

LIBOR and Risk Free Rates – Frequently Asked Questions

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The cessation of LIBOR has significant implications for the loan market and borrowers need to prepare. This note addresses some key frequently asked questions.

1. When will LIBOR cease to be published?

The Financial Conduct Authority announced on 5 March 2021 that as from the end of 2021 LIBOR for all currencies and tenors will either cease to be published or cease to be representative of the market it is intended to measure other than USD LIBOR for overnight, one month, three month, six month and 12 month tenors. USD LIBOR for those popular tenors will now continue to be published until 30 June 2023 to reduce the amount of legacy USD LIBOR deals needing to transition. Regulators have emphasised the need for new transactions to move away from using LIBOR as a benchmark and to make preparations for legacy LIBOR referencing deals to transition to new benchmarks, to avoid market disruption.

2. What benchmark will replace LIBOR?

A risk free rate has been identified for each LIBOR currency. The table below sets out the relevant currency and corresponding risk free rate..

Jurisdiction	LIBOR Currency	Risk Free Rate
USA	USD	Secured Overnight Financing Rate (SOFR)
United Kingdom	GBP	Sterling Overnight Index Average (SONIA)
Switzerland	CHF	Swiss Average Rate Overnight (SARON)
Japan	JPY	Tokyo Overnight Average Rate (TONA)
European Union	EUR	Euro Short-Term Rate (€STR)



3. How do risk free rates differ from LIBOR?

The table below sets out some of the key differences between LIBOR and risk free rates.

Feature	LIBOR	Risk Free Rate
What tenor?	Forward looking term rate – for periods of different maturities	(Mostly) backwards looking – measure interest charged the previous day
What do they measure?	LIBOR measures the average rates at which those submitting to LIBOR could obtain wholesale unsecured funding for set periods. It therefore incorporates an element of bank and term credit risk.	Risk free rates vary in what they measure e.g. SOFR measures the broad cost of borrowing USD overnight collateralised by US Government securities Risk free rates do not incorporate bank and term credit risk in the same way as LIBOR. Over an equivalent period risk free rates are likely to be lower than LIBOR
Who administers the rate?	LIBOR has a single administrator - ICE Benchmark Administration Limited	Risk free rates each have their own administrator – e.g. SONIA is administered by the Bank of England. SOFR by the Federal Reserve Bank of New York
Publication times	LIBOR is published around 11.55 am London time prior to the period to which it relates (e.g. start of interest period for sterling, 2 business days prior for other currencies)	Risk free rates vary in their publication times – SOFR is published at 8am (EST) on following New York business day, SONIA 9am (London time) on following London business day
What currencies?	Euro, Japanese Yen, sterling, Swiss francs and US dollars	Each risk free rate relates to a different currency so SONIA relates to sterling and SOFR – USD



4. When will borrowers know the amount of interest payable?

Because risk free rates are backwards looking, their use could lead to a borrower only knowing at the end of an interest period what the total interest payment was going to be. Calculation methods have developed to enable the borrower to have some advance notice of the payment due. .

What is a look back?

The most common way to achieve this is to use a look back. A look back is an agreed number of banking days prior to the date on which the rate of interest is to be determined. The screen rate used to determine the rate on any given day in the interest period is therefore the screen rate published the relevant look back prior to that day.

To use an example, in a loan agreement using SONIA and a look back of five London banking days, in order to determine the SONIA rate for 18 April 2019, the SONIA screen rate for 11 April 2019 would be used. The borrower would know the amount of the total interest payment due five London Banking Days (i.e. the look back) prior to the interest payment date.

What is an observation period?

The period commencing the agreed look back prior to the start of the interest period and ending the agreed look back prior to the interest payment date at the end of the interest period is often referred to as the “observation period”.

Will there be forward-looking term risk free rates?

It will not be possible for the borrower to receive notice of the total payment of interest due prior to the commencement of the interest period (as is currently achievable with LIBOR) unless a forward-looking term based risk free rate is developed. While term SONIA is now published, the anticipated date of publication of term SOFR is not yet known and a forward-looking term risk free rate is unlikely to be available for all former LIBOR currencies. Regulators have emphasised that the use of forward-looking term risk free rates should be restricted to certain types of transactions and that the use of a compound interest rate or simple interest in arrears risk free rate calculation is preferred for the majority of transactions in the loan market.



5. How will interest be calculated when using risk free rates as a benchmark?

Unlike LIBOR where the borrower can look at the screen rate for the relevant tenor to determine the benchmark rate for the whole of the interest period, the use of a risk free rate will involve the need to perform a more complex calculation. A number of calculation methods have been suggested to determine the applicable rate over an interest period using risk free rates as a benchmark.

