be marginally different.

All four are current authorised benchmark administrators and expect to produce IOSCO compliant rates. The methodologies rely on some combination of actual OIS trade data, tradable quotes provided by market makers and OIS futures data. The FCA has confirmed that sufficient OIS market makers have given in principle agreement to provide quotes to support the production of a TSRR.

Timing

It is expected that TSRRs will be published in Q1 2020 for a period of observation so that market participants can understand the nature and behaviour of the rates before they are used in products. Subject to success it is hoped that TSRRs will be made available later in 2020 for use in products and to enable transition of legacy products, where appropriate. The Task Force has suggested that TSRRs should be made available before the Q3 2020 date to support market participants that would require alternative rates.

Limiting Usage of a SONIA TSRR

The use of a SONIA TSRR will be limited. The UK authorities have made clear their preference for the market to adopt a broad-based transition to SONIA compounded in arrears, with use of a TSRR being limited. The Working Group and Task Force members are also supportive of these objectives.

SONIA compounded in arrears is expected to be the primary vehicle for LIBOR transition. The main benefits of SONIA compounded in arrears is that:

- It is inherently more robust than the prospective TSRR. For example, a three-month compounded SONIA contract is built on overnight market transactions worth on average ~£42 billion per day. Over 60 trading days (the number of trading days in 3 months), this means that ~£2.65 trillion of transactions underlie three-month compounded SONIA. This market is currently 13 times the volume of transactions in the SONIA OIS markets on an average day.
- Participants with hedging needs will want cash products to be on the same basis as derivatives to ensure effective and cost-efficient hedging.
- It can be used consistently across multiple markets, including derivatives, bonds, and securitisation markets, allowing users to have consistent and reliable costs of borrowing.
- While compound in arrears rates will be available in all currencies where an RFR rate is available, term rates may not be made available in all currencies. Using compounding in arrears therefore supports multi-currency borrowers to apply a consistent approach where possible.

SONIA compounded in arrears will need to be the primary vehicle for LIBOR transition for new deals because, if use of a TSRR became widespread, there is a risk of reintroducing structural vulnerabilities similar to those associated with LIBOR.⁷ These risks can be avoided by limiting the use of TSRRs to certain product use cases and certain borrowers, as these vulnerabilities do not apply in the much more liquid overnight markets.

For these reasons, the Task Force has considered where SONIA compounded in arrears and TSRRs are suitable and appropriate for different product markets and different users, together with alternative options such as the overnight Bank Rate or fixed rate for clients or specific products which may struggle to adapt to compound in arrears rates over time.

⁶ <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/libor-transition-and-development-of-a-term-rate-based-on-sonia.pdf>

⁷ While several hundred \$trillion worth of financial contracts reference LIBOR, the underlying market determining the rate was comparatively smaller

Approach

To consider these issues, the Task Force sought the views of its members. The membership of the Task Force includes the largest lending institutions in the UK and relevant product and client aligned trade associations to ensure the broadest view of potential use cases. The Task Force also engaged externally with sector specific trade associations (e.g. social housing, local councils) and clients to validate its findings.

Assessment Criteria

The Task Force identified the following factors in determining whether a TSRR was necessary and appropriate for certain product use cases and client types:

- the structure and characteristics of a product
- the operational capability and the sophistication of the borrower or end-user

Segmenting the market

The group approach taken was to segment the market by product and client type, assessing both client and operational suitability. In segmenting by client, the Task Force considered both the size and sophistication of the client and, where there were specific differences in the product, also the size and sophistication of the sector, so segregating project finance, real estate and public sector borrowings.

Products	Client Breakdown	Details	Definition
Bonds/ Loans/ Trade	Large Corporate/ Leverage	Sponsor/ Leverage Large Corporate	Corporate deals/ Sponsor lead acquisitions/ recapitalisations with a deal size £25m
Loans/ Trade	Mid to Large Corporate/ Specialist Finance	Financial Institutions	Banks, insurance providers, asset managers, funds, hedge funds and broker dealers
		Mid to Large Corporates	Annualised revenue >£25m and deal size £10-£25m.
		Social Housing	Lending to Social Housing firms
		Education/ Local Authority	Lending to schools/ Higher Education/ Local Authorities
		Project Finance	Financing of a major independent capital investment
		Real Estate	Commercial Real Estate firms
	Export Finance/ Emerging Market	Export Finance	Funding to outsized capital expenditure with export finance guarantee
		Emerging Markets	Lending to emerging markets
	Mid Corporate/ Private Banking & Retail	Mid Corp	Annualised revenue >£8.5m and <£25m. Excludes specialised lending
		Small, Micro Size Enterprise	Annualised revenue <£8.6m
Retail Mortgages		Retail clients	
Wealth/ Private Bank		Offers Banking and affluent clients, families and fiduciaries based in the UK, offshore or emerging markets	
Product Exception	Trade & Working Capital	Trade & Working Capital	All Trade & Working Capital products including discounting/ Letters of credit, supply chain finance etc
	Islamic Finance	Islamic Finance	Islamic facilities forbid interest payments on loans

Each Task Force member was asked to anonymously classify the client and product suitability for their institution, based on a defined scale, and also the number of clients and total value of loans per bucket, and submit data to the RFR Secretariat. The aggregated and anonymised results were reviewed by the Task Force for accuracy and then validated with clients and sector specific trade associations through face to face meetings where possible (see appendix 1).

The Association of Corporate Treasurers (ACT) represented client perspectives within the Task Force and alongside UK Finance helped to validate the findings with sector specific trade associations and representative clients.

Product Categorisation

In considering appropriate product use cases for TSRRs to replace GBP LIBOR, the Task Force segregated products into three broad categories: derivatives; bonds; loans and other cash products.

Derivatives

As discussed, the derivatives market has used overnight SONIA compounding in arrears for over 20 years. This market has functioned well and liquidity in SONIA derivatives markets has continued to build with approximately 50% by value of Sterling derivatives traded now referencing SONIA.

The UK authorities have also been clear that because derivatives represent a particularly large exposure to certain IBORs, these markets need to be built on the more robust overnight RFRs to ensure financial stability.⁸ Furthermore, the prospective RFR-derived TSRRs can only be robustly created if OIS derivatives markets are highly liquid because they are the predominant market for most derivatives. So, robust liquidity in SONIA derivatives is important to maintain the resilience of these markets and to ensure financial stability.

For these reasons, this Working Paper does not consider derivatives, limiting its assessment to cash products.

Bonds

Bond issuance, including securitisation, was initially seen as a potential use case for a TSRR. However, this market has demonstrably adopted overnight SONIA compounded in arrears for all new GBP issuance over the last year.

Loans and other cash products

Loans and other cash products are seen as the primary markets that may benefit from a TSRR. The Task Force therefore considered various use cases in the loans market, including other specialist areas such as trade and working capital, Islamic finance and asset finance.

⁸ <https://www.fsb.org/wp-content/uploads/P120718.pdf>

Findings

The Task Force considered that use of SONIA compounded in arrears was appropriate and is likely operationally achievable for approximately 90% of new loan deals by value and that alternative rates would likely be required for 10% of new loan deals by value based on the anonymous survey carried out by the Task Force.

Areas that can use SONIA compounding in arrears

More sophisticated borrowers are capable of borrowing in markets linked to overnight SONIA compounded in arrears and are, in nearly all cases, likely capable of understanding the benefits, risks, and potential costs associated with this rate and adapting systems and procedures over time.

This includes larger and more sophisticated corporates and the specialist lending sectors such as project finance, real estate and public sector who are likely to make use of a range of financial products, so will require alignment between cash and derivative products to ensure effective and efficient hedging.

Areas requiring an Alternative Rate

Smaller corporate, wealth and retail clients, for whom simplicity and/or payment certainty is a key factor, may wish to consider alternative rates. Small corporates and small to medium size enterprises (SMEs) typically have no dedicated treasury function and are less likely to be able to adapt to the technology or process changes needed, or are more likely to be prohibited by the cost of adoption to accommodate SONIA compounded in arrears.

Where simplicity or payment certainty is the key factor, fixed rates, or the overnight Bank Rate may be preferred. There may, however, be some instances where a forward-looking term rate is a good fit with business needs.

The Task Force also found a number of products where the use of SONIA compounded in arrears will likely create operational difficulty regardless of the sophistication of the borrower. These products are mainly in USD and therefore require a cross currency solution, but there are deals with a GBP component.

Trade & Working Capital

Trade and working capital products such as supply chain finance and receivable facilities require a term rate or equivalent to calculate forward discounted cash flows to price the value of assets into the future (see appendix 2). The product requires a rate that is transparent and observable to all parties. Clients typically do not have access to live market curves, which may be available in a dealing room.

Export Finance/ Emerging Markets

Export finance and emerging market loan clients typically require much more time to make payments of interest and principal payments, sometimes in excess of 30 days, so need a term rate or equivalent rate to help determine interest payments out into the future.

Islamic Facilities

Islamic facilities can pay variable rates of return, so long as the variable element is pre-determined.

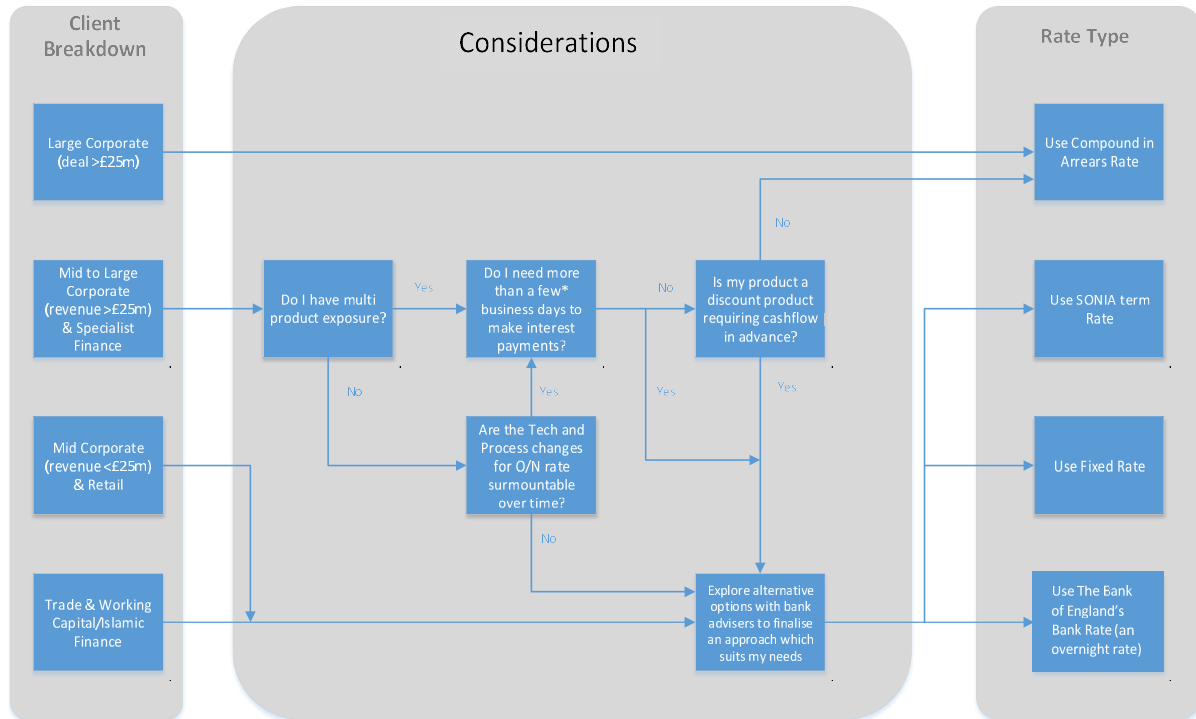
Legacy Contracts

Clients should consult with their banks and advisors as to whether to switch their existing contracts to SONIA compounded in arrears, or to one of the alternative rates. As mentioned, overnight SONIA compounding in arrears has become the market norm for floating rate sterling bonds, and there is strong liquidity developing for securitisations that reference overnight SONIA compounding in arrears. Therefore, where possible, parties are encouraged to transition to overnight SONIA compounded in arrears. However, a TSRR may be useful in calculating fair replacement rates for legacy LIBOR contracts that cannot easily be amended to overnight rates compounded in arrears, or for deals with a limited period to maturity where it would not be cost effective to transition from GBP LIBOR to SONIA compounded in arrears.

