Transitioning away from LIBOR

October 2018

Introduction

"I hope it is already clear that the discontinuation of LIBOR should not be considered a remote probability 'black swan' event. Firms should treat it is as something that will happen and which they must be prepared for."
Speech by Andrew Bailey, CEO of FCA, July 2018

Interbank offered rates (IBOR) play a key role in financial markets, used widely in various credit products such as loans, in the floating leg of interest-rate derivatives and more widely in accounting, discounting, valuation and regulatory cost of capital calculations. As highlighted by a recent Risk Magazine article: ***"In just over three years' time, the rate that underpins $350 trillion of financial contracts could disappear".***

Driven by the G20 and the Financial Stability Board (FSB), major initiatives are underway to reform interest rate benchmarks, and move away from IBOR rates to overnight near risk-free rates. In particular, in pounds sterling (GBP), there is no guarantee that GBP LIBOR (London interbank offered rate) will even survive beyond 2021.

The UK Financial Policy Committee has identified the continued reliance of end-users on LIBOR as a key risk to financial stability.

Consequently, the Financial Conduct Authority (FCA) has asked major insurers to produce a Board approved assessment and mitigation plan, and identify a named Senior Manager(s) to manage the transition away from reliance on LIBOR.

Best practice

A plan for IBOR transition should address all of the following areas:

- Preparation of a comprehensive inventory of IBOR exposures;
- Analysis of Solvency II dependencies;
- Engagement with industry Working Groups and regulatory discussions;
- Specific consideration of issues for non-GBP exposures;
- Establishment of a timeline for transition of new contracts, as market liquidity permits;
- Assessment of legacy contracts and reliance on fall-back provisions;
- Review of robustness of valuation and modelling systems;
- Update of liquidity planning for impact of IBOR transition;
- Framework for monitoring market conditions, including potential for disruption.

The rest of this note sets out the background to international IBOR reform, as well as the specific state of play in the UK. We then expand on the areas above, in terms of the issues, consequences and actions that insurers will need to consider.

Background: International IBOR reform

Following the well-documented issues with manipulation of IBOR reference rates, but also the sharp post-crisis decline in the liquidity of interbank unsecured funding markets, the G20 requested the Financial Stability Board to undertake a fundamental review of major interest rate benchmarks.

In its 2014 report Reforming Major Interest Rate Benchmarks[1] the FSB recommended a twin track approach of:

1. Strengthening existing IBORs by "underpinning them to the greatest extent possible with transactions data";
2. Developing alternative near risk-free rates for use in financial markets.

REASONS MOTIVATING THE MOVE AWAY FROM IBOR TO NEAR RISK-FREE BENCHMARKS

1.	Lack of liquidity in interbank unsecured funding markets.
2.	Increasing reliance on expert judgement. LIBOR is measuring "*the rate at which banks don't lend to each other*" (as economist William Buiter said in 2008[2]).
3.	Fragility of the market, which has been subject to misconduct in the past and remains vulnerable.
4.	IBOR markets contain a bank term risk premium, whereas for many purposes, particularly in derivatives markets, a near risk-free rate would be more appropriate.

[1] http://www.fsb.org/wp-content/uploads/r_140722.pdf
[2] https://www.telegraph.co.uk/finance/economics/2795962/Former-MPC-man-calls-for-Libor-to-be-replaced.html

The FSB also recognised that different solutions might be appropriate for different markets. This has proven the case, for example with distinct approaches adopted to the continuation or otherwise of existing IBOR rates.

But, as noted in a July 2018 statement by the FSB[3], candidate near risk-free rates, based on overnight markets, have now been selected for each of the five major currencies. However, work remains to be done in each market on deriving forward-looking term reference rates for contracts that rely on them, such as corporate loans, the subject of a recent Bank of England consultation[4].