Cumulative Compounded Rate – One way of doing this is to calculate the cumulative compounded rate over the observation period commencing the relevant look back prior to the start of the interest period and ending the relevant look back prior to the interest payment date. However, by using this method of calculation, the interest rate is known only at the end of the relevant observation period. As such, this method would not result in an accurate determination of the interest rate mid-interest period (for example where the loan is prepaid in the middle of an interest period).

Daily Non-Cumulative Compounded Rate – Because of the difficulties in determining interest mid-interest period when using a cumulative compounded rate, the London loan market now favours the use of a daily non-cumulative compounded rate in loan documentation. The daily non-cumulative compounded rate for a given day is the cumulative compounded rate for the prior day subtracted from the cumulative compounded rate for that given day. Overall, the use of a daily non-cumulative compounded rate to determine interest over an interest period should result in the same amount as if a cumulative compounded rate been used over the same period. However, the use of a daily non-cumulative compounded rate enables a more accurate calculation of interest mid-interest period.

Daily Simple – The Alternative Reference Rates Committee of the Federal Reserve Bank of New York (ARRC) has also recommended the use of a simple un compounded and non-cumulative rate (sometimes known as “Daily Simple”) for the purposes of calculating the rate. The interest rate per annum is then derived from the daily screen rate for the relevant risk free rate benchmark. This is then applied to the principal to determine the amount of interest due on each day during the interest period.

Timing of Payment - In each of the above methods, the total interest payment due would be made by the borrower at the end of the interest period – even where the interest calculation is performed daily.

Margin and Credit Adjustment Spread - In order to calculate the total applicable interest rate over an interest period, the margin and credit adjustment spread (if any) need to be added to the relevant benchmark rate. For compounded rates, it is generally expected that the margin and credit adjustment spread (if any) will be added to the interest rate after compounding to calculate the amount due.

When is compounding performed? - Compounding is performed on banking days in the relevant currency jurisdiction only. If there is a need to determine interest on a non-banking day then the rate from the previous banking day would be used.



6. What is an observation shift and why does it matter?

Observation Shift – One key consideration in calculating interest using risk free rates and a look back is whether to apply an observation shift. As stated above a look back is a fixed period of banking days falling prior to the date on which the rate of interest is to be determined. Using the previous example and assuming a sterling loan and a five London banking day look back, this means that in calculating the interest rate for 18 April 2019, you would use the SONIA screen rate for 11 April 2019.

However, where there is a difference in the incidence of non-banking days between the observation period (i.e. the period commencing the look back prior to the start of the interest period and ending the look back period prior to the end of the interest period) and the interest period, how should the rate be weighted? Should this be by reference to the observation period or by reference to the interest period?

An observation shift means that the applicable rate is weighted according to the number of days to which that rate applies in the relevant observation period rather than in the interest period. Again using the above example, 18 April 2019 was the Thursday before the Easter public holiday in the UK. The Easter public holiday lasts 4 days. 11th April 2019 was a normal Thursday. If an observation shift is used, then, in calculating the interest, the 11th April screen rate would be applied for 1 day as the 11 April 2019 was just a normal Thursday. Without an observation shift, the 11th April screen rate would be applied for 5 days as 18th April 2019 was the day before a 4 day public holiday.

The use of an observation shift is compatible with certain rate calculation tools such as the SONIA and SOFR indexes which are published by the Bank of England and Federal Reserve Bank of New York respectively. It is also compatible with the fallback compounded rates used by ISDA in its IBOR Fallbacks Supplement and Protocol. However, the use of an observation shift can cause an issue for determining interest mid-period if there are a different number of days in the interest period and observation period.

Further details of common market conventions for use in the calculation of interest using risk free rates are in the adjacent table.



7. What are market conventions used to calculate the rate?

Whatever method is chosen to calculate the rate using a risk free rate as a benchmark, it will always involve a more complicated calculation than using LIBOR. There are also more potential variables involved in calculating the rate. Although some market consensus has developed regarding market conventions for the use of risk free rates in loan transactions, different approaches are likely to emerge in different currency jurisdictions and in different sectors of the market. Indeed, market conventions applied to SOFR may differ in dollar denominated loan documentation between the New York banking market and the London and EMEA banking market.

We compare the recommendations of the Bank of England and the ARRC in the next table.