Products	Client Breakdown	Details	Definition	Balance %	Recommended Rate
Bonds/ Loans/ Trade	Large Corporate/ Leverage	Sponsor/ Leverage Large Corporate	Corporate deals/ Sponsor lead acquisitions/ recapitalisations with a deal size £25m	50%	Compounded in Arrears
Loans/ Trade	Mid to Large Corporate/ Specialist Finance	Financial Institutions	Banks, insurance providers, asset managers, funds, hedge funds and broker dealers	40%	Compounded in Arrears
		Mid to Large Corporates	Annualised revenue >£25m and deal size £10-£25m.		Compounded in Arrears
		Social Housing	Lending to Social Housing firms		Compounded in Arrears
		Education/ Local Authority	Lending to schools/ Higher Education/ Local Authorities		
		Project Finance	Financing of a major independent capital investment		
		Real Estate	Commercial Real Estate firms		
	Export Finance/ Emerging Market	Export Finance	Funding to outsized capital expenditure with export finance guarantee	10%	Term/ Alternative Rate
		Emerging Markets	Lending to emerging markets		
	Mid Corporate/ Private Banking & Retail	Mid Corp	Annualised revenue >£8.5m and <£25m. Excludes specialised lending	10%	Term/ Alternative Rate
		Small, Micro Size Enterprise	Annualised revenue <£8.6m		
Retail Mortgages		Retail clients			
Wealth/ Private Bank		Offers Banking and affluent clients, families and fiduciaries based in the UK, offshore or emerging markets			
Product Exception	Trade & Working Capital	Trade & Working Capital	All Trade & Working Capital products including discounting/ Letters of credit, supply chain finance etc	10%	Term/ Alternative Rate
	Islamic Finance	Islamic Finance	Islamic facilities forbid interest payments on loans		

Decision Tree Model to determine SONIA Compounded in Arrears vs TSRR usage

The need for an alternative to SONIA compounded in arrears can be driven by product type or by client capability. Client needs are likely to vary across the market so it is not appropriate to be prescriptive on the use of compounded in arrears SONIA or alternative rates for each and every case. The Task Force has developed a decision tree to assist clients when considering which rate to use as a replacement for LIBOR. The initial premise should be to use compounded in arrears SONIA where possible.



***SONIA compounded in arrears – Lag**

All SONIA bond issuance and loan transactions to date have used a 5 day lag, to provide a window at the end of the interest period for calculating, agreeing and reconciling the SONIA rate, interest amounts and making the actual payment on the due date. The decision tree assumes the number of lag days could be varied on client or system needs, but any variance in market standard could lead to lower liquidity and increased costs. Where clients require lags of over 10 days, clients should discuss this with their banks and advisers to see whether a compounded in arrears rate remains appropriate or whether an alternative rate should be used.

Further work

The Task Force highlighted a number of other observations, which should be considered to enable effective transition from GBP LIBOR.

Client engagement

Larger corporate clients are generally aware of LIBOR reform. They understand the current risks around LIBOR and that SONIA compounded in arrears is likely to be the best solution to enable effective economic hedging across a range of products at a lower cost than using other rate alternatives going forward.

The FCA has recently published a set of Questions and Answers (Q&As) to provide clarity on its conduct expectations of firms during the transition away from LIBOR.⁹ Through these Q&As, the FCA communicated that firms should be engaging with their clients to raise awareness and provide education on the general implications and timing of LIBOR transition for new and existing contracts.

Therefore, engagement with corporate clients is expected to increase in 2020, but transition away from LIBOR will require:

- Banks to offer products linked to a suitable alternative rate
- Further clarity on market conventions¹⁰
- For multi-currency loan clients, greater certainty on the long term solution for other currencies (notably EUR and USD)
- Infrastructure changes to Treasury systems.

Once a corporate is aware of the transition, one of the major internal challenges in transitioning to RFRs is the ability of Treasury and Finance teams to explain the changes and impacts to their boards and shareholders. Industry driven materials could help to facilitate this education process.

Below the level of large corporates, specialist lending firms and smaller corporates have much less awareness of transition and the required education effort here is much greater. To accelerate transition, further education and awareness is required early in 2020. A free to use, trusted RFR calculator would also help to accelerate transition by providing confidence to validate bank calculations.

The Communication and Outreach subgroup is considering ways to increase client awareness and engagement across this part of the market.

For additional help and support, the Task Force recommends that clients engage with their banks, advisors and representative trade associations. To provide feedback on this Working Paper, borrowers should contact their representative trade association who can share feedback with the RFRWG and the UK authorities.

Tools and resources to improve client understanding of how products function

Smaller institutions and SMEs consider that the availability of a free to use tool from a trusted source to publish SONIA rates and calculate interest would greatly assist LIBOR transition. The Infrastructure Sub-Group is considering how such a tool might be developed and made available.

Clients may also benefit from a user guide comparing the various different alternatives to compounded in arrears SONIA (e.g. overnight Bank Rate, Fixed Rate, TSRR). The Communication and Outreach subgroup is considering constructing a user guide.

⁹ <https://www.fca.org.uk/markets/libor/conduct-risk-during-libor-transition>

¹⁰ <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/statement-and-summary-of-responses-to-sonia-conventions-discussion-paper.pdf>

Addressing remaining barriers to transition in loan markets

The Working Group has established the Sub-group Benchmark Transition Issues in Syndicated Loan Markets and the Loans Enabler Task Force to address remaining barriers to transition in loan markets, in relation to:

- Standardised loan documentation
- Additional considerations for Project Finance and Real Estate deals
- Loan IT systems
- Treasury management systems
- Trade booking and settle systems, and

It is intended that these barriers will be addressed so that loan products can be made available at scale before the end Q3 2020.

Appendix 1: Engagement with Trade Associations & Clients

The Working Group is particularly grateful to the following Trade Associations and organisations who provided feedback on the works findings.

Product	Client Breakdown	Details	Trade Body/ Engagement
Bonds/ Loans/ Trade	Large Corporate/ Leverage	Sponsor/ Leverage Large Corporate	Association of Corporate Treasurers
Loans/ Trade	Mid to Large Corporate/ Specialist Finance	Mid to Large Corporates	
		Social Housing	National Housing Federation, Homes England, Community Housing Cymru, Northern Ireland Federation of Housing Associations
		Education/ Local Authority	British Universities Finance Directors Group/ Chartered Institute of Public Finance & Accountancy
		Project Finance	Bank Specialist Businesses
		Real Estate	
	Mid Corporate	Mid Corp	UK Finance
Product Exception	Trade Discounting	Trade & Working Capital	Bank specialist businesses

Appendix 2: Trade & Working Capital Considerations

	Supply Chain Finance	Receivables Finance	Documentary Trade
Product Definitions	<ul style="list-style-type: none"> A bank accepts future dated payment instructions from the client to their suppliers. A bank offers supplier the option to receive amount early, at a discount. A bank collects the full value of the payment from the client on the original payment date. A bank takes non payment risk against its client. 	<ul style="list-style-type: none"> A bank purchases client's invoices / receivables at a discount. May be a single asset purchase or part of a portfolio of debtors/assets. Client collects from the debtors and pays the full value to the bank. In the event of non payment, the bank claims directly against the debtor 	<ul style="list-style-type: none"> Client requests a bank to issue a letter of credit / guarantee in favour of its supplier, ensuring future payment to obtain goods today. Client might also be the beneficiary of a letter of credit issued by a bank. Supplier or client may request discounted early payment. Other discountable products include promissory notes, bills of exchange.
Calculation Methodology	$\text{Discount} = \frac{\text{Value} \times (\text{tenor applicable LIBOR}^* + \text{Margin})}{365} \times \text{Tenor}$ <p><small>* Tenor applicable LIBOR based on segmented time periods (1W, 1M, 3M, 6M etc.)</small></p>	$\text{Discount} = \frac{\text{Value} \times (\text{tenor interpolated LIBOR}^* + \text{Margin})}{\text{Adjustment factor}^{**}} \times \text{Tenor}$ <p><small>* Tenor interpolated LIBOR primarily 30-90 days</small> <small>** NPV adjustment factor = $\frac{\text{All In rate} \times \text{tenor}}{365} + 1$</small></p>	$\text{Discount} = \frac{\text{Value} \times (\text{tenor interpolated LIBOR}^* + \text{Margin})}{\text{Adjustment factor}^{**}} \times \text{Tenor}$ <p><small>* Tenor interpolated LIBOR primarily 30-180 days</small> <small>** NPV Adjustment factor = $\frac{\text{All In rate} \times \text{tenor}}{365} + 1$</small></p>
Need for a Term Rate	<ul style="list-style-type: none"> The pricing for these products is based on a discounting principle which, in effect, is a bank buying assets for a pre-agreed price based on a term rate. It is important to note these products have direct links to providing finance to the real economy. Currently, term reference rates are transparent and observable, updated and published daily. The benchmark is used as a starting reference in trade finance products to agree an upfront discounted cash flow, usually plus margin, for an agreed period. Tenor interpolation, and therefore forward looking term rates, are essential as quoted overnight rates alone (e.g. O/N LIBOR and Sonia) would be insufficient for this purpose. Similarly this applies when considering Bank Rate as a potential alternative. 		

Progress on the Transition of LIBOR-Referencing Legacy Bonds to SONIA By Way Of Consent Solicitation

The Working Group on Sterling Risk-Free Reference Rates

January 2020

Statement on behalf of the Working Group on Sterling Risk-Free Reference Rates - Progress on the transition of LIBOR-referencing legacy bonds to SONIA by way of consent solicitation

The Sterling Risk-Free Rate Working Group (RFR WG) has welcomed the adoption of SONIA in new public issues of sterling floating rate notes, covered bonds and securitisations¹. But the RFR WG recognises that there are certain outstanding bond contracts which reference sterling LIBOR and are due to mature beyond the end of 2021 – so called ‘legacy bonds’ – which need to be transitioned to a SONIA-based reference.

In the sterling bond market, many legacy bond contracts contain fallback provisions which may adversely impact the bond (for instance, by falling back to a fixed rate) or may otherwise result in contractual uncertainty, following the permanent discontinuation of LIBOR, or upon a declaration that LIBOR is no longer representative. The RFR WG considers that the most orderly transition from LIBOR to SONIA would be to replace or amend legacy bond contracts referencing LIBOR *before the fallback provisions are triggered*. In many cases, this can be achieved by way of consent solicitation: a market-based process generally set out in bond documentation which enables an issuer to amend bond conditions by way of bondholder consent.

To date, eight consent solicitations with a total nominal value of £4.2 billion have been announced publicly as successful in transitioning English law legacy bond contracts from LIBOR to SONIA.

The RFR WG welcomes the consent solicitations that have already taken place or are underway to transition legacy bond contracts from LIBOR to SONIA, and encourages all market participants to engage with the task of transitioning as many legacy bond contracts as possible (including by way of consent solicitation). Although consent solicitation may not be feasible or appropriate for *all* legacy bonds, undertaking consent solicitations will help to reduce market participants’ exposure to LIBOR risks, and will reduce market disruption when LIBOR is permanently discontinued or is declared no longer representative.

Unless already provided for in the legacy bond contract, there are no mandatory terms of transition and parties may therefore agree on an appropriate arrangement. By way of illustration, in each of the consent solicitations which have already taken place: the interest rate provisions in the conditions of bonds have been amended so that, rather than referencing LIBOR going forward, they reference SONIA compounded daily in arrear over the relevant interest period, plus a fixed spread adjustment. The methodology for calculating the spread adjustment, which is used as a proxy to replicate the bank term credit risk premium and other influences on LIBOR, has been the linear interpolation for the relevant tenor of LIBOR vs SONIA basis swaps, which is then added to the original margin of the legacy bond.

The announcement of finalised arrangements for calculating a spread adjustment in contractual fallbacks in *derivatives* contracts², may further increase market participants’ confidence in using market prices to price transitions to SONIA. Moreover, market participants may wish to consider whether current levels of liquidity in both the LIBOR and SONIA markets are conducive to completing transitions to SONIA in the months ahead based on this methodology.

To encourage and support market participants in transitioning more English law legacy bond contracts from LIBOR to SONIA by way of consent solicitation, the RFR WG is publishing with this statement considerations for the sterling bond market based on the experience of RFR WG members in undertaking consent solicitations so far. The considerations will be kept under review as the market gains more experience of consent solicitations for the transition from LIBOR to SONIA. They do not

¹ SONIA-linked FRN issuance amounts to over £40 billion since June 2018, SONIA-linked securitisations distributed to investors amount to over £10 billion, and public issuance of LIBOR-linked sterling FRNs and securitisations with a maturity beyond the end of 2021 has all but ceased.

² <https://www.isda.org/2019/11/15/isda-publishes-results-of-consultation-on-final-parameters-for-benchmark-fallback-adjustments/>

impose legal or regulatory obligations on market participants, and are solely intended to facilitate the orderly transition of legacy transactions.

This statement is complementary to the forthcoming work of, and any publications by, the Cash Market Legacy Transition Task Force, that has been established by the RFRWG. That Task Force will be producing further material to assist market participants in transitioning legacy wholesale market bond and loan transactions to using the risk free rate benchmark.

