



Interest Rate Benchmark Reform

Several interest rate benchmarks are expected to be phased out or reformed in the coming years, with the goal of producing more robust and representative rates and more robust fallbacks for those rates.

NIBC has been proactively monitoring developments and has formed a dedicated team to support the bank and its clients on the transition. Over the coming months, NIBC, along with other market participants, will be accelerating our efforts on benchmark reforms, mostly in relation to the cessation of certain LIBOR rates by the end of 2021. We have prepared this communication to give you an overview of key developments.

NIBC recommends for you to seek guidance from your professional advisors on the topics discussed within this communication, and the potential impacts on your business and financial products.

What are Interest Rate Benchmarks and what are IBORs?

A large variety of financial products use interest rate benchmarks to determine interest rates and interest payment obligations. These interest rate benchmarks often reflect the rates of underlying interbank financing markets and are referred to as interbank offered rates or IBORs. Key IBORs include, among others, the London Interbank Offered Rate ('LIBOR') and the Euro Interbank Offered Rate ('EURIBOR').

What is LIBOR and why is it being phased out?

LIBOR is one of the most widely used interest rate benchmarks globally and serves as the interest rate benchmark for contracts worth an estimated ~US\$350 trillion^[1]. LIBOR rates are calculated for five currencies (Sterling, Euro, Japanese Yen, Swiss Franc and US Dollar) and seven tenors, based on submissions provided by a designated panel of global banks.

The UK's Financial Conduct Authority ('FCA') announced in 2017^[2] of its plan to phase out LIBOR rates by the end of 2021. The FCA cites concerns that the underlying market that LIBOR seeks to measure is no longer sufficiently active, which raises the question of robustness and whether the benchmark remains a representative rate. Further, the lack of activity in the underlying market^[3] means LIBOR continues to rely on the use of expert judgement, leaving it vulnerable to manipulation.

On March 5th, 2021 the FCA formally announced^[4] that all LIBOR rates will permanently cease to be provided or will no longer be representative. Immediately after December 31st, 2021 all Sterling, Euro, Japanese Yen and Swiss Franc and the 1-week and 2-month US Dollar LIBOR rates will cease to be provided or will no longer be representative. Immediately after June 30th, 2023 all remaining US Dollar LIBOR rates will cease to be provided or will no longer be representative. The FCA indicates that if certain rates will continue to be provided after these dates that those rates will be unrepresentative, and that representativeness will not be restored. Based on undertakings received from the panel banks, the FCA does not expect that any LIBOR rates will become unrepresentative before the relevant dates set out above.

What is EURIBOR and what will happen to it?

EURIBOR is a widely used interest rate benchmark for Euro-based transactions, and it is calculated for 5 different tenors. EURIBOR currently complies with EU Benchmark Regulations^[5], after its methodology was reformed in 2019. As a result, EURIBOR is not scheduled to be discontinued in the near future. However, recently^[29] recommendations were made on requirements for more robust fallbacks to deal with the potential future unavailability of EURIBOR. Consequently, also for Euro-based transactions developments on alternatives for EURIBOR are ongoing and should be watched closely.

What will happen to other IBORs?

The status of other IBORs differs. For some IBORs, such as the Norwegian Interbank Offered Rate (NIBOR) and Copenhagen Interbank Offered Rate (CIBOR), there is currently no expected cessation date. The Stockholm Interbank Offered Rate (STIBOR) is classified as a 'critical benchmark' under the EU Benchmark Regulation. The administrator of STIBOR is in the process of seeking authorization to operate as an approved administrator under the EU Benchmark Regulation. A formal application for authorization is expected during 2021, and if authorization is obtained STIBOR can continue to be used as an interest rate benchmark. Despite the anticipated continued use of these benchmarks, also for these benchmarks work is progressing on developing more robust interest rate benchmarks. If any of these benchmarks is relevant to you, we recommend you follow developments closely. Both financial regulators in the respective jurisdictions and administrators of the benchmarks regularly provide updates and publications on developments.

What are the alternatives to IBOR rates?