	Key existing IBOR	Preferred near risk-free rate
GBP	GBP LIBOR	SONIA
USD	USD LIBOR	SOFR
CHF	CHF LIBOR	SARON
EUR	EURIBOR	ESTER
JPY	TIBOR / JPY LIBOR	TONAR

In US Dollars (USD) and Swiss Francs (CHF) the preferred new risk-free rate is based on a secured rather than unsecured rate, whereas in the UK the decision was made, in April 2017, to go with (a reformed) SONIA (sterling overnight index average) rather than an alternative candidate based on gilt repo.[5]

In the Eurozone, EONIA, the existing equivalent of SONIA, as it stands would not meet the requirements of the EU Benchmarks Regulation and so under the rules will not be able to be used in new contracts from 1 January 2020. Work to reform EONIA has stopped[6] and it will be replaced by a new reference rate, the Euro short-term rate (ESTER), which will be produced by the European Central Bank (ECB) from October 2019.[7]

Also for EUR, work is still underway, led by the European Money Markets Institute, to attempt to reform EURIBOR to comply with the EU Benchmarks Regulation by the January 2020 deadline.

The current focus is on a hybrid methodology, using actual transactions where available, and other related market prices otherwise.[8] However, it is unclear if this work will be successful.

For markets depending on LIBOR rates – taken from the London interbank market – the FCA announced, in a speech by Andrew Bailey in July 2017[9], that it had agreed with the panel banks that LIBOR submissions would be sustained, ideally on a voluntary basis, to end 2021.

The Intercontinental Exchange, which now administers LIBOR, is continuing efforts to preserve LIBOR past this date[10], but the July 2017 speech made clear that the FCA do not believe financial markets should rely on these efforts succeeding, and that 2021 should mark an end-point for necessary transition work. The speech concluded:

"*We do not think we will complete the journey to transaction-based benchmarks if markets continue to rely on LIBOR in its current form. And while we have given our full support to encouraging panel banks to continue to contribute and maintaining LIBOR over recent years, we do not think markets can rely on LIBOR continuing to be available indefinitely.*

Work must therefore begin in earnest on planning transition to alternative reference rates that are based firmly on transactions. Panel bank support for current LIBOR until end-2021 will enable a transition that can be planned and can be executed smoothly. The planning and the transition must now begin."

Recent developments in the UK

Given that LIBOR may not be sustained past 2021, the Bank of England requires regulated entities to plan on the basis that LIBOR will be discontinued.

Following the choice in 2017 of SONIA as the preferred near risk-free rate, the Bank of England established a new Working Group on Sterling Risk-Free Reference Rates. Its mandate was "*to catalyse a broad-based transition to using SONIA by end 2021 across sterling bond, loan and derivative markets, in order to reduce the financial stability risks arising from the widespread reliance of financial markets on LIBOR*."[11]

Within this, a sub-group[12] was formed specifically focusing on how to encourage the transition to SONIA amongst pension

[3]http://www.fsb.org/wp-content/uploads/P120718.pdf
[4]https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/consultation-on-term-sonia-reference-rates.pdf
[5]https://www.bankofengland.co.uk/news/2017/april/sonia-recommended-as-the-sterling-near-risk-free-interest-rate-benchmark
[6]https://www.emmi-benchmarks.eu/assets/files/D0030D-2018-Eonia%20review%20state%20of%20play.pdf
[7]https://www.ecb.europa.eu/press/pr/date/2018/html/ecb.pr180913.en.html
[8]https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180925.en.html
[9]https://www.fca.org.uk/news/speeches/the-future-of-libor
[10]https://www.ice.com/iba/libor
[11]https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr-terms-of-reference.pdf
[12]https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr-pension-funds-and-insurance-companies-sub-group-terms-of-reference.pdf

funds and insurance companies, consisting of representatives of the main derivative dealers in the sterling markets as well as delegates from insurers, pension funds, asset managers and industry associations.