Commenting on the success of the consent solicitations that have already taken place and on the release of the considerations, Tushar Morzaria, the Chair of the RFR WG, said: *“With the adoption of SONIA well underway, attention now must turn to the orderly transition of legacy transactions from LIBOR to SONIA. The success of the transitions already undertaken, together with the release of the considerations, indicate that the relevant tools are available, and it is now up to all market participants to use them”.*

Edwin Schooling-Latter, Director of Markets and Wholesale Policy at the FCA, said: *“SONIA has now become the norm in new issuance of floating rate sterling bonds and securitisations, and it is encouraging to see the successful transition of LIBOR-referencing securities to SONIA. But there is still much more to do. We encourage market participants to build upon this momentum, and thank them for sharing these lessons learned from successful consent solicitations to date.”*

Andrew Hauser, Executive Director Markets, Bank of England, said: *“I am very encouraged by today’s publication, which demonstrates the constructive developments that have been made in legacy bond markets with regards to transition from LIBOR. This shows that transitioning existing bond contracts from LIBOR can be achieved in an orderly, effective manner – something which is crucial to ensuring a smooth transition. The Bank of England is supportive of this initiative and I urge all market participants, using the considerations set out in today’s publication, to take steps that build on the substantial progress that has been made.”*

Considerations for the conduct of consent solicitations to transition English law legacy bond contracts from LIBOR to SONIA

1. While market precedents are helpful in providing direction for the conduct and outcome of consent solicitations, each issuer and each bond is unique. Market participants should therefore carefully consider the suitability of consent solicitation as an appropriate course of action in respect of *each* relevant legacy bond, in all cases assessed on its own merits.
2. Given the interest of both issuers and investors in removing exposure to LIBOR risks, consent solicitations undertaken for this purpose have not typically involved the payment of consent fees (or any other incentives to vote on an extraordinary resolution to give effect to the proposed amendments to the conditions of the bond).
3. To facilitate open dialogue between an issuer and investors regarding the terms of the consent solicitation, the issuer may consider it appropriate to pre-announce a consent solicitation by way of an RNS announcement.
4. The principal aim of these consent solicitations is likely to be securing those amendments that are required for the transition of the relevant bonds to a replacement risk-free rate, and any necessary consequential amendments. Issuers and investors should together consider the necessity, as well as the consequences, of making any *additional* amendments to the conditions of the bonds.
5. Parties should consider the implications of any delay between the date on which the extraordinary resolution is passed and the pricing date for any adjustment spread relating to the replacement risk-free rate (the "Pricing Date") since market prices may move. This is also relevant to the timing between the Pricing Date and the date on which the amendment is deemed to be effective -in which case, a suitable adjustment mechanism may be necessary.
6. In order to ensure an efficient and methodical consent solicitation process, and to give investors sufficient time in which to analyse thoroughly the proposed amendments to the conditions of the bonds, all parties to the consent solicitation (including custodians, agents and trustees, if relevant) should have regard to the timing deadlines specified in the relevant bond documentation and ensure the timely sequencing of the steps required to give effect to the consent solicitation, including, but not limited to, delivery of notices and consent solicitation documentation to investors.

Consultation on credit adjustment spread methodologies for fallbacks in cash products referencing GBP LIBOR

The Working Group on Sterling Risk-Free Reference Rates

December 2019

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Foreword

The overall objective of the Working Group on Sterling Risk-Free Reference Rates (the "**Working Group**") is to enable a broad-based transition to SONIA by the end of 2021 across the sterling bond, loan and derivative markets. This will reduce the financial stability risks arising from widespread reliance on GBP LIBOR.

The Bank of England and the Financial Conduct Authority ("**FCA**") are each ex-officio members of the Working Group. The views and outputs set out in this Consultation 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.

This Consultation Paper is addressed to cash market participants who are considering how to approach the differences between GBP LIBOR and SONIA when considering fallbacks to their contracts. The active conversion of legacy GBP LIBOR products to reference SONIA and those pre-cessation fallbacks that are similar to active conversion (early opt-in fallback triggers), are discussed briefly but are outside the scope of this Consultation Paper and will be considered in more detail in a future publication by the Working Group.

Derivatives markets participants have since July 2018 been in the process of being consulted on fallbacks from IBORs (including GBP LIBOR) to overnight rates (including SONIA). These consultations by ISDA have included a consideration of the credit adjustment spread. However, the ISDA consultations focused on this for derivatives market fallbacks only. It is important that end users in the cash markets (including the loan and debt capital markets) also consider the issue of credit adjustment spreads in respect of fallbacks in their contracts from GBP LIBOR to SONIA; this Consultation Paper is designed to facilitate such consideration.

The release of this Consultation Paper also fulfils one of the key deliverables detailed in the roadmap published by the Working Group for 2019-2021 on 5 June 2019.¹ It is expected that the feedback to this Consultation will assist the market in forming a view on credit adjustment spreads in cash markets, which will ultimately assist the objective of the Working Group of a smooth transition away from GBP LIBOR to SONIA.

This Consultation Paper was considered at the meeting of the Working Group on 7 November 2019 where it was agreed to be published. The Working Group is particularly grateful to the Loan Market Sub-Group chaired by Clare Dawson of the LMA for having developed this Consultation Paper.

¹ <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/roadmap>.

Section 1: Executive summary

Background

Used globally, LIBOR is very widely referenced in derivative, floating rate note ("FRN"), loan and securitisation documentation, and in a range of consumer lending instruments, such as mortgages and student loans.

Since July 2017, there has been an increased focus in the financial markets on the need to transition away from LIBOR and to include more robust fallbacks in contracts referencing LIBOR that will mature after the end of 2021 (the end-date stated by the FCA for LIBOR benchmark publication).²

Working groups in the LIBOR currency jurisdictions have selected replacement rates for LIBOR; all have proposed alternative near risk-free rates ("RFRs").³ These RFRs are not, however, economically equivalent to LIBOR. The relevant RFR rate needs to be adjusted to account for: (i) the fact that the RFR is an overnight rate and not a term rate;⁴ and (ii) the various premia included within LIBOR (i.e. a term liquidity premium and a bank credit risk element). In most cases, the RFRs are therefore expected to be lower than their LIBOR equivalent and consequently a credit adjustment spread may be required to minimise the economic impact of moving to these RFRs.

Purpose of this Consultation Paper

In the derivatives market, the International Swaps and Derivatives Association ("ISDA") has conducted a series of consultations on adjustments required to RFRs to account for the differences with LIBOR in respect of fallbacks applying on the cessation of LIBOR. In particular, a consultation in July 2018 covered GBP LIBOR (amongst certain other IBORs)⁵ (the "ISDA July 2018 Consultation") and a follow-up consultation in September 2019⁶ sought input on (amongst other areas) the final parameters of the spread and term adjustment methodology (the "ISDA Final Parameters Consultation"). Further information on the ISDA consultations is set out in Appendix 2 (*Summary of the ISDA consultations on IBOR fallbacks*) to this Consultation Paper. There was clear feedback received in response to those consultations in respect of the methodologies for the required adjustments, including a methodology to calculate a credit adjustment spread. **A significant majority of respondents to the ISDA Final Parameters Consultation felt that the most appropriate methodology for calculating a credit adjustment spread for fallbacks on cessation of LIBOR would be a historical median over a five-year lookback period.**⁷ This credit adjustment spread methodology will be applicable to all tenors of GBP LIBOR. The actual credit adjustment spread, however, would differ across the different tenors.⁸

Whilst the ISDA consultations were open to all market participants (i.e. not only derivatives market participants), their coverage understandably did not include fallbacks for non-derivative products. **The focus of this Consultation Paper is to assist cash market participants that would need to consider the appropriateness of methodologies for credit adjustment spreads in the cash markets, in terms of:**

- (i) **fallbacks that operate on the cessation of LIBOR; and**
- (ii) **fallbacks that operate before the cessation of LIBOR and trigger as a consequence of a regulatory announcement of non-representativeness of LIBOR.**

² See Appendix 1 (*Background to LIBOR reform and alternative rates*) for further details on the background to LIBOR reform.

³ See Figure 2 in Appendix 1 (*Background to LIBOR reform and alternative rates*) for further detail of the RFRs chosen.

⁴ See Appendix 3 (*Term rates*) for more information on how term rates can be created from RFRs.

⁵ [Consultation on Certain Aspects of Fallbacks for Derivatives Referencing GBP LIBOR, CHF LIBOR, JPY LIBOR, TIBOR, Euroyen TIBOR and BBSW](#), ISDA, 12 July 2018.

⁶ [Consultation on Final Parameters for the Spread and Term Adjustments in Derivatives Fallbacks for Key IBORs](#), ISDA, 18 September 2019.

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

⁸ For example, the actual credit adjustment spread applicable for 1-month GBP LIBOR would be different to that applicable for 3-month GBP LIBOR. See further Appendix 5 (*Example calculations and illustrative graphs*).

This Consultation Paper recognises the importance of the identification of a market accepted methodology in a transparent manner and of raising awareness of the need for such adjustments.

When dealing with (i) and (ii), cash market participants should be mindful of the ISDA consultations as there are several benefits for deciding that the credit adjustment spread methodology identified for the derivatives market is also appropriate for the cash markets.

Where derivatives are used to hedge interest rate risk in cash products, having consistency with the credit adjustment spread methodology identified by ISDA will support the alignment of fallbacks so that these products operate in a more robust fashion upon LIBOR cessation and minimise basis risk between them. Such alignment may also reduce operational, legal, tax, accounting and similar issues between loan products and any related securitisations and associated hedges. Cash products that are currently unhedged would secure similar benefits from having consistency with the methodology in the derivatives market were they to be hedged in future.

Whilst the result of a credit adjustment spread methodology could be applied to either backward-looking compounded in arrears rates or to forward-looking term rates (see further Appendix 3 (*Term rates*) of this Consultation Paper), there may be other differences to take into account between the fallback rate in cash products and in the derivatives market. Cash market participants need to consider all of these points carefully.

This Consultation Paper therefore seeks feedback on the appropriate methodologies for credit adjustment spreads in the cash markets. The methodologies are described further in Section 5 (*Description of credit adjustment spread methodologies*).

This Consultation will remain open until Friday 6th February 2020.

The Working Group strongly encourages market participants to respond to this Consultation. It hopes to receive feedback from as broad a range of market participants as possible, including from different sectors and product categories.

Application of results of this Consultation Paper

The results of this Consultation will not be binding on cash market participants. However, it is expected that the feedback to this Consultation will assist the market in developing conventions and reaching market acceptance on appropriate credit adjustment spread methodologies for cash products. In particular, reaching a market consensus on suitable credit adjustment spread methodologies for cash products would:

- assist the process of negotiating an appropriate credit adjustment spread methodology;
- facilitate the inclusion of stronger fallback clauses in cash products which continue to reference LIBOR; and
- assist the application of existing fallbacks which reference credit adjustment spreads. For example, many FRNs issued since July 2017 include enhanced fallback provisions, many of which refer to the application of a credit adjustment spread. Similarly, in the syndicated loan market, the LMA's recommended form of revised replacement of screen rate language (first published in May 2018) refers to a method for calculating a credit adjustment spread.⁹

⁹ [LMA Recommended Revised Form of Replacement Screen Rate Clause and Users Guide](#), LMA, 18 October 2018.

Section 2: Scope of this Consultation

Products in scope

This Consultation focuses on cash products, including (but not limited to) syndicated loans, FRNs, retail loans, bilateral corporate loans and securitisations.

Term rate adjustment out of scope

Unlike the ISDA July 2018 Consultation, this Consultation Paper does not focus on a term adjustment to the RFR. This is because the ISDA July 2018 Consultation specifies the fallback in the derivatives market for GBP LIBOR to be SONIA. As a result, to account for the move from a term rate (GBP LIBOR) to an overnight rate (SONIA), the fallbacks ISDA implements will apply an adjustment to SONIA so that it is comparable to GBP LIBOR. The compounded setting in arrears rate was selected by the majority of respondents to that consultation for this purpose (see further Appendix 2 (*Summary of the ISDA consultations on IBOR fallbacks*) to this Consultation Paper).

This Consultation Paper assumes that cash market participants will instead reference term versions of the overnight RFRs directly (i.e. either a backward-looking or forward-looking term rate, together referred to as "**RFR-derived rates**").¹⁰ As a result, it is assumed that an adjustment to reflect a term structure would not be needed for cash products as this will already be built into the RFR-derived rate being referenced in the relevant cash product. This Consultation Paper therefore focuses on the credit adjustment spread only.

LIBOR currencies in scope

This Consultation focuses only on GBP LIBOR and credit adjustment spreads to be applied to a SONIA-derived rate.¹¹ Other currency working groups are also separately considering the issue of a credit adjustment spread to their respective RFRs and separate announcements are expected on this issue from those currency working groups in due course.

Fallbacks in scope

This Consultation considers the credit adjustment spread methodology to be used in respect of fallbacks from LIBOR to a SONIA-derived rate where the relevant spread is determined at the 'fallback trigger date' (e.g. the announcement of the cessation of GBP LIBOR) and applied at the 'fallback activation date' (e.g. the actual cessation date of GBP LIBOR).

Fallbacks in cash products may apply on the cessation of LIBOR only. In addition, some cash products may also contain fallback triggers which operate prior to the cessation of LIBOR. There are two different types of pre-cessation fallbacks in the cash markets (see further Appendix 4 (*Pre-cessation fallback triggers*) of this Consultation Paper).