Since the announcement of the planned transition away from certain IBOR rates, regulators around the world have initiated the forming of working groups, for each of the affected currencies, to guide, evaluate and recommend alternatives to IBOR rates. Working groups are comprised of market participants such as, banks, asset managers, insurance companies, and large corporates, as well as industry bodies and trade associations representing various segments of the market.

The efforts and consultations within working groups have resulted in the identification of certain Risk-Free Rates ('RFRs'), as set out in the table below.

Currency	Rate	Alternative Risk-Free Rates	Publisher
USD	LIBOR	Secured Overnight Financing Rate ('SOFR')	Federal Reserve Bank of NY
EUR*	LIBOR, EURIBOR	Euro Short Term Rate ('€STR')	European Central Bank
GBP	LIBOR	Sterling Overnight Index Average ('SONIA')	Bank of England
JPY	LIBOR	Tokyo Overnight Average ('TONAR')	Bank of Japan
CHF	LIBOR	Swiss Average Rate Overnight ('SARON')	SIX Exchange

** Please note that although EURIBOR is currently not envisaged to be phased out, also for Euro transactions an alternative Risk-Free Rate (€STR) is available and may gain traction in the coming years.*

What are RFRs and how do they differ from IBOR rates?

Risk Free Rates are an alternative interest rate benchmark to IBOR rates and are generally based on overnight deposit rates, representing the rate for overnight (un)secured borrowing in the wholesale market. There are key differences between RFRs and IBOR, some of which are: Robustness - RFRs are based on large volumes of actual transactions within the overnight lending markets and are not dependent on quotes or the use of expert judgement. They are considered to be more robust compared to LIBOR rates, which generally rely on data from less active markets, and to some extent expert judgement.^{[6][7]}

Daily Rate vs Term Rate - As IBOR rates reflect borrowing in the interbank market for a longer period of time (up to 1 year) these term rates include a risk and a liquidity premium. IBORs are therefore generally higher than RFRs, which are overnight rates and therefore (near) risk-free. For existing contracts that need to switch from IBORs to RFRs this generally means that a spread adjustment ('Credit Adjustment Spread') will apply to compensate for this difference to avoid one party benefitting from the switch over the other.

Forward Looking vs Backward Looking Rates - IBOR rates are produced for different forward-looking tenors. This has the advantage that rates are known at the start of the interest period. As RFRs are overnight backward-looking rates, the interest rate applied to a period will generally not be known until (close to) the end of the interest period. See also below some of the practical implications this may have on your business.

What are key areas of attention for you?

Given the significant volume of financial contracts linked to IBOR rates, you will likely be affected in some form by the transition away from IBORs, or the introduction of more robust fallbacks. We therefore encourage you to review your outstanding financial products, and associated documentation and seek professional advice in assessing the potential implications on your business and financing arrangements. Here we highlight a (non-exhaustive) list of areas of importance:

Operational Considerations – The differences between RFRs and IBOR rates (as discussed above) have operational implications for banks and for borrowers. Key implications are the different, more complex, calculation methods for RFRs and the backward-looking nature of RFR rates. You should consult with your IT / operational staff, as well as external advisors in assessing the impact of processing financing products and derivatives referencing RFRs.

Cashflow Planning – The backward-looking nature of RFRs may impact your cashflow planning. It could be that your interest rate and interest payments amount are not known until (close to) the end of the interest period.

Hedging of RFR Cash Products – For IBOR-referencing cash products, such as loans, that will transition to RFRs and where interest rate hedging is in place, the alignment between transition of the loans and the derivatives is a key item for you to consider. Furthermore, the market for certain RFR-based derivatives products, such as caps, floors and other non-linear interest rate derivatives, is still developing. This may impact your ability to hedge your interest rate exposure or to transition existing non-linear derivatives. We encourage you to discuss the potential impacts, and how best to address potential mismatches between your loan and hedging products with your professional advisors and hedge counterparties.