Recommendations of Bank of England and ARRC

Market Convention	Bank of England recommended market conventions for SONIA	ARRC recommended market conventions for SOFR
Calculation method	Daily non-cumulative compounded rate recommended.	<ul style="list-style-type: none"> • Daily simple • Cumulative compounded rate • Daily non-cumulative compounded rate <p>ARRC states that although a compounded rate better reflects the time/value of money, there is likely to be only a few basis points difference between a compounded and simple rate in practice.</p>
With/without observation shift?	Without observation shift (although the use of an observation shift remains a “robust and viable alternative”)	Without observation shift
Recommended credit adjustment spread?	ISDA – historical median approach	ISDA – historical median approach
Compounding only on banking days?	Only on banking days.	Only on banking days.
Compounding the rate or compounding the balance?	Compounding the rate (however mentions that a number of methods exist and choice left to individual market participants).	Recognises that where a compounded rate is used either compounding the rate or compounding the balance are acceptable approaches.
Compounding the margin?	Margin to be added after rate compounding – i.e. not to be compounded	For transitioning deals – margin to be added after rate compounding – i.e. not to be compounded
Compounding the credit adjustment spread?	Credit adjustment spread to be added after rate compounding - i.e. not to be compounded.	For transitioning deals – credit adjustment spread to be added after rate compounding – i.e. not to be compounded.
Rounding convention	SONIA to be rounded to four decimal places	SOFR to be rounded to 5 decimal places.
	Interest payment due to be rounded to two decimal places.	Interest payment to be rounded to two decimal places.
	Additional rounding conventions recommended for the purposes of performing the calculation of daily non-cumulative compounded rate.	No rounding to apply internally to calculations.
Business day convention	Modified following	Modified following
Length of lookback period	5 London banking days	No recommendation given.
Day Count	Actual/365	Actual/360
Zero rate floor?	Parties free to decide whether floor applies and at what level.	Apply the floor daily and not at the end of the interest period.
	Recommended that floor applied daily and not at end of interest period.	For legacy contracts transitioning from LIBOR to SOFR, suggested that the floor would be calculated by subtracting the credit adjustment spread from the existing LIBOR floor to produce the revised SOFR floor.
	For legacy contracts containing a floor it is recommended that SONIA is adjusted (so that SONIA plus the credit adjustment spread is not less than the floor). However, it is recognised that some market participants may want to adjust the credit adjustment spread instead.	



8. How can a borrower check the calculation?

One of the challenges for borrowers in using loans with a risk free rate as a benchmark is how to verify the calculation of the interest payment due.

The recent switch exposure draft published by the LMA provides that a borrower will be notified of the total amount of interest due and the daily rates used to calculate that amount when the total amount of interest is determinable. This means that the earliest this notification could be given is five banking days (or the relevant look back) prior to the interest payment date.

Depending on the market conventions used to calculate the rate, it may be possible to make use of the SONIA Index published by the Bank of England and the SOFR Index published by the Federal Reserve Bank of New York. These indexes publish cumulative compounded SONIA and cumulative compounded SOFR respectively on a daily basis. They are compatible with a calculation method that uses an observation shift. They do not work well with the use of a zero rate floor.

ARRC have announced that its recommended spread adjustments and spread adjusted rates will be published for cash products.



9. What is a credit adjustment spread and why is it needed?

Risk of value transfer on transitioning legacy LIBOR-referencing transactions

LIBOR and risk free rates differ in what they measure. LIBOR measures the average rate at which those submitting to LIBOR could obtain wholesale unsecured funding for set periods. The rate approximates to a bank's cost of funds and incorporates a certain assessment of bank and term credit risk. By definition a risk free rate does not incorporate bank and term credit risk. SONIA measures only the rate of interest paid on sterling short term wholesale deposits. SOFR measures the broad cost of borrowing USD overnight collateralised by US Government securities.

Over an equivalent period, interest that is calculated at a risk free rate is therefore likely to be lower than LIBOR. As a consequence, when transitioning a legacy LIBOR referencing deal to a deal using a risk free rate there is a risk that one party may benefit and another may lose as a result of that transition. This is sometimes referred to as a risk of value transfer. It is therefore expected that when legacy LIBOR referencing deals transition to risk free rates a spread adjustment will need to be determined to reflect the difference between LIBOR and risk free rates in order to prevent value transfer.

Pricing newly originated transactions involving risk free rates

For newly originated transactions involving risk free rates, the level of margin or other pricing adjustment required to ensure that the agreed rate of interest compensates the bank for its cost of funds (as well as returning a profit to the bank) will be a matter for commercial negotiation.



10. How is the credit adjustment spread calculated?

The favoured method for calculating the credit adjustment spread for legacy LIBOR referencing deals transitioning to risk free rates is the ISDA historical median approach. This involves comparing the relevant LIBOR and compounded risk free rate for an equivalent tenor over a significant static look back period of 5 years prior to the date on which the credit adjustment spread is to be determined. The median spread between LIBOR and the compounded risk free rate would then be applied to the risk free rate going forward as the credit adjustment spread for the relevant transaction.