The first type operates before the cessation of LIBOR and triggers as a consequence of a regulatory announcement of non-representativeness. This pre-cessation fallback is within the scope of this Consultation. The second type can trigger before any such regulatory announcement of non-representativeness ("**early opt-in fallback trigger**") and is not within the scope of this Consultation (given its similarity to active conversion, discussed further below); these will be considered in more detail in a future publication by the Working Group.

Active conversion out of scope

This Consultation does not consider the credit adjustment spread methodology to be used by market participants who wish to actively convert LIBOR-linked cash products to a SONIA-derived rate at an

¹⁰ For further information on such term versions see Appendix 3 (*Term rates*) of this Consultation Paper.

¹¹ Being either a backward-looking or forward-looking term rate based on SONIA. See further Appendix 3 (*Term rates*) of this Consultation Paper.

earlier stage than a fallback activation date. The active conversion of legacy GBP LIBOR products to reference SONIA will be considered in more detail in a future publication by the Working Group.

New cash products directly referencing SONIA not included

This Consultation Paper is not intended to apply to cash products which directly reference SONIA (e.g. FRNs and securitisations that have been issued referencing SONIA or new loans based on SONIA). In this case, market participants will need to consider how best to structure their transactions using SONIA given the differences between SONIA and GBP LIBOR.

Section 3: Consultation process

Responses

Responses to this Consultation should be sent to the RFR Secretariat (RFR.Secretariat@bankofengland.gsi.gov.uk) by **Friday 6th February 2020**.

Information provided in response to this Consultation, including personal information, may be subject to publication or release to other parties or disclosure in accordance with access to information regimes including under the Freedom of Information Act 2000 or data protection legislation, or as otherwise required by law or in discharge of statutory functions. Respondents should indicate if they regard all, or some of, the information provided in response to this Consultation as confidential. If a request for disclosure of this information is received, respondents' indications will be taken into account, but no assurance can be given that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by a respondent's IT system on emails will not, of itself, be treated as constituting notice that such respondent regards any information supplied as confidential.

By responding to this Consultation, respondents provide personal data to the Bank of England or FCA as the RFR Secretariat. This may include a respondent's name, contact details (including, if provided, details of the organisations respondents work for), and opinions or details offered in the response itself. For details on how the Bank of England or FCA deal with personal data, rights of respondents in this connection or to get in touch, please visit <https://www.bankofengland.co.uk/legal/privacy> or <http://www.fca.org.uk/privacy>, respectively.

Process for publishing results

The Working Group will discuss all feedback and publish an aggregated and anonymised summary of responses received. The summary published will not contain any information that could be used to attribute a particular response or position to an individual respondent.

If the responses received are not conclusive, the Working Group retains the right to issue a follow-up consultation.

In respect of the calculation of any credit adjustment spread, an independent third-party vendor would need to obtain the data necessary to perform the relevant calculations and publish the credit adjustment spread on a screen so that market participants can access the information in a transparent manner. In relation to the derivatives market, ISDA has selected Bloomberg Index Services Limited (BISL) as the vendor that will publish the credit adjustment spread selected following the ISDA consultations.

Competition notice

By participating in this Consultation, you agree to act in full compliance with applicable competition law requirements. The Working Group has taken and will continue to take appropriate safeguards to ensure that the conduct of this Consultation complies with applicable competition laws.

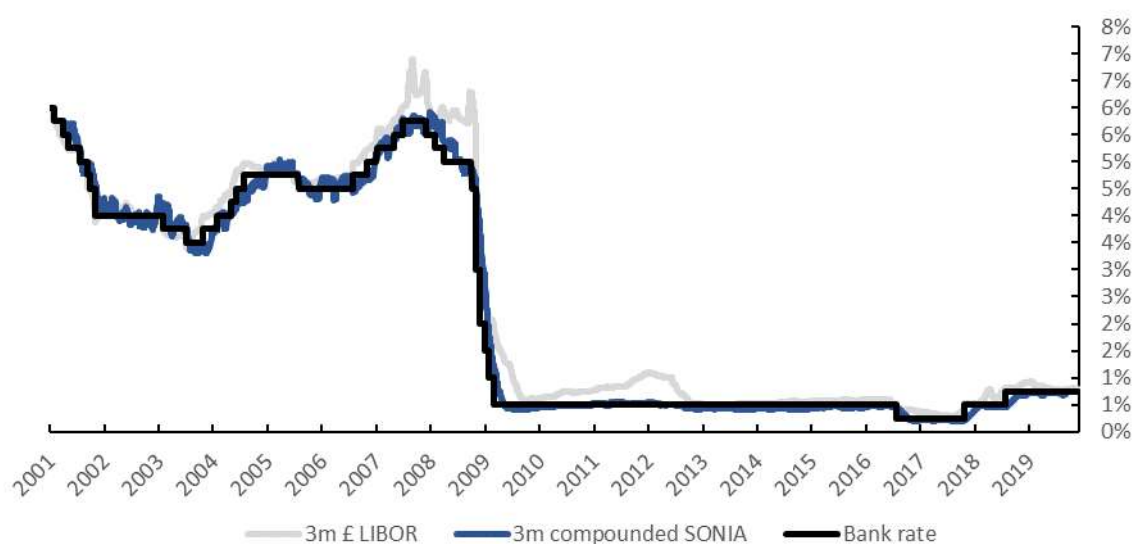
Section 4: Background on the need for a credit adjustment spread and the relevance of the ISDA consultations

The need for a credit adjustment spread

An important issue in referencing RFRs is how to account for the economic difference between LIBOR and the RFRs (which are overnight and without a term structure or credit component). The RFRs are risk-free or nearly risk-free and may be secured or unsecured. In contrast, LIBOR is forward-looking and is an unsecured term rate quoted for different tenors. LIBOR also includes a bank credit risk component and reflects a variety of other factors (e.g. liquidity, fluctuations in supply and demand) which are not reflected in the RFRs and consequently LIBOR rates show more volatility in times of market stress.

This differential is illustrated by Figure 1 below, using SONIA (the chosen RFR in the sterling market) as an example. It shows the economic difference between 3-month GBP LIBOR and SONIA taken over the same 3-month period.

Figure 1: Bank Rate, 3-month GBP LIBOR, 3-month compounded SONIA time series (source: Bank of England website, Bloomberg, Bank



Source: Bank of England website, Bank of England calculations, and Bloomberg Finance L.P.

Similar economic differences have been seen across the other LIBOR currencies and their chosen RFRs.

Therefore adjustments will be needed to transactions when either:

- including fallbacks to RFRs in contracts which reference LIBOR; or
- transitioning to RFRs from LIBOR.

As noted in Section 2 (Scope of this Consultation), this Consultation Paper focuses only on GBP LIBOR and on fallbacks from GBP LIBOR to a SONIA-derived rate. It does not cover other LIBOR currencies.

ISDA consultations on IBOR fallbacks and their relevance to cash markets

The issue of credit adjustment spreads has already been considered in the context of the derivatives market. The ISDA July 2018 Consultation closed on 22 October 2018 and the ISDA Final Parameters Consultation closed on 23 October 2019. Further information and background on the consultations can be found in Appendix 2 (*Summary of the ISDA consultations on IBOR fallbacks*) of this Consultation Paper.

Based on the feedback received, ISDA is developing fallbacks from certain IBORs (including GBP LIBOR) on cessation of those IBORs to the relevant overnight RFRs based on:

- a compounded setting in arrears rate for the term adjustment (see further Appendix 3 (*Term rates*)); and
- the historical median approach over a five-year lookback period for the credit adjustment spread (see further Section 5 (*Description of credit adjustment spread methodologies*)).

Whilst both the ISDA July 2018 Consultation and the ISDA Final Parameters Consultation were open to all market participants (i.e. not only derivatives market participants), their coverage understandably did not include fallbacks for non-derivative products.

However, the issues covered in the ISDA consultations in respect of how to account for the differences between the relevant IBORs and the selected RFRs on cessation of the relevant IBORs are similar to the issues that arise in the cash markets in the context of fallbacks from GBP LIBOR to SONIA.

Section 5: Description of credit adjustment spread methodologies

As well as outlining the ISDA preferred option of using the historical median approach for fallbacks on cessation of LIBOR, this Section outlines three other potential options for the calculation of credit adjustment spreads. Two of these were considered in the ISDA July 2018 Consultation, namely the ISDA forward approach and the ISDA spot-spread approach.¹² The third alternative option to the ISDA preferred option of the historical median approach is a variation of the ISDA forward approach.

The descriptions of the credit adjustment spread methodologies that follow outline potential considerations for each approach. These are provided for information only. They are not intended to be comprehensive and the Working Group makes no representation as to their accuracy or applicability to the particular circumstances of an individual market participant. Readers are strongly encouraged to formulate their own views regarding the potential considerations applicable to each approach, taking into account their particular circumstances, and to consult with their own professional advisers in doing so. ***In particular, readers should consider the scope of this Consultation (as outlined in Section 2 (Scope of this Consultation), the assumptions made in Section 6 (Assumptions when determining the selection of a credit adjustment spread methodology), as well as the questions outlined in Section 7 (Questions for consultation), when considering these options.***

In each of the alternatives outlined below, the credit adjustment spread, once calculated for a particular tenor, would be a set figure applicable for the remainder of the life of the transaction, i.e. the methodologies would produce spreads that are determined at the time of the fallback trigger date to apply for all future dates for that tenor from the fallback activation date. ***The credit adjustment spread figure will not be dynamic or reflect any changes in the interbank market once the fallback applies.***

It should be noted that the Working Group was unable to identify a methodology for a dynamic credit adjustment spread which would be sufficiently robust (one reason being insufficiency of relevant data). Similarly, ISDA has noted that although it considered ways to calculate a dynamic credit adjustment spread, market participants and regulators expressed concerns regarding the long-term viability of such an approach.¹³

Option 1 – ISDA historical median approach

Description

The credit adjustment spread will be based on the difference between GBP LIBOR and the SONIA-derived rate that is calculated using a median over a five-year lookback period prior to the fallback activation date.

This approach therefore looks into the past, i.e. historical differences between GBP LIBOR and the SONIA-derived rate over a given period of time. The historical median approach derives a single value for the credit adjustment spread. The credit adjustment spread would be calculated and published for each GBP LIBOR tenor based on historical differences between the GBP LIBOR for that tenor and the SONIA compounded rate over the relevant tenor (so the credit spread will differ across different tenors).

Availability of SONIA-derived rates

The historical median approach requires historical spot GBP LIBOR fixings for each relevant tenor and historical spot SONIA-derived rate fixings, in each case over the relevant lookback period. It should be noted that whilst forward-looking term rates are not yet available, it is possible to use historical backward-looking term rates in this analysis (see further Appendix 3 (*Term rates*) of this Consultation Paper). In this respect, SONIA has been published since March 1997 (originally by the Wholesale Brokers' Markets Association until the Bank of England became administrator on 25 April 2016). References to 'SONIA-derived rate' in respect of the historical median approach should therefore be

¹² Reference to spot-spread is the difference between the spot price (i.e. the current market price of, for instance, the relevant LIBOR) and whatever metric is being compared against spot, e.g. a new RFR-derived rate.

¹³ [IBOR Fallbacks for 2006 ISDA Definitions – FAQs](#), ISDA.

read as referring to the backward-looking compounded in arrears SONIA rate (and not a forward-looking term rate).

Potential considerations

Some potential considerations in respect of the historical median approach are set out below:

- This was the preferred approach selected by the majority of respondents to the ISDA Final Parameters Consultation. Its adoption for fallbacks on cessation of GBP LIBOR in the cash markets would therefore provide consistency with derivatives for hedging purposes, should hedging be a relevant consideration, and reduce basis risk.¹⁴
- This approach is more appropriate for measurement of a value at a single point in time based on historical average. It would not represent present value on a forward-looking basis if applied at any time between today and the activation of GBP LIBOR fallbacks. The decision by the derivatives market to adopt this approach should mean the forwards will themselves reflect the historic average on the activation date of an ISDA fallback trigger. It might therefore be appropriate for fallbacks triggered on cessation of GBP LIBOR or fallbacks triggered as a consequence of a regulatory announcement of non-representativeness.
- It captures the tendency of the SONIA/GBP LIBOR basis to fluctuate around a long-term mean.
- It is less susceptible to market distortions and potential manipulation at the fallback trigger date because a long lookback period is used as the data set rather than a single observation at the fallback trigger date.
- It is based on readily available information and is therefore transparent. As historical GBP LIBOR and SONIA rates are accessible to the market, this spread is one which parties could anticipate.
- If a definite point of transition is announced and agreed in advance, a convergence of forward and historical curves should occur to minimise value transfers when the fallback activation date actually occurs.
- Robustness and simplicity.
- It requires long histories of GBP LIBOR fixings and SONIA-derived rate fixings. The relevant data may not be available for all fixings, particularly for long lookback periods and thus may create inconsistency across currencies given that €STR and SOFR are both relatively new rates.
- Prevailing market-implied spreads before the fallback activation date may differ after activation. There may be some value transfer under this option.