Pricing of New RFR Cash Products – As indicated in the previous section, RFRs are generally lower than the IBOR rates they replace. For new cash products, such as loans, lenders will likely incorporate the lower RFR benchmarks in their pricing models, which could impact the margin they require on new transactions. In assessing the pricing of (new) loans, especially where IBOR-based offers need to be compared with RFR-based offers, borrowers should assess and compare the all-in pricing (benchmark + margin) for a fair comparison.

Accounting Implications – The transition from IBOR rates to RFRs may have accounting implications on your financing or hedging arrangements. Where hedge accounting is applied, attention should be paid to the potential impact the transition may have on the conditions to applying hedge accounting.

What are the key milestones that have been reached so far?

- **2012** – with the emergence of the LIBOR scandal in 2012, regulators sought to reform interest rate benchmarks^[8].
- **2015** – Since 2015, industry working groups have been established and identified alternative risk-free interest rate benchmarks in each of the five LIBOR currencies.
- **2016** – EU-wide benchmark regulation (BMR) was finalized, to become effective January 2018.^[9]
- **2017** – the UK's FCA announced in 2017 that by the end of 2021 it will no longer compel panel banks to support the LIBOR benchmark^[2].
- **2017** – the UK's Working Group on Sterling Risk Free Rates ('UK Working Group') identified SONIA as its recommended alternative to GBP LIBOR^[7]
- **2017** – the US' Alternative Reference Rates Committee ('ARRC') identified SOFR as its recommended alternative to USD LIBOR^[10]
- **2018** – the EU's Working group on Euro Risk-free Rates identified €STR as its recommended Risk Free Rate for EUR transactions.
- **2019** – EURIBOR is reformed to a hybrid methodology making it less dependent on expert judgement and thereby compliant with the BMR benchmark regulation.^[11]
- **September 2020** – The UK Working Group publishes recommendations for the use of SONIA for the loan markets using a compounded in arrears methodology. Their publications include detailed supporting slides and worked examples^{[12][13][14]}.
- **February 2021** – The ARRC publishes an Updated User's Guide to SOFR. They view SOFR compounded in arrears (in line with the recommended use for SONIA) as one of several robust calculation methods for business loans.^[15]
- **March 5th, 2021** – The FCA formally announced that as of specified dates all LIBOR rates will cease to be provided or will no longer be

representative.^[4]

- **March 5th, 2021** – The FCA’s announcement constituted a trigger event for the spread adjustments as applied by the International Swaps and Derivatives Association (‘ISDA’), based on the 5-year historical median methodology. ^{[16][17]}
- **March 30th, 2021** – The London-based Loan Market Association (‘LMA’) published the first recommended form of Risk-Free Rate facilities agreement, applying a compounded in arrears methodology for Risk-Free Rates. ^[18]
- **April 1st, 2021** – All new issuance of GBP LIBOR-referencing loan products and linear derivatives should cease per April 1st 2021. This includes transactions where Sterling is an optional currency and increases of existing transactions. ^[19]
- **May 11th 2021** – The Working Group on Euro Risk-free Rates publishes recommendations on appropriate fallbacks for EURIBOR. ^[29]
- **June 25th, 2021** – Joint public statement by the EC, ECB, EBA and ESMA on the cessation of LIBOR, encouraging market participants to act now.^[20]
- **July 1st, 2021** – The ARRC has indicated that as a best practice, all new issuance of USD LIBOR-referencing loan products that expire after the end of 2021 should cease by end of Q2 2021. ^[21]

What are the key milestones ahead?

- **September 2021** – By the end of Q3 2021, all legacy contracts referencing GBP LIBOR should (where viable) have been amended to reflect the switch to SONIA.^[19]
- **December 31st, 2021** – the FCA will no longer compel panel banks to submit rates used for the calculation of LIBOR. All GBP, EUR, YPN and CHF and the 1-week and 2-month USD LIBOR rates will cease to be provided or will no longer be representative.^[4]
- **December 31st, 2021** – The Federal Reserve indicates that all banks should cease issuance of new USD LIBOR-referencing contracts as soon as practicable and in any event by December 31st, 2021.^[21]
- **June 30th, 2023** – All remaining USD LIBOR rates will cease to be provided or will no longer be representative.^[4]

How is NIBC approaching Benchmark Reform and the transition away from LIBOR?