The FCA announcement of 5 March 2021 as to the date of cessation and non-representativeness of LIBOR constituted an "Index Cessation Event" for the purposes of the ISDA IBOR Fallbacks Supplement. As such the value of the credit adjustment spread for each LIBOR currency and tenor has now been fixed and is published by Bloomberg.

There have been questions as to the suitability of the historical median approach to determine the credit adjustment spread in legacy LIBOR transactions that transition to risk free rates ahead of actual LIBOR cessation. (These are sometimes referred to as "early opt-in transactions"). This is because the historical median approach measures a value at a single point in time based on a historical average and therefore does not necessarily represent present value on a forward-looking basis. Some early opt-in transactions have instead determined the credit adjustment spread by reference to the forward market or simply agreed a rate.



11. What other documentary points does the borrower need to consider in loan agreements referencing risk free rates?

Because risk free rates are different in nature to LIBOR, borrowers may wish to consider the following additional consequences for loan documentation:

Break Costs – Currently in floating rate loan documentation if a borrower prepays the loan mid-interest period then the borrower will be obliged to pay to the lender break costs. Break costs assume that the lender is match funding its loan. If the borrower repays mid interest period then the Lender may suffer a loss if the cost to it of maintaining the loan for the remainder of the interest period is more than the lender would be able to obtain by redepositing the money for the period from receipt of the loan until the last day of the interest period.

This rationale does not apply where a loan references risk free rates. Risk free rates accrue on a daily basis and are not an approximation of the cost to the bank of maintaining the loan over the interest period. As such, the current methodology for calculating floating rate break costs is no longer suitable where interest is calculated using risk free rates.

Nonetheless, lenders may suffer a loss if their funding arrangements for maintaining a loan are interrupted by a prepayment and it is likely that lenders will seek to be compensated for this. There are a number of ways in which this could be addressed such as by the inclusion of indemnity wording or prepayment fees.

Market Disruption – Floating rate loan agreements are generally drafted on the basis that LIBOR is an approximation for a bank's cost of funds although in reality very few banks match fund themselves in the interbank market. The current market disruption clause in Loan Market Association (LMA) based documentation enables a bank to change the basis on which interest is calculated if a prescribed proportion of the syndicate are unable to fund themselves at LIBOR. However risk free rates are mostly some kind of overnight deposit rate and as such do not pretend to represent a bank's cost of funds. So what happens if the bank transitions from LIBOR to risk free rates (with associated credit adjustment spread) but cannot actually fund itself at that new rate in the market?

In the switch exposure drafts published by the LMA, the bank retains an ability to change the basis on which interest is calculated if a prescribed portion of the syndicate are unable to fund themselves at a rate equivalent to the cumulative compounded risk free rate plus the credit adjustment spread (defined as the "Market Disruption Rate").

However, this could present problems for a borrower. First, the market disruption clause could be invoked very close to the actual interest payment date. Indeed, it is difficult to see how it could be invoked in practice much before the relevant look back period prior to the interest payment date. A change in the basis upon which interest is calculated at such a late stage would create budgeting difficulties for the borrower.

Secondly, because the use of risk free rates as a benchmark in loan transactions is new, it is as yet uncertain as to whether proposed pricing will sufficiently reflect the cost of funds to a bank of maintaining the loan. As such, there may be a greater chance that this kind of provision is invoked. On the other hand and for the same reason, a bank may want the ability to change the basis on which interest is calculated, if in fact the pricing of the deal using the new benchmark does not reflect their cost of funds.

Notification and Grace Periods – Borrowers will need to consider at what point they will be notified of the interest payment due and how this relates to time periods for payment. Borrowers may also need to identify information that is required for the purposes of any regulatory consents such as exchange control approvals. As a consequence, borrowers may wish to consider if the grace period for non-payment in events of default should be increased.



12. Do I need to be concerned about related financial products transition to risk free rates?

In any transaction where there are related LIBOR referencing financial products such as a hedging agreement or a limited recourse loan and lease structure then so far as possible, those products should transition to risk free rates at the same time and on the same basis. This is particularly the case for interest rate hedging as a mismatch could cause basis risk.



13. What is ISDA's approach to LIBOR transition?

ISDA has published an IBOR Fallbacks Supplement which amends the floating rate options referencing IBORs in the 2006 ISDA Definitions. The ISDA Fallbacks Supplement came into effect on 25 January 2021. The amendments set out in the ISDA Fallbacks Supplement will apply to transactions incorporating the 2006 ISDA Definitions entered into after 25 January 2021 unless the parties specifically agree to exclude them.