Option 2 – ISDA forward approach

Description

The credit adjustment spread could be calculated based on observed market prices for the forward spread between GBP LIBOR and the SONIA-derived rate in the relevant tenor. This would be calculated at the fallback trigger date. A forward spread curve up to 30 – 60 years for the SONIA-derived rate in each relevant tenor would need to be published on a daily basis until the cessation of GBP LIBOR.

The fallback rate would consist of the SONIA-derived rate (assuming this is published each day going forward), plus a spread based on the relevant curve (which would specify the spread to be applied for every future date and would be frozen at the fallback trigger date). For future dates beyond the length of the curve, the spread would remain static at the spread for the last date on the curve.

Potential considerations

Some potential considerations in respect of the ISDA forward approach are set out below:

- This was not the preferred approach of respondents to the ISDA July 2018 Consultation. If adopted for fallbacks on cessation of GBP LIBOR in the cash markets, this would create a mismatch with

¹⁴ Basis risk is the risk that the value of a hedge will not move in line with that of the underlying cash product exposure.

derivatives products for hedging purposes, should hedging be a relevant consideration, and increase basis risk.

- Originally, it was thought that the ISDA forward approach may be more effective in preventing significant value transfers near the fallback trigger date because spread adjustments match the expected market pricing as of the day before the fallback trigger date (or the average expected market pricing over the specified number of days before the fallback trigger date). However, the decision by the derivatives market to adopt the historical median approach should now mean the forwards will themselves reflect the historic average on the trigger date of an ISDA fallback trigger (i.e. cessation and pre-cessation fallback triggers as a consequence of a regulatory announcement of non-representativeness).
- It might be the more appropriate approach in the context of active conversions to SONIA (which is beyond the scope of this Consultation) or for early opt-in fallback triggers (which are in many respects similar to active conversions and also beyond the scope of this Consultation). A similar approach has been seen in the SONIA market already, which has an existing derivatives market (compared to other RFRs).¹⁵
- It requires functioning markets and extensive market data, which may not be readily available. In particular, this approach requires forward GBP LIBOR curves and forward SONIA-derived rate curves for each tenor, extending out through the time horizon over which the fallback rates will be quoted. Any market data considered must be accurate, verifiable and accessible to market participants. It should not be based on any proprietary data from individual dealers.
- If a forward curve were only to be produced for the cash markets, there may not be enough active borrowers in order to meet the market liquidity requirements in order to build a curve.
- This approach may not produce a result that is close to spot spreads that have been observed in the market.
- Prevailing market-implied spreads before the fallback activation date may differ after activation. There may be some value transfer under this option.
- Given the reliance of this approach on market conditions at the time of activation, it may be vulnerable to manipulations and distortions in the market. For example, spreads could be exposed to extreme moves (whether due to manipulation or otherwise) in the run up to a potential trigger event, locking in spreads at temporarily high levels.
- There are significant operational challenges related to data and process requirements for this approach. This approach requires an agreed choice of model and a third-party vendor / benchmark administrator to calibrate the agreed model each day.

Option 3 – ISDA spot-spread approach

Description

The credit adjustment spread could be based on the spot-spread between GBP LIBOR and the SONIA-derived rate on the day preceding the fallback trigger date. A variation would be to use the average of the daily spot-spread between GBP LIBOR and the SONIA-derived rate over a specified number of days prior to the fallback trigger date (e.g. 5 trading days, 10 trading days or 1 month).

This approach is similar to the historical median approach and derives a single value for the credit adjustment spread, but references a very short period. The credit adjustment spread would be calculated and published for each relevant GBP LIBOR tenor.

¹⁵ The ABP consent solicitation in May 2019 to implement a change in interest basis for its £65 million FRNs due 2022 from GBP LIBOR to SONIA used an adjustment spread based on the forward market. See page 8 of the consent solicitation memorandum for further details of the approach used: https://www.abports.co.uk/media/sz4lxqz/final_abp_sonia_consent-solicitation-memorandum_may-2019.pdf. Similarly, the GBP LIBOR to SONIA loan amendment for South West Water in October 2019 used an adjustment spread based on the forward market.

Potential considerations

Some potential considerations in respect of the spot-spread approach are set out below:

- Respondents to the ISDA July 2018 Consultation felt this method was incompatible with the compounded setting in arrears approach. Therefore it could only be applicable for forward-looking term rates. As a result, it could only be a viable approach if a SONIA forward-looking term rate is being produced at the fallback trigger date.
- This approach was not favoured by many respondents to the ISDA July 2018 Consultation and was opposed by a large number of respondents (primarily because it does not safeguard against unusual market conditions being captured at the time of trigger and the sensitivity of this approach to elevated volatility).
- It is unlikely to be present-value neutral on the fallback trigger date because it only reflects spreads under market conditions at the time of trigger, which could differ from anticipated market conditions in the future (including, e.g. expected changes in monetary policy). This may be of particular concern if the fallback trigger date occurs during market turmoil or when spot spreads are out of line with forward spreads.
- There is a level of uncertainty in relying on a single day's rate.
- Given the reliance of this approach on market conditions at the time of activation, it may be vulnerable to manipulations and distortions in the market. For example, spreads could be exposed to extreme moves (whether due to manipulation or otherwise) in the run up to a potential trigger event, locking in spreads at temporarily high levels
- This approach is simple and easy to understand. It also requires only spot GBP LIBOR fixings for each relevant tenor and spot SONIA-derived rate fixings at the time of trigger.

Option 4 – Modified forward approach

Description

This is similar to the ISDA forward approach (option 2 above), and provides for the credit adjustment spread to be based on observed market levels for the forward GBP LIBOR / SONIA-derived rate spread in the relevant GBP LIBOR tenor. However, unlike the ISDA forward approach, this methodology restricts the number of spread values to five data points after the fallback trigger date (as opposed to each day into the future) and data would be collected over a long observation period (1 year is proposed) and averaged to calculate the spreads as a means to address some of the concerns raised with the ISDA forward approach.

Potential considerations

The potential considerations for this approach are largely similar to those for the ISDA forward approach. In addition:

- The modified forward approach is simpler than the ISDA forward approach and easier to understand.
- The number of data points could be increased, with the trade-off between accuracy and data quality/complexity.
- There are operational challenges to creating a robust mechanism for the data capture and process requirements in respect of the observed market levels for the forward GBP LIBOR / SONIA-derived rate spread.

Section 6: Assumptions when determining the selection of a credit adjustment spread methodology

Criteria for selection

The credit adjustment spread methodologies detailed in Section 5 (*Description of credit adjustment spread methodologies*) were identified based on the following criteria:

- eliminating or minimising value transfer at the time the fallback is applied;
- eliminating or minimising any potential for manipulation;
- transparency of calculation; and
- eliminating or mitigating against the impact of market disruption at the time the fallback is applied.

It should be noted that the purpose of this Consultation and the credit adjustment spread is not to provide a complete economic replacement for LIBOR. However, the methodologies are intended to provide a helpful proxy as well as clarity and certainty to market participants in this transition phase.

Application of spread to different tenors

Where a credit adjustment spread methodology is selected, it is assumed that the same methodology would apply to all tenors of GBP LIBOR. The actual credit adjustment spread figure, however, would differ across the different tenors. This is illustrated further by the graphs in Appendix 5 (*Example calculations and illustrative graphs*).

Activation dates

The credit adjustment spreads in the ISDA July 2018 Consultation in respect of GBP LIBOR referencing derivatives are determined at the fallback trigger date and applied at the fallback activation date following a cessation of GBP LIBOR. It should be noted that triggers for fallbacks in cash markets may differ from fallback triggers in ISDA documentation (in particular, they may contain pre-cessation fallback triggers).

The credit adjustment spread figure that would apply for a fallback triggered by GBP LIBOR cessation would differ from the credit adjustment spread figure applied for a fallback triggered by a pre-cessation event (since the credit adjustment spread would be fixed at a different time in each case and by reference to the relevant data available at that time).

This Consultation Paper assumes that the relevant credit adjustment spreads will be published and available at the time the fallback trigger date occurs, whenever that may be.

Continuing publication of GBP LIBOR

If GBP LIBOR continues to be produced after cash market participants convert to SONIA-derived rates plus a credit adjustment spread, market participants would be able to determine whether they are receiving / paying more or less on the basis of the SONIA-derived rate plus the credit adjustment spread by comparison with the GBP LIBOR that continues to be published.

Section 7: Questions for consultation

1. Please indicate whether the ISDA historical median approach is your preferred credit adjustment spread methodology for cash products in respect of:

- (a) fallbacks which apply on cessation of GBP LIBOR; and
- (b) pre-cessation fallbacks for GBP LIBOR that trigger as a consequence of a regulatory announcement of non-representativeness.

If not, please rank the approaches in Section 5 (*Description of credit adjustment spread methodologies*) in order of preference (with 1 as your preferred approach).

2. Are there any other methodologies for calculation of a credit adjustment spread which should be considered in the cash markets? If so, please indicate which of the situations outlined in (a) and (b) in Question 1 above this methodology would be most applicable to.
3. Please comment on the characteristics of the proposed methodologies that most influenced your decision (including whether alignment with related hedging formed a part of your decision-making process).
4. Please indicate whether your comments apply to all cash products, or whether there are different considerations for different cash products.
5. In respect of fallbacks, would it be problematic to have different credit adjustment spreads apply based on when fallbacks take effect (i.e. prior to cessation or upon cessation of GBP LIBOR)?
6. In respect of fallbacks, should the credit adjustment spread following a pre-cessation fallback trigger subsequently change should GBP LIBOR be discontinued to the credit adjustment spread calculated following the permanent cessation of GBP LIBOR? Alternatively should it remain at the credit adjustment spread for the pre-cessation event?
7. Please comment on anticipated operational challenges and elaborate on how long you feel it would take to overcome such challenges.
8. Would it be problematic for market participants to use different approaches to calculate credit adjustment spreads in fallbacks or for transitioning legacy documentation across different currencies? Please explain why or why not, commenting specifically on the potential implications of using different approaches across different currencies.

Appendix 1: Background to LIBOR reform and alternative rates

Background to LIBOR reform

Regulatory reform in relation to benchmarks has been ongoing for many years. Following the Wheatley Review of LIBOR in 2012 and the Financial Stability Board ("**FSB**") report on "*Reforming Major Interest Rate Benchmarks*" in 2014, ICE Benchmark Administration Limited ("**IBA**"), the benchmark administrator for LIBOR, has been working on strengthening the existing LIBOR benchmark. Work has also been ongoing in the various LIBOR currency jurisdictions on the development of alternative rates. It should be noted that such work is also taking place in respect of other currency jurisdictions.

In July 2017, Andrew Bailey, Chief Executive of the FCA, gave a speech to the market about the future of LIBOR. The speech made it clear that market participants should not rely on LIBOR being available after 2021.

LIBOR is currently published for five currencies: Sterling ("**GBP**"), U.S. Dollars ("**USD**"), Euros, Swiss Francs ("**CHF**") and Japanese Yen ("**JPY**") and in seven different tenors: overnight/spot next; 1 week; 1 month; 2 months; 3 months, 6 months; and 12 months.

Alternatives and fallbacks to LIBOR

Each of the currency working groups in the LIBOR currency jurisdictions has now selected RFRs, see Figure 2 below. These RFRs are primarily based on transactions and are stated to be risk-free (or at least near risk-free) as they do not contain term bank credit risk or a liquidity premium.

Figure 2: RFRs identified by the currency working groups

Currency	Proposed Risk-Free Rate	Secured / Unsecured	Administrator	Working Group
Sterling	SONIA (Sterling Overnight Index Average)	Unsecured	Bank of England	Bank of England Working Group on Sterling Risk-Free Reference Rates
Euro	€STR (Euro Short-Term Rate)	Unsecured	European Central Bank	Working Group on Euro Risk-Free Rates
Swiss Franc	SARON (Swiss Averaged Rate Overnight)	Secured	SIX Swiss Exchange	Swiss National Working Group
U.S. Dollar	SOFR (Secured Overnight Financing Rate)	Secured	Federal Reserve Bank of New York	Alternative Reference Rates Committee
Japanese Yen	TONA (Tokyo Overnight Average Rate)	Unsecured	Bank of Japan	Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks

It should be noted that, in respect of LIBOR, the FCA and relevant regulators in the UK, Switzerland and the U.S. have stated that there is a need to transition away from LIBOR to RFRs before the end of 2021 (as after this point the FCA will no longer compel panel banks to make submissions to LIBOR). In respect of EURIBOR, the focus of the European regulators has been on reforming EURIBOR, rather than on a move away from it, whilst at the same time working on more robust fallbacks to EURIBOR based on RFRs in the event EURIBOR is not available.