Benchmark reform, and the transition away from LIBOR specifically, is a significant undertaking for NIBC and the financial markets, given the magnitude of financial products linked to LIBOR rates. It is acknowledged that benchmark reform will affect both new and existing products offered by NIBC and will require changes to contractual documentation, and the adaptation of operational processes.

At NIBC we have a dedicated, multi-disciplinary project team in place which is supported by external advisors. We have been proactively tackling the transition by assessing our portfolios, reviewing our LIBOR-linked exposures, and actively evaluating potential wider impacts of the LIBOR transition. NIBC has worked intensively with its system providers and is now able to offer and service Risk Free Rate products.

Existing LIBOR-referencing Contracts

NIBC is in the process of transitioning existing LIBOR-referencing contracts, with the aim to finalize this in the second half of this year for most LIBOR rates (all except for certain USD LIBOR rates). If you have an existing LIBOR-referencing contract with NIBC, and we have not contacted you yet, we will reach out to you shortly to start the amendment process. We advise you to prepare for such a process by seeking guidance from your professional advisors on the topics discussed within this communication, and the potential impacts on your business and financial products.

New GBP/USD/CHF transactions

As of April 1st 2021 all new Sterling transactions entered into by NIBC reference SONIA and all new CHF transactions reference SARON. As of July 1st 2020, for all new US dollar transactions NIBC aims to have these reference SOFR from the outset. Where clients and/or other lenders are not yet ready or willing to accept SOFR-based (loan) products, alternative solutions can be discussed.

Contact details

Please contact your usual NIBC relationship point of contact with any questions concerning details found in this communication; or our internal dedicated LIBOR transition task force at replacement-benchmarks@nibc.com.

LIBOR Transition Information Sources

You will find useful information available through the [FCA website](#), the [Bank of England / UK Working Group’s website](#), the [ARRC’s website](#) and the [ECB website](#) with materials on benchmark interest rate reform, the LIBOR transition and Risk Free Rates.

Legal Disclaimer

NIBC does not, via this communication, provide any advice or recommendation. NIBC recommends for you to seek guidance from your professional advisors on the possible implications of the changes outlined in this article on your business, including financial, legal, accounting and tax impacts. Other Frequently Asked Questions

How should the Credit Adjustment Spread be determined?

Since RFRs are generally lower than LIBOR rates, for existing contracts that need to transition, lenders and borrowers will likely need to agree a Credit Adjustment Spread (‘CAS’) in order to avoid one party benefiting from the transition over the other.

There are several approaches to calculating the CAS. The most widely adopted approach is the 5-year historical median approach as implemented by ISDA. This methodology takes the median of the difference between the relevant LIBOR rate and the RFR equivalent for a 5-year historical period. Please note that per the ISDA methodology, the FCA’s announcement on March 5th, 2021 on the cessation of LIBOR constituted a ‘rate fixing event’. Consequently, the historical 5-year period has now been fixed (ending on March 5th, 2021) and the spread adjustments are now fixed and are published by Bloomberg. The 5-year historical median approach has been recommended by both the UK Working Group and the ARRC as the preferred method for transitions where the switch to the Risk Free Rate effectively falls on or after the cessation date of LIBOR, as is the case with Passive Transition.^[22] ^[23] For approaches to calculating spread adjustments for Active Transition please review the publication of the UK Working Group^[23] on this topic.

What constitutes Active and Passive Transition?

Existing LIBOR-referencing contracts will need to be amended to reflect a transition from LIBOR to Risk Free Rates. For all LIBOR rates phased out by the end of 2021, our aim is to have these contracts amended by the end of Q3. The amended contract will specify at which date the switch to the Risk-Free Rate will become effective.