The amendments provide that upon the occurrence of certain trigger events (such as IBOR cessation or a declaration by the regulator of the administrator of the IBOR benchmark that it is unrepresentative of the market it is intended to measure), references to IBOR floating rate options will transition to new fallback rates calculated using risk free rates as a benchmark.

The calculation of the new floating fallback rates uses a cumulative compounded in arrears rate employing a 2 banking day look back period and observation shift. The rates will be published by Bloomberg on each date for which the relevant IBOR rate would have been published and for a tenor equivalent to the relevant IBOR tenors. (However as risk free rates are backwards looking, so too are these fallback rates. This means that the rates will be published after the original IBOR rate record date to which they refer). They apply a credit adjustment spread which uses the historical median approach and which will also be published by Bloomberg.

In addition, ISDA have published a Protocol to incorporate the amendments to the 2006 ISDA Definitions in legacy transactions entered into prior to 25 January 2021. If parties opt to enter into the Protocol then the amendments will apply to all in scope legacy LIBOR referencing derivative contracts entered into between the parties to the Protocol unless those contracts are expressly excluded.

It is important to note that there are some differences between the market conventions recommended for SONIA and SOFR referencing loan agreements and those which have been applied in calculating the fallback floating rates in the IBOR Fallbacks Supplement and Protocol. For example, the two day look back and use of an observation shift are inconsistent with the equivalent market conventions used to calculate SONIA and SOFR in the recent LMA switch clause and multicurrency exposure drafts.



14. What happens if the borrower does not agree to change to a new benchmark?

If LIBOR ceases to be published at a point when the parties have not agreed an alternative benchmark then most LMA-style loan agreements provide that interest would be charged by reference to the cost of funds of each lender. In some cases, a loan agreement may revert instead to a historic LIBOR rate.

Where a loan agreement contains no fallback at all in the event of LIBOR cessation then, if no agreement is reached as to a replacement for LIBOR, the position becomes uncertain. The EU, UK and US are all planning to legislate to try to ensure contractual continuity. The EU for example is planning to amend the Benchmarks Regulation (EU) 2016/2011 to allow the EU Commission to designate a successor to LIBOR in contracts to which EU financial institutions are party. The UK is planning to amend its transposed version of the Benchmark Regulation (EU) 2016/2011 as amended by the Benchmarks (Amendment) (EU Exit) Regulations 2018 to allow the FCA the power to change the methodology of critical benchmarks such as LIBOR.

However, the interaction between these proposed legislative solutions is unclear and could lead to unintended consequences. In addition, a legislative solution would not be tailored to suit individual transactions and would therefore be unlikely to address all of the potential contractual amendments required to ensure the operation of risk free rates as a benchmark in loan documentation.

It is therefore in the interests of both borrowers and lenders to negotiate a transition from LIBOR to risk free rates.



15. Who pays for amendments relating to LIBOR transition?

Recent documentation may already contain a specific provision allocating the cost of amendments relating to a transition to risk free rates. If not, then it will be necessary to check the amendment provisions of loan documentation to determine which party has agreed to bear the cost of any changes. Borrowers should note that cost allocation under amendment clauses sometimes depends upon who initiates the proposed change.



16. What should borrowers do now?

Borrowers should familiarise themselves with risk free rates and how they are calculated as well as the relevant terminology involved. Borrowers are likely to be contacted by their lenders about LIBOR transition and should be ready to analyse what is proposed.

Borrowers should check their financing documentation to determine which transactions reference LIBOR as a benchmark. This may not necessarily be confined to LIBOR denominated loan agreements as sometimes LIBOR is used as a benchmark in other contexts; for example as a default rate in commercial contracts.

Borrowers should identify which contracts may need to transition at the same time and on the same basis; for example hedging agreements and related loan agreements. Borrowers should consider the process for amendments; for example, whether certain consents are required and who bears the cost of amendments.

For new transactions, Borrowers should decide whether they would be ready to enter into a risk free rate referencing transaction now (or a transaction with fallback provisions to a risk free rate) and whether their financiers are able to offer this. In this way, further amendments could be avoided. Also where LIBOR is used as a benchmark in documentation which is not related to an underlying financing e.g. as a default rate in a commercial contract, borrowers should consider whether they could replace LIBOR with an alternative such as a central bank rate or fixed percentage rate

Norton Rose Fulbright is advising a wide range of institutions on IBOR transition, including corporates, globally systemically important banks, asset managers, and boutique investment firms. For more information or support, please contact us.

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