Appendix 2: Summary of the ISDA consultations on IBOR fallbacks

Following a request from the FSB Official Sector Steering Group ("**OSSG**"), ISDA is in the process of amending its standard documentation to implement fallbacks for certain key IBORs in derivatives contracts. The fallback rates will be the selected overnight RFRs (see Figure 2 in Appendix 1 (*Background to LIBOR reform and alternative rates*)).

The ISDA July 2018 Consultation closed on 22 October 2018 and sought input on the approach for addressing certain technical issues associated with term and spread adjustments that will apply to the RFRs if the fallbacks are triggered. This covered the following IBORs: GBP LIBOR; CHF LIBOR; JPY LIBOR; TIBOR (Tokyo Interbank Offered Rate); Euroyen TIBOR; and BBSW (Bank Bill Swap Rate). The purpose of the adjustments is to ensure that legacy derivatives contracts referencing an IBOR continue to function as closely as possible to what was intended in economic terms after a fallback takes effect.

The ISDA July 2018 Consultation focused on two aspects of the transition from an IBOR to an RFR: (i) an adjustment to the RFR to account for the move from a term rate (i.e. the IBOR) to an overnight rate (i.e. the selected RFR) so that it is more comparable to the relevant IBOR; and (ii) a credit adjustment spread.

In respect of the adjustment to the RFR for the term element, the ISDA July 2018 Consultation proposed four options: (i) the spot overnight rate; (ii) the convexity adjusted overnight rate; (iii) the compounded setting in arrears rate; and (iv) the compounded setting in advance rate.

The three options for calculating the credit adjustment spread were: (i) the historical mean/median approach; (ii) the forward approach; and (iii) the spot-spread approach. These approaches are explained in more detail in Section 5 (*Description of credit adjustment spread methodologies*) of this Consultation Paper.

In December 2018, ISDA published the results of its consultation.¹⁶ Based on these responses, the preferred methodologies were: (i) the compounded setting in arrears rate for the term adjustment; and (ii) the historical mean/median approach for the credit adjustment spread. The majority of respondents to the ISDA July 2018 Consultation preferred to use the same methodologies across all benchmarks covered by the consultation (and potentially other benchmarks).

ISDA launched a further consultation on 16 May 2019 covering USD LIBOR, CDOR (the Canadian Dollar Offered Rate) and HIBOR (Hong Kong Interbank Offered Rate) and certain aspects of fallbacks for derivatives referencing SOR (Singapore Dollar Swap Offer Rate) (the "**ISDA May 2019 Supplemental Consultation**").¹⁷ This consultation asked similar questions as the July 2018 ISDA Consultation but for USD LIBOR, CDOR, HIBOR and SOR. It also asked respondents to comment on some of the outstanding questions from the ISDA July 2018 Consultation (for example, the appropriate length of any lookback period and whether the calculation should be based on a mean or median). ISDA announced the preliminary results of this consultation on 30 July 2019.¹⁸ Consistent with the responses to the ISDA July 2018 Consultation, the overwhelming majority of respondents preferred: (i) the compounded setting in arrears rate for the term adjustment; and (ii) the historical mean/median approach for the credit adjustment spread. There was a strong desire to use the same methodologies across all benchmarks covered by the consultation (and potentially other benchmarks).

The ISDA Final Parameters Consultation¹⁹ was issued on 18 September 2019 as a follow-up to the ISDA July 2018 Consultation and sought input from market participants on the final parameters of the credit adjustment spread and term adjustment methodology, proposing the choices of either a median

¹⁶ The results of the July 2018 ISDA Consultation are available here: <http://assets.isda.org/media/04d213b6/db0b0fd7-pdf/>.

¹⁷ *Supplemental Consultation on Spread and Term Adjustments for Fallbacks in Derivatives Referencing USD LIBOR, CDOR and HIBOR and Certain Aspects of Fallbacks for Derivatives Referencing SOR*, ISDA, 16 May 2019.

¹⁸ The press release announcing the preliminary results can be found here: <https://www.isda.org/2019/07/30/isda-publishes-preliminary-results-of-supplemental-benchmark-fallbacks-consultation/>.

¹⁹ *Consultation on Final Parameters for the Spread and Term Adjustments in Derivatives Fallbacks for Key IBORs*, ISDA, 18 September 2019.

over a five-year lookback period or trimmed mean over a ten-year lookback period. The consultation also sought input on whether a lag or lockout mechanism should be introduced for end users unable to process same day payments, and whether a transitional period for the historical mean/median approach is appropriate. The ISDA Final Parameters Consultation closed on 23 October 2019 and the results were published on 15 November 2019. The majority of respondents preferred: (i) the historical median over a five-year lookback period for the credit adjustment spread; (ii) not to include a transitional period in the credit adjustment spread calculation, not to exclude outliers, and not to exclude any negative spreads; and (iii) for the compounded setting in arrears rate, a two-banking-day backward shift adjustment for operational and payment purposes.

ISDA launched a consultation on pre-cessation issues on 16 May 2019 (the "**ISDA Pre-Cessation Consultation**").²⁰ The consultation sought feedback on how derivatives contracts should address a regulatory announcement that LIBOR or certain other IBORs categorised as critical benchmarks under the EU Benchmarks Regulation are no longer representative of an underlying market. Anything implemented as a result of this consultation (i.e. pre-cessation triggers) would be in addition to the fallbacks ISDA expects to implement to address a permanent cessation of a key IBOR. The consultation followed a request by the FSB OSSG. ISDA will use the responses to the consultation to determine what protocols or other documentation solutions would be most useful and appropriate for derivatives market participants to use in addressing pre-cessation issues. The consultation closed on 12 July 2019 and ISDA published preliminary results on 9 August 2019.²¹

According to the preliminary results, respondents expressed a wide variety of views regarding whether and how to implement a pre-cessation trigger related to "non-representativeness" for derivatives. In general, the respondents fell into three categories, without a clear majority in any one category: (i) those who supported adding a pre-cessation trigger to the permanent cessation triggers in the "hard wired" amendment to the 2006 ISDA Definitions and related protocol; (ii) those who supported use of the pre-cessation trigger provided that it was implemented with optionality and flexibility (or indicated that their support for the trigger depended on a number of factors); and (iii) those who opposed the pre-cessation trigger. Respondents also expressed a number of issues for consideration related to the potential pre-cessation trigger itself and how to implement such a trigger. ISDA will continue to work with market participants and regulators to determine how best to address concerns regarding "non-representative" benchmarks and implementation of pre-cessation fallbacks for derivatives.

²⁰ [Consultation on Pre-Cessation Issues for LIBOR and Certain Other Interbank Offered Rates \(IBORs\)](#), ISDA, 16 May 2019.

²¹ [ISDA Preliminary Results of Benchmark Fallbacks Consultation on Pre-cessation Issues](#), ISDA, 9 August 2019

Appendix 3: Term rates

For GBP LIBOR, the cash markets will move to reference either backward-looking term rates or (to the extent available) forward-looking term rates based on the RFRs.

Backward-looking term rates (based on historical / realised prices)

Backward-looking term rates can be constructed mechanically from past realised daily fixings of the overnight RFR over a given period of time:

- (i) One methodology for constructing such a rate is known as "compounded in arrears" which involves compounding overnight RFRs over an interest period to produce a backward-looking rate. To determine an interest payment obligation of say 3 months, the overnight RFRs compounded over the same 3-month period would be used. This calculation will only be possible once the full set of overnight RFRs are known, i.e. at the end of the period or a few days before the end of the period if a lag is used;²²
- (ii) It is also possible to use a "compounded in advance" method, which would involve using, for example, the overnight RFRs compounded over the previous 3-month period on a forward-looking basis for the next 3-month period. This rate is known at the beginning of the interest period.

Note that simple averaging may also be used rather than compounding (for example, some SOFR-referencing FRNs, 1-month SOFR and SONIA futures have used this method).

Backward-looking term rates using "compounded in arrears" are being used in SONIA-referencing FRNs, SONIA-referencing securitisations, SONIA-referencing bilateral loans, as well as in recent SOFR FRNs. In August 2019, the Working Group published a statement and summary of responses to the discussion paper on conventions for referencing SONIA in new contracts.²³ This highlighted a desire amongst respondents for close alignment of conventions between the cash market and existing overnight index swap ("**OIS**") products and for the development of standardised agreements and contracts to facilitate consistency of conventions across products and currencies.

The "compounded in advance" and "compounded in arrears" term rates could be calculated with immediate effect by market participants themselves (although it is recognised that for some cash market segments self-calculation may not be possible or desirable) or by using a third-party calculator.

Forward-looking term rates (based on market expectations)

Forward-looking term rates are known at the beginning of the period. In the context of RFRs, such term rates could be constructed based on derivatives markets which themselves reference the underlying RFR. Such rates would reflect the market-implied expected path of future overnight rates over the interest period. This could be based on the interest rate on the fixed leg of an OIS linked to the RFRs and/or from futures prices linked to the RFRs.

Forward-looking term rates are currently under consideration by the Working Group. However, such forward-looking term rates based on the RFR derivatives markets are not yet available as at the date of this Consultation Paper.²⁴

Note that in the case of backward- and forward-looking term rates based on the RFRs, they do not embed a premium for term funding risk and do not include any element of bank credit risk. Therefore, a credit adjustment spread is still required when including fallbacks to such RFR-derived rates.

²² For more information see the [Discussion Paper: Conventions for referencing SONIA in new contracts](#), Working Group on Sterling Risk-Free Rates, March 2019.

²³ [Statement from the Working Group and Summary of Responses to Discussion Paper on Conventions for referencing SONIA in new contracts](#), Working Group on Sterling Risk-Free Rates, August 2019.

²⁴ Statement on ['Progress on adoption of risk-free rates in sterling markets'](#), Working Group on Sterling Risk-Free Rates, 15 May 2019.

Calculation of the credit adjustment spread

The result of the credit adjustment spread calculation using any of the methodologies outlined in Section 5 (*Description of credit adjustment spread methodologies*) will give a credit adjustment spread that could be applied to either backward-looking compounded in arrears rates or to forward-looking term rates, given that the (risk-neutral) expectation of a backward-looking compounded in arrears rate is the forward-looking term rate.

In order to calculate the relevant credit adjustment spreads, the underlying data series to be used in the calculation needs to be considered. In applying the historic median approach, two potential methods to calculate the median of the spread would be:

- (i) the GBP LIBOR rate at the start of the period and the compounded in arrears rate during the same period; or
- (ii) the GBP LIBOR rate at the start of the period and the forward-looking OIS term rate at the start of the period.

The ISDA methodology for the credit adjustment spread uses option (i) above for the calculation of the credit adjustment spread, as the compounded in arrears rate was selected for the term adjustment (see Appendix 2 (*Summary of the ISDA consultations on IBOR fallbacks*)).

Forward-looking term rates are based on market consensus of actual future expectations. However, the expected rate at the beginning of the period may not equal the realised rate for that period. In the long run, however, the differences between the expected and realised rates can be expected to balance out.²⁵ Therefore calculating a credit adjustment spread using historic data derived from compounded in arrears rates²⁶ or based on forward-looking OIS term rates could be considered close to equivalent.

Option (ii) above would add additional complexity to the calculation of the historic median. In addition, it should be noted that it is unlikely that a long history of compliant forward-looking OIS term rates could be produced for this type of calculation (i.e. using option (ii) above), due to the limited availability of reliable market data required, whereas the daily SONIA fixes are robust and transparent.

²⁵ All things being equal, the differences between expected and realised rates for the same period will be distributed evenly.

²⁶ The fallback could be to the relevant RFR observed over the relevant GBP LIBOR tenor and compounded daily during that period.

Appendix 4: Pre-cessation fallback triggers

Pre-cessation fallback triggers are those triggers which occur other than on the cessation of GBP LIBOR. Pre-cessation fallback triggers can mean different things in different products and therefore it is important to identify what is meant by this term as the considerations in respect of credit adjustment spread methodologies can be different depending on the type of pre-cessation fallback trigger in question.

As noted in Appendix 2 (*Summary of the ISDA consultations on IBOR fallbacks*), ISDA launched the ISDA Pre-Cessation Consultation in 16 May 2019 on pre-cessation issues. This sought feedback on how to address a regulatory announcement that LIBOR or certain other IBORs categorised as critical benchmarks under the EU Benchmarks Regulation are no longer representative of an underlying market. These types of triggers have also been incorporated into certain cash products (for example, since January 2019, new fallbacks in FRNs have started to include this type of pre-cessation fallback trigger).

With these types of triggers, it is expected that the market would treat this similarly to a cessation trigger event, as there will most likely be a determined date from which GBP LIBOR ceases to be representative. In particular, it is expected that the historic median approach and the forward approach (detailed further in Section 5 (*Description of credit adjustment spread methodologies*)) would converge on the fallback trigger date. This type of pre-cessation trigger is within the scope of this Consultation Paper.