Passive transition implies that all remaining LIBOR rates until cessation will be used and that the switch to the Risk Free Rate will become effective on the first roll-over or payment date when LIBOR is not available anymore (which would then be in 2022 for most LIBOR rates). This approach aligns with the ISDA’s fallback approach for derivatives and use of the ISDA spread adjustments.

Active transition implies that the switch to the Risk-Free Rate will become effective on a date prior to the cessation date of LIBOR. As the ISDA spread adjustments are intended for passive transition, for active transition these are considered less appropriate and transaction specific adjustment spreads will have to be calculated. These should reflect market spreads between LIBOR and the RFR on or around the effective switch date, taking (ia) amortization schedules and maturity into account.

NIBC prefers a passive transition approach as this is viewed as less complex in execution, and more transparent in determining the spread adjustment.

What methods are there in calculating interest for loans using Risk Free Rates?

There are several calculation methods that can be used to 'convert' daily RFR rates into an average rate that can be applied to an interest period. In Simple Interest calculations, the daily rates are applied to the interest period based on a simple average rate, without compounding. In Compounding Interest calculations, the daily rates are compounded into a compounded rate applied to the interest period. Where Simple Interest calculations are simpler to administer, Compounding Interest better reflects the time value of money and best aligns with the calculation methods in the derivatives market, thereby allowing for more accurate hedging.^[15] Compounding Interest can be calculated in advance or in arrears, we refer to the Updated User's Guide to SOFR for further elaboration on different calculation methods.^[15]

The UK Working Group has recommended using SONIA compounded in arrears as preferred method for the professional (non-retail) market, such as business loans, syndicated loans and derivatives. The ARRC has indicated that SOFR compounded in arrears is one of several robust methods in calculating interest rates based on RFRs.^{[26][27]} The LMA has published a recommended form of Risk Free Rate facilities agreement, applying a compounded in arrears methodology.

Legal Disclaimer

NIBC does not, via this communication, provide any advice or recommendation. NIBC recommends for you to seek guidance from your professional advisors on the possible implications of the changes outlined in this article on your business, including financial, legal, accounting and tax impacts.

Other Frequently Asked Questions

How should the Credit Adjustment Spread be determined?

Since RFRs are generally lower than LIBOR rates, for existing contracts that need to transition, lenders and borrowers will likely need to agree a Credit Adjustment Spread ('CAS') in order to avoid one party benefiting from the transition over the other.

There are several approaches to calculating the CAS. The most widely adopted approach is the 5-year historical median approach as implemented by ISDA. This methodology takes the median of the difference between the relevant LIBOR rate and the RFR equivalent for a 5-year historical period. Please note that per the ISDA methodology, the FCA's announcement on March 5th, 2021 on the cessation of LIBOR constituted a 'rate fixing event'. Consequently, the historical 5-year period has now been fixed (ending on March 5th, 2021) and the spread adjustments are now fixed and are published by Bloomberg. The 5-year historical median approach has been recommended by both the UK Working Group and the ARRC as the preferred method for transitions where the switch to the Risk Free Rate effectively falls on or after the cessation date of LIBOR, as is the case with Passive Transition.^[22]^[23] For approaches to calculating spread adjustments for Active Transition please review the publication of the UK Working Group^[23] on this topic.

What constitutes Active and Passive Transition?

Existing LIBOR-referencing contracts will need to be amended to reflect a transition from LIBOR to Risk Free Rates. For all LIBOR rates phased out by the end of 2021, our aim is to have these contracts amended by the end of Q3. The amended contract will specify at which date the switch to the Risk-Free Rate will become effective.

Passive transition implies that all remaining LIBOR rates until cessation will be used and that the switch to the Risk Free Rate will become effective on the first roll-over or payment date when LIBOR is not available anymore (which would then be in 2022 for most LIBOR rates). This approach aligns with the ISDA's fallback approach for derivatives and use of the ISDA spread adjustments.

Active transition implies that the switch to the Risk-Free Rate will become effective on a date prior to the cessation date of LIBOR. As the ISDA spread adjustments are intended for passive transition, for active transition these are considered less appropriate and transaction specific adjustment spreads will have to be calculated. These should reflect market spreads between LIBOR and the RFR on or around the effective switch date, taking (ia) amortization schedules and maturity into account.

NIBC prefers a passive transition approach as this is viewed as less complex in execution, and more transparent in determining the spread adjustment.

What methods are there in calculating interest for loans using Risk Free Rates?

There are several calculation methods that can be used to 'convert' daily RFR rates into an average rate that can be applied to an interest period. In Simple Interest calculations, the daily rates are applied to the interest period based on a simple average rate, without compounding. In Compounding Interest calculations, the daily rates are compounded into a compounded rate applied to the interest period. Where Simple Interest calculations are simpler to administer, Compounding Interest better reflects the time value of money and best aligns with the calculation methods in the derivatives market, thereby allowing for more accurate hedging.^[15] Compounding Interest can be calculated in advance or in arrears, we refer to the Updated User's Guide to SOFR for further elaboration on different calculation methods.^[15]

The UK Working Group has recommended using SONIA compounded in arrears as preferred method for the professional (non-retail) market, such as business loans, syndicated loans and derivatives. The ARRC has indicated that SOFR compounded in arrears is one of several robust methods in calculating interest rates based on RFRs.^{[26][27]} The LMA has published a recommended form of Risk Free Rate facilities agreement, applying a compounded in arrears methodology.

For all RFR transactions (both for new RFR-based transactions and for existing LIBOR-referencing transactions that transition to RFRs) NIBC currently adopts a compounded in arrears methodology, implemented using the LMA's recommended form RFR / rate switch provisions.

Will Term Rates based on Risk Free Rates become widely used?

For SONIA a term rate produced by Refinitiv is currently available.^[24] For SOFR a term rate produced by CME Group is currently available.^[28] Term Rates for RFRs are derived from transactions in the derivatives market, where these markets are considerably smaller in transaction volumes than the underlying overnight financing market reflected by the RFRs. Consequently, both the UK Working Group and the ARRC have indicated that Term Rates based on Risk Free Rates will be less robust than direct use of RFRs in contracts (such as a compounded in arrears methodology) and therefore should be restricted to a limited scope of use cases.^[25]

NIBC views that RFR Term Rates are currently not an appropriate or widely accepted alternative for any of the products within NIBC's current suite of products. We note that for existing USD LIBOR-referencing contracts that will need to transition to SOFR or for new USD loans, a SOFR Term Rate could at some point be a more widely accepted option. However, currently the adoption and timing thereof is uncertain.

Is a synthetic LIBOR rate a viable option for my product?

The availability of any synthetic LIBOR rates after the specified cessation dates of LIBOR is highly uncertain and if they do become available, they will in any case be considered unrepresentative. The use of a synthetic LIBOR is discouraged by the relevant regulators. In previous publications tough legacy contracts, for which a synthetic LIBOR will potentially be maintained, have been described as ‘contracts that genuinely have no realistic ability to be renegotiated or amended to transition to an alternative benchmark’.

NIBC does not view the use of a synthetic LIBOR as a viable option for any of the LIBOR-referencing contracts that it is a party to.