In certain cash market products, there may be triggers which apply prior to a pre-cessation fallback trigger. These are referred to in this paper as "**early opt-in fallback triggers**". An example of these types of early opt-in fallback triggers can be found in the syndicated loan market. For example, the LMA's recommended form of revised replacement of screen rate language²⁷ contains a trigger which applies where, in the opinion of the majority lenders and the borrowers, the screen rate is otherwise no longer appropriate for the purposes of calculating interest under the agreement. This trigger is more akin to an active conversion from GBP LIBOR to SONIA and the relevant credit adjustment spread would be applied from a negotiated date in each case.²⁸ As a result, in the case of these type of fallback triggers, a historical median approach and forward approach to the credit adjustment spread methodology would yield different results on the fallback trigger date, so in many respects similar to active conversions. These types of fallback triggers are not within the scope of this Consultation Paper and will be considered in more detail in a future publication by the Working Group.

²⁷ See footnote 9.

²⁸ An example of this can also be seen in the U.S. where the ARRC contains an "Early Opt-In Election" as well as a pre-cessation fallback trigger coinciding with the pre-cessation trigger identified in the ISDA Pre-Cessation Consultation. See further [ARRC Recommendations regarding more robust fallback language for new originations of LIBOR syndicated loans](#), ARRC, 25 April 2019.

Appendix 5: Example calculations and illustrative graphs

This Appendix sets out rough illustrations of the approaches outlined in this Consultation Paper for calculating the credit adjustment spread. Please note that the examples in this Appendix are for information purposes only. Spread levels implied by these methodologies are sensitive to the parameters chosen (e.g. period over which the historical average is taken). Actual build out and implementation of the selected approach may yield different values. However, the examples below should provide a helpful sense of how the approaches would function.

ISDA historical median approach

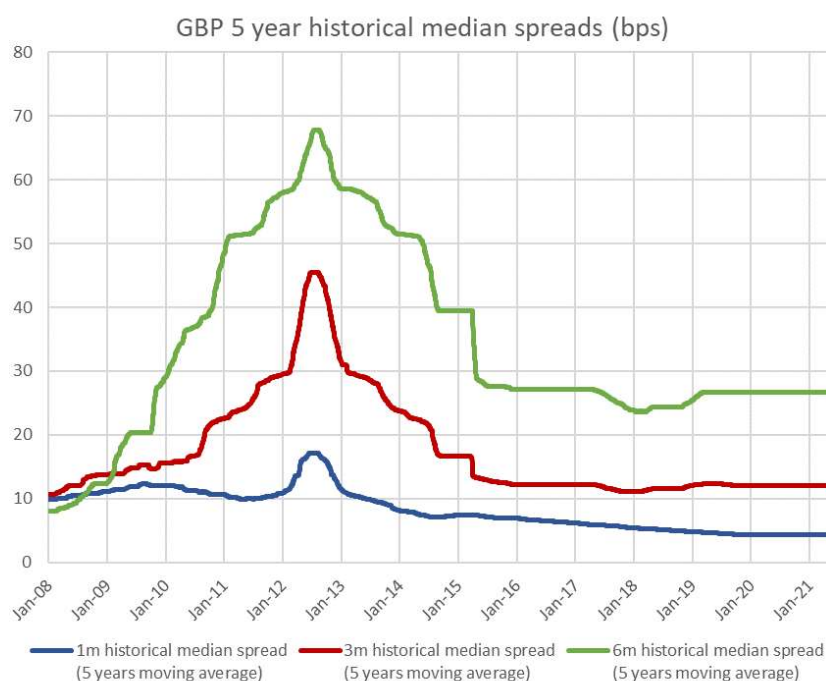
As per the the ISDA July 2018 Consultation, the definition is as follows:

The spread adjustment could be based on the mean or median spot spread between the IBOR and the adjusted RFR calculated over a significant, static lookback period...prior to the relevant announcement or publication triggering the fallback provisions.

Upon the permanent discontinuation of GBP LIBOR, any references to this index would fallback to SONIA-derived rate plus a spread to reflect the credit element present in the former index but not in the latter. The credit adjustment spread is determined by averaging, for every day in the lookback window, the difference between GBP LIBOR and compounded SONIA using the same accrual period. The results of the ISDA Final Parameters, which identified that the majority of respondents preferred the historical median over a five-year lookback period for the credit adjustment spread.

Illustration for informational purposes

To provide a sense of how this approach would function, the chart below roughly outlines the historical median approach for calculating the credit adjustment spread for 1-month, 3-month and 6-month GBP tenors based on recent data and assuming GBP LIBOR is discontinued in December 2019. Actual build out and implementation of the selected approach may yield different values.



Source: Bank of England calculations, International Swaps and Derivatives Association data, and Bloomberg Finance L.P..

Worked Example

In this example, the credit adjustment spread for 1 week GBP LIBOR is calculated using the following terminology and hypothetical assumptions:

- **Fallback trigger date.** For simplicity a fallback trigger date of 29 June 2015 is assumed, which is the final day LIBOR is published. After this date all future LIBOR references are replaced with a SONIA-derived rate plus the credit adjustment spread.
- **Lookback window length.** A hypothetical lookback window length of 1 month is used, over which the daily realised SONIA/LIBOR bases are averaged to calculate the credit adjustment spread.
- **Lookback window start date.** The date of the initial observation used to calculate the credit adjustment spread. This will equal the fallback trigger date minus the lookback window length. In this example where 1 week GBP LIBOR is discontinued on 29 June 2015 with a lookback window length of 1 month, the initial observation will be 29 May 2015.
- **Lookback window end date.** The date of the final observation used to calculate the credit adjustment spread. This will equal the fallback trigger date minus the tenor of the LIBOR being discontinued. In this example where 1 week GBP LIBOR is discontinued on 29 June 2015 with a lookback window length of 1 month the final observation will be on 23 June 2015.
- **Adjusted RFR.** This is equal to compounded SONIA over the same accrual period as the corresponding LIBOR.

Calculating the credit spread adjustment:

Date	1w LIBOR	SONIA Fixing	Adjusted RFR	1w LIBOR-Adjusted RFR
01-May-15	0.4905%	0.4655%	0.4623%	0.0282%
05-May-15	...	0.4632%	...	0.0302%
06-May-15	...	0.4611%	...	0.0304%
07-May-15	...	0.4621%	...	0.0304%
08-May-15	...	0.4583%	...	0.0306%
11-May-15
...
29-May-15	0.0308%
01-Jun-15	0.0309%
02-Jun-15	0.0304%
03-Jun-15	0.0298%
04-Jun-15	0.0299%
05-Jun-15	0.0298%
08-Jun-15	0.0304%
09-Jun-15	0.0299%
10-Jun-15	0.0303%
11-Jun-15	0.0305%
12-Jun-15	0.0307%
15-Jun-15	0.0300%
16-Jun-15	0.0302%
17-Jun-15	0.0310%
18-Jun-15	0.0314%
19-Jun-15	0.0315%
22-Jun-15	0.0337%
23-Jun-15	0.0432%
24-Jun-15	0.0447%
25-Jun-15	0.0470%
26-Jun-15	0.0505%
29-Jun-15	0.0958%

Step 1 – Calculating the Adjusted RFR for 1 week LIBOR for each date

For example for 1 May 2015, the 1 week Adjusted RFR is the compounded average, using standard daycount conventions, of the daily SONIA fixings corresponding to 1 May 2015 to 8 May 2015. This equals 0.4623%.

Step 2 – For each date subtract the Adjusted RFR from the 1 week LIBOR fixing. For 1 May 2015 this equals 0.4905% minus 0.4623%, which is 0.0282%.

Step 3 – On the date the fallback is triggered, 29 June 2015, calculate the average of the daily 1 week LIBOR minus the corresponding adjusted RFR between the lookback window start (29 May 2015) and end date (23 June 2015). In this example that is equal to 0.0314% when using mean.

Step 4 – Replace all future references to 1 week LIBOR within contracts to the SONIA-derived rate plus the credit adjustment spread, 0.0314%, as calculated above.

ISDA forward approach

As per the the ISDA July 2018 Consultation, the definition is as follows:

The spread adjustment could be calculated based on observed market prices for the forward spread between the relevant IBOR and the adjusted RFR in the relevant tenor at the time the fallback is triggered.

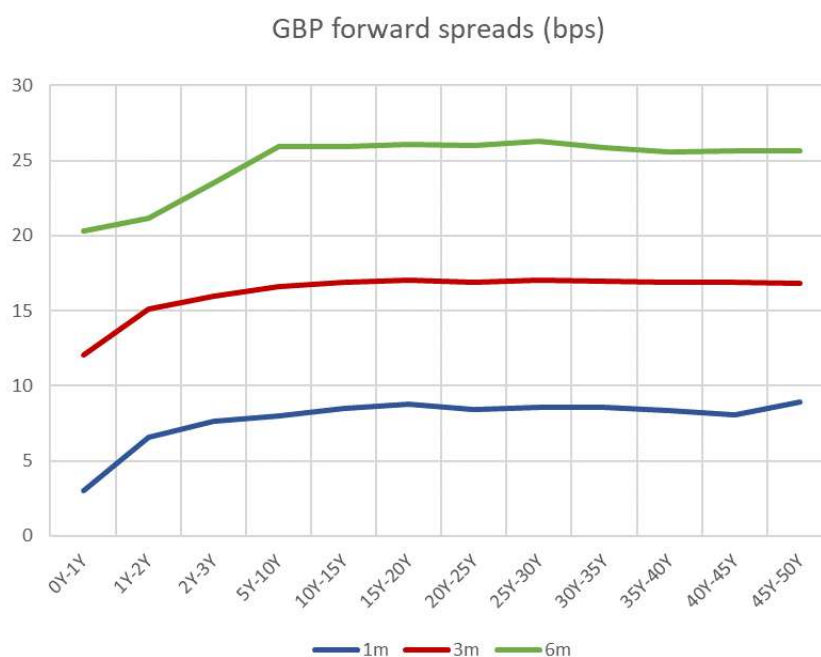
A prerequisite for this approach is the daily publication of a forward spread curve out to 30-60 years for the adjusted RFR, and in each relevant tenor, up until the fallback trigger date.

Such curves would need to be frozen at the point of the fallback trigger date upon the permanent discontinuation of GBP LIBOR and the spread would be added to the SONIA-derived rate to reflect the credit element present in the former index but not in the latter.

Beyond the length of the curve the spread for the last date on the curve would be applied.

Illustration for informational purposes

To provide a sense of how this approach would function, the chart below roughly outlines the forward approach for calculating the credit adjustment spread for 1-month, 3-month and 6-month GBP tenors based on recent data and assuming GBP LIBOR is discontinued in December 2019. Actual build out and implementation of the selected approach may yield different values.



Source: Bank of England calculations, and Bloomberg Finance L.P.

Worked Example

The publication of an adjustment table, calculated over a fixed observation period is not practical, neither are all possible dates independently observable. Unlike the stepped approach which applies simple compounding to calculate 5 forward basis levels that are assigned maturity buckets, the simple forward approach looks to preserve the curve shape.

To ensure standardisation across the industry and enable incorporation into models, simple linear interpolation may need to be adopted:

$$y = y_a + (y_b - y_a) \frac{x - x_a}{x_b - x_a} \text{ at the point } (x, y)$$

The replacement GBP LIBOR rate for any given day after cessation would be calculated as:

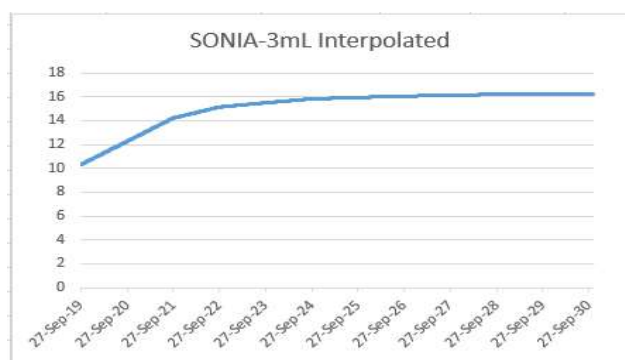
- SONIA-derived rate + linear interpolated credit adjustment spread

An observation period against a single date is not advisable, a minimum of 30 days would avoid single flows, market events from distorting forwards and allow normalisation.

26-Sep-19	Maturity	Sonia-3mL	Ref 1	Ref 2	Avg
1Y	26-Sep-20	BPBSSL1	12.20	12.33	12.27
2Y	26-Sep-21	BPBSSL2	14.30	14.14	14.22
3Y	26-Sep-22	BPBSSL3	15.20	15.09	15.15
4Y	26-Sep-23	BPBSSL4	15.50	15.50	15.50
5Y	26-Sep-24	BPBSSL5	15.80	15.85	15.83
6Y	26-Sep-25	BPBSSL6	15.90	16.00	15.95
7Y	26-Sep-26	BPBSSL7	16.00	16.10	16.05
8Y	26-Sep-27	BPBSSL8	16.10	16.20	16.15
9Y	26-Sep-28	BPBSSL9	16.20	16.20	16.20
10Y	26-Sep-29	BPBSSL10	16.20	16.20	16.20
12Y	26-Sep-31	BPBSSL12	16.20	16.20	16.20
15Y	26-Sep-34	BPBSSL15	16.20	16.20	16.20
20Y	26-Sep-39	BPBSSL20	16.20	16.20	16.20
25Y	26-Sep-44	BPBSSL25	16.20	16.20	16.20
30Y	26-Sep-49	BPBSSL30	16.20	16.20	16.20
40Y	26-Sep-59	BPBSSL40	16.20	16.20	16.20
50Y	26-Sep-69	BPBSSL50	16.20	16.20	16.20
60Y	26-Sep-79	BPBSSL60	16.20	16.20	16.20

*Data Source ICAP & Tulletts

y	Solved = 14.69
ya	14.22
yb	15.15
x	01-Apr-22
xa	26-Sep-21
xb	26-Sep-22



Source: Bank of America, and Bloomberg Finance L.P.

ISDA spot-spread approach

As per the ISDA July 2018 Consultation, the definition is as follows:

The spread adjustment could be based on the spot spread between the IBOR and the adjusted RFR on the day preceding the relevant announcement or publication triggering the fallback provisions. A variation would be to use the average of the daily spot spread between the IBOR and the adjusted RFR over a specified number of days (e.g., 5 trading days, 10 trading days or 1 month).

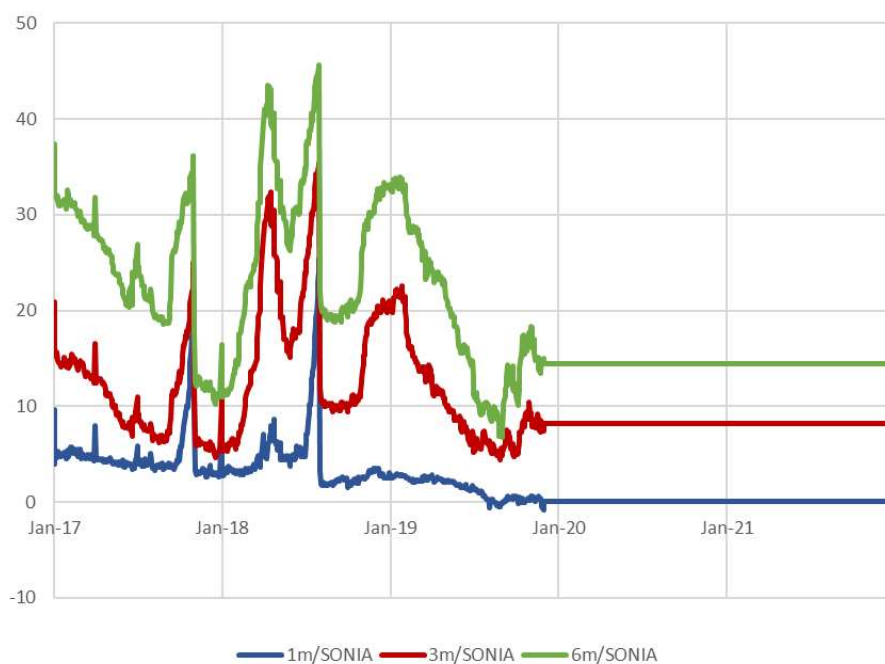
...

The spot-spread approach is not compatible with the compounded setting in arrears rate.

Illustration for informational purposes

To provide a sense of how this approach would function, the chart below roughly outlines the spot-spread approach for calculating the credit adjustment spread for 1-month, 3-month and 6-month GBP tenors. It is using a 5 day lookback and spot overnight rate, based on recent data and assuming GBP LIBOR is discontinued in December 2019. Actual build out and implementation of the selected approach may yield different values.

GBP spot spreads using 5 day lookback (bps)



Source: Bank of England calculations, and Bloomberg Finance L.P.

Worked Example

In this example, the credit adjustment spread for 3-month GBP LIBOR is calculated using the following hypothetical assumptions:

- A lookback of 5 days is assumed.
- Of the five methods to calculate the “Adjusted RFR”, this example considers the “Spot Overnight Rate Approach”:

The fallback could be to the RFR that sets on the date that is one or two business days (depending on the relevant IBOR) prior to the beginning of the relevant IBOR tenor.

- The LIBOR discontinuation date is on t_0 . Subscripts for time t denote business days prior to t_0 , e.g. t_{-1} : denotes one day prior to the LIBOR discontinuation date.

	RFR	3m LIBOR	3m LIBOR - RFR	Adjusted RFR
t_{+2}
t_{+1}	0.7100			0.7636
t_0	0.7120	0.7637	0.0536	
t_{-1}	0.7101	0.7580	0.0471	
t_{-2}	0.7109	0.7609	0.0500	
t_{-3}	0.7109	0.7708	0.0609	
t_{-4}	0.7099	0.7643	0.0538	
t_{-5}	0.7105	0.7660	0.0561	
t_{-6}	0.7099			

In this example the RFR taken one day prior (0.7099 at t_{-4}) is deducted from 3m LIBOR (0.7708 at t_{-3}) to determine the 3m LIBOR – RFR spread (0.0609 at t_{-3}).

This process is repeated for the 5 days prior to LIBOR discontinuation so that the mean of the 3m LIBOR – RFR between $\{t_{-5}, t_0\}$ is calculated (0.0536).

This becomes the static LIBOR – RFR spread that is added to RFRs going forward above the dotted line to establish the Adjusted RFR (0.7636).

$$3m\ LIBOR_{t+n} = RFR_{t+n-1} + [3m\ LIBOR - RFR]_{t_0}$$

Where:

- $3m\ LIBOR - RFR_{t-3} = 3m\ LIBOR_{t-3} - RFR_{t-4}$
- $[3m\ LIBOR - RFR]_{t_0}$ is the mean of the 3m LIBOR – RFR between $\{t_{-5}, t_0\}$, this is then applied to RFRs going forwards.

Modified forward approach

Similar to the ISDA forward approach, the relevant credit adjustment spread under this approach would be based on observed market levels for the forward GBP LIBOR/SONIA-derived rate spread in the relevant GBP LIBOR tenor. Upon the fallback activation date, the credit adjustment spread would be based on a formula (described further below) which specifies the credit adjustment spread to be applied for every future date. However, unlike the ISDA forward approach which aims to specify a *different* spread for every day into the future, this methodology restricts the number of spread values to 5.

For each GBP LIBOR tenor, the following methodology would be used to obtain the 5 credit spread adjustment values:

1. On each day through the observation period, the GBP LIBOR/SONIA-derived rate spread for the spot starting 2Y, 5Y, 10Y, 20Y, and 30Y points is observed.
2. At the end of the observation period, the average is taken of the 2Y, 5Y, 10Y, 20Y, and 30Y rates across all observed days.
3. The 2Y3Y, 5Y5Y, 10Y10Y, and 20Y10Y forward rates are derived from the averaged spot rates by basic de-compounding. This is repeated for each GBP LIBOR tenor. (Note 2Y3Y represents the GBP LIBOR/SONIA-derived rate basis for 3Y period in 2Y time).

An important consideration is the quality of the data inputted to calculate the credit adjustment spreads. Market data would need to be accurate, verifiable and accessible to market participants. Approved dealers would also need to submit daily observations of the required GBP LIBOR and SONIA-derived rates.

The following dates are relevant for this approach:

t_0 = The first calibration date which is the date from which observations of the forward curves commences. It is defined as the date 1Y prior to the fallback activation date (the 1 year observation period could also be adjusted depending on specific requirements).

t_1 = The fallback activation date.

Next there are the dates which define which credit adjustment spread should be applied from the fallback activation date:

$t_2 = t_1 + 2 \text{ years}$

$t_3 = t_1 + 5 \text{ years}$

$t_4 = t_1 + 10 \text{ years}$

$t_5 = t_1 + 20 \text{ years}$

t_6 = Potential final replacement rate publication date ($t_1 + 60Y$)

The replacement rate for any given day after the fallback activation date would be obtained by taking the relevant SONIA-derived rate and adding the credit adjustment spread according to the following map:

For $t_1 \leq t < t_2$ Use 2Y average credit spread

For $t_2 \leq t < t_3$ Use 2Y3Y average credit spread

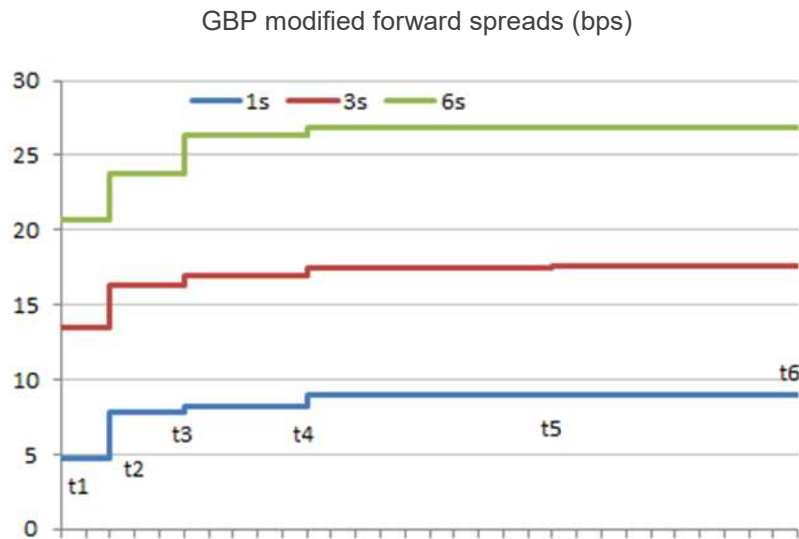
For $t_3 \leq t < t_4$ Use 5Y5Y average credit spread

For $t_4 \leq t < t_5$ Use 10Y10Y average credit spread

For $t_5 \leq t < t_6$ Use 20Y10Y average credit spread

Illustration for informational purposes

To provide a sense of how this approach would function, the chart below roughly outlines the modified forward approach for calculating the credit adjustment spread for 1-month, 3-month and 6-month GBP tenors, based on recent data and assuming GBP LIBOR is discontinued in December 2019. Actual build out and implementation of the selected approach may yield different values.



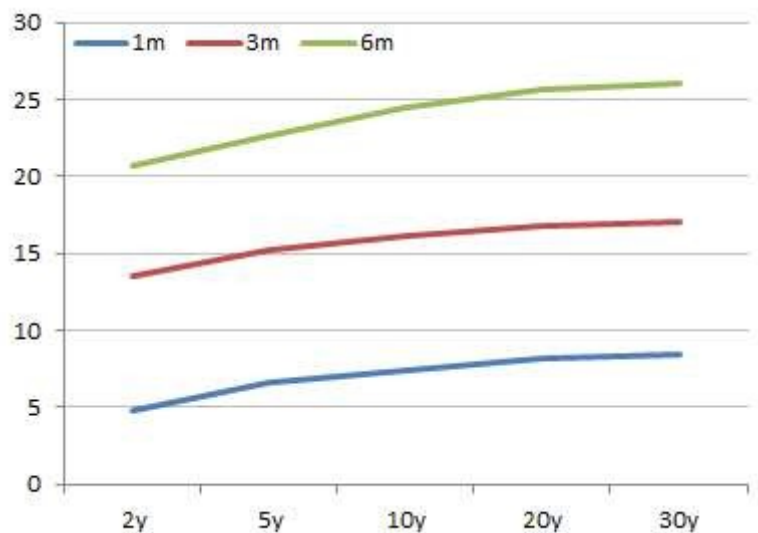
Source: JP Morgan.

Application

The above illustration is produced by firstly assuming the following spot starting LIBOR/SONIA spread on average from t_0 to t_1 :

Average Libor/SONIA spread (bp)

	1m	3m	6m
2y	4.75	13.5	20.75
5y	6.6	15.2	22.6
10y	7.4	16.1	24.5
20y	8.2	16.8	25.7
30y	8.45	17.05	26.1



Source: JP Morgan.

Source: JP Morgan.

The 2Y3Y, 5Y5Y, 10Y10Y, and 20Y10Y forward rates are then derived using basic de-compounding:

Libor/SONIA fwd spread (bp)

	1s	3s	6s
2Y3Y	7.83	16.33	23.83
5Y5Y	8.20	17.00	26.40
10Y10Y	9.00	17.50	26.90
20Y10Y	8.95	17.55	26.90

Source: JP Morgan.

The following rates schedule is then used from t_1 to map the chart:

Libor/SONIA fwd spread (bp)			
	1m	3m	6m
$t_1 \leq t < t_2$	4.75	13.50	20.75
$t_2 \leq t < t_3$	7.83	16.33	23.83
$t_3 \leq t < t_4$	8.20	17.00	26.40
$t_4 \leq t < t_5$	9.00	17.50	26.90
$t_5 \leq t < t_6$	8.95	17.55	26.90

Source: JP Morgan.