Footnotes

- [1] ARRC Releases Second Report on Transition from LIBOR (05 March 2018) – <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2018/ARRC-second-report-press-release>
- [2] FCA Statement published 25/11/17, available at – <https://www.fca.org.uk/news/statements/fca-statement-libor-panels>
- [3] Alternative Reference Rates Committee – <https://www.newyorkfed.org/arrc/sofr-transition#aboutsofr>
- [4] FCA announcement on cessation of LIBOR – <https://www.fca.org.uk/news/press-releases/announcements-end-libor>
- [5] About EURIBOR® - <https://www.emmi-benchmarks.eu/euribor-org/about-euribor.html#:~:text=EURIBOR%C2%AF%20is%20BMR%2Dcompliant,existing%20and%20new%20contracts%2Finstruments>.
- [6] The ARRC’s Updated Users Guide to SOFR – <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/users-guide-to-sofr2021-update.pdf>
- [7] UK Working Group’s memo on SONIA as alternative to LIBOR – <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/sonia-as-the-risk-free-reference-rate-and-approaches-to-adoption.pdf>
- [8] FCA Press Release published 27/06/2012 – <https://www.fca.org.uk/news/press-releases/barclays-fined-%C2%A3595-million-significant-failings-relation-libor-and-euribor>
- [9] EU Benchmark Regulation (BMR) – <https://www.esma.europa.eu/policy-rules/benchmarks>
- [10] The ARRC Selects a Broad Repo Rate as its Preferred Alternative Reference Rate (June 2017) – <https://www.newyorkfed.org/medialibrary/microsites/arrc/files/2017/ARRC-press-release-Jun-22-2017.pdf>
- [11] EURIBOR Reform – <https://www.emmi-benchmarks.eu/euribor-org/euribor-reform.html>
- [12] UK Working Group’s recommendation on SONIA conventions for loan market – <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/statement-on-behalf-of-rfrwg-recommendations-for-sonia-loan-market-conventions.pdf>
- [13] UK Working Group’s recommendation on SONIA conventions for loan market - Supporting Slides – <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/uk-loan-conventions-supporting-slides.pdf>
- [14] UK Working Group’s recommendation on SONIA conventions for loan market - Illustrative Worked Example – <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/uk-loan-conventions-worked-examples.xlsx>
- [15] The ARRC’s Updated User’s Guide to SOFR – <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/users-guide-to-sofr2021-update.pdf>
- [16] ISDA announcement in response to FCA’s announcement on cessation of LIBOR (March 2021) – <https://www.isda.org/2021/03/05/libor-cessation-and-the-impact-on-fallbacks/>
- [17] Bloomberg Notice on Fixing of Spread Adjustments – https://assets.bbbhub.io/professional/sites/10/IBOR-Fallbacks-LIBOR-Cessation_Announcement_20210305.pdf
- [18] LMA’s recommended form Risk Free Rate / Rate Switch facilities agreements – <https://www.lma.eu.com/libor/documents#rate-switch-documentation-and-commentary152>
- [19] UK Working Groups’ roadmap for 2021 LIBOR transition <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/rfr-working-group-roadmap.pdf?la=en&hash=92D95DFA056D7475CE395B64AA1E6A099DA6AC5D>
- [20] Joint public statement by the EC, ECB, EBA and ESMA on the cessation of LIBOR – https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.pr210625_annex-f47a27b92e.en.pdf
- [21] ARRC’s best practices for completing transition from LIBOR – <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC-Best-Practices.pdf>
- [22] ARRC’s recommendations for spread adjustments for cash products – https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Recommendation_Spread_Adjustments_Cash_Products_Press_Release.pdf
- [23] UK Working Group’s publication on approaches to calculating spread adjustment for Active Transition – <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/credit-adjustment-spread-methods-for-active-transition-of-gbp-libor-referencing-loans.pdf>
- [24] Refinitiv produced SONIA Term Rate – <https://www.refinitiv.com/en/financial-data/financial-benchmarks/term-sonia-reference-rates>
- [25] ARRC scope of use SOFR Term Rates – [ARRC_Scope_of_Use.pdf \(newyorkfed.org\)](https://www.newyorkfed.org/arrc/scope-of-use.pdf)
- [26] ARRC Bilateral Loan Conventions for SOFR https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_SOFR_Bilat_Loan_Conventions.pdf
- [27] ARRC Syndicated Loan Conventions for SOFR https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Press_Release_Syndicated_Loan_Conventions.pdf
- [28] CME Group produced SOFR Term Rate – <https://www.cmegroup.com/market-data/cme-group-benchmark-administration/term-sofr.html#>
- [29] Working Group on Euro Risk-free Rates recommendations on EURIBOR fallbacks – https://www.ecb.europa.eu/pub/pdf/other/ecb_recommendationsEURIBORfallbacktriggereventsandESTR.202105-9e859b5aa7.en.pdf

NIBC Bank N.V.

The Hague | London | Brussels | Frankfurt