Further details of the group, such as a proposed timetable[13], scope of work, membership and minutes of meetings can be found on the Bank of England website: https://www.bankofengland.co.uk/markets/transition-to-sterling-risk-free-rates-from-libor.

Insurers who have not, to date, taken an active part in the Working Group may now like to consider doing so.

In July 2018, in his one-year on speech[14], Andrew Bailey noted the positive progress to date, but also that there was substantially more work to do for firms. In particular, he noted:

"*I hope it is already clear that the discontinuation of LIBOR should not be considered a remote probability 'black swan' event. Firms should treat it is as something that will happen and which they must be prepared for*."

And following on from that, in September 2018, the FCA issued a 'Dear CEO' Letter[15] to major insurers, with a similar letter sent to bank CEOs, which requested that by Friday 14 December 2018 firms:

1. Provide a Board approved summary of their assessment of key risks relating to LIBOR discontinuance, and their plans to mitigate these risks. This was to include "*an appropriately wide range of scenarios and impacts and include a quantification of LIBOR exposures.*"
2. Identify the Senior Manager(s) who would oversee the implementation of these plans.

For insurers who did not receive a direct email from their supervision team, while not covered by the deadline and specific request, the FCA still encouraged them to read the letter and reflect on their own preparation.

Issues for insurers with LIBOR transition

There are a significant number of areas for insurers to consider when formulating their impact assessment and transition plans. Below we highlight some key areas, although this list is not intended to be comprehensive.

1. IDENTIFYING LIBOR EXPOSURES

Insurers will need first to develop an inventory of the overall LIBOR exposures within their businesses.

Derivative hedges are one key area, both in the floating leg of interest rates but also, in some cases, the rate paid on collateral posted.

But insurers are also likely to find reference to LIBOR rates in their asset portfolios, for example in money market instruments, loans, floating rate notes and securitisations. Some assets may rely on forward looking term premiums where work is still to be done to identify suitable replacements. LIBOR might also be embedded in contractual terms, for example on late payments.

This will require careful consideration of contracts on both asset and liability sides of the balance sheet.

2. SOLVENCY II

One specific dependency for insurers, as the FCA acknowledges in its letter, relates to the choice of the basic risk-free rate under Solvency II.

Currently the Solvency II basic risk-free rate relies on IBOR swap curves in most major markets, less a credit risk adjustment intended to correct for the credit risk in the floating leg of IBOR swaps.

If and when markets based on near risk-free interest rates become sufficiently deep, liquid and transparent, the logic of Solvency II would suggest that these should instead be used as the basis of the risk-free rate, and that the credit risk adjustment would then not be necessary.

However, the drafting of the current Solvency II rules does not make this so simple. Specifically:

- Article 43 of the Delegated Acts requires that "*insurers are able to earn the rates in a risk-free manner in practice*", which would support the use of near-risk-free rates as described.

  The assessment of whether and when markets are sufficiently deep, liquid and transparent is made by the European Insurance and Occupational Pension Authority (EIOPA) but in practice delegated to national supervisory authorities, for example the Prudential Regulation Authority

[13] https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr-timeline-with-milestones.pdf
[14] https://www.fca.org.uk/news/speeches/interest-rate-benchmark-reform-transition-world-without-libor
[15] https://www.fca.org.uk/publication/correspondence/dear-ceo-letter-firms-transition-from-libor-insurers.pdf

(PRA) for GBP.

The deep, liquid and transparent requirement creates a chicken-and-egg situation, with insurers dis-incentivised to switch until the Solvency II curve changes, but market liquidity unlikely to develop at long maturities until insurers, and pension funds, switch their hedging.

- Article 44 requires that interest rate swap rates be "*adjusted to take account of credit risk*", which might seem to permit no adjustment if the underlying of the swap is near risk-free.
- But Article 45 specifies the credit risk adjustment and has been drafted assuming IBOR rates are used. The credit risk adjustment is also subject to a floor of 10 basis points (and a cap of 35 basis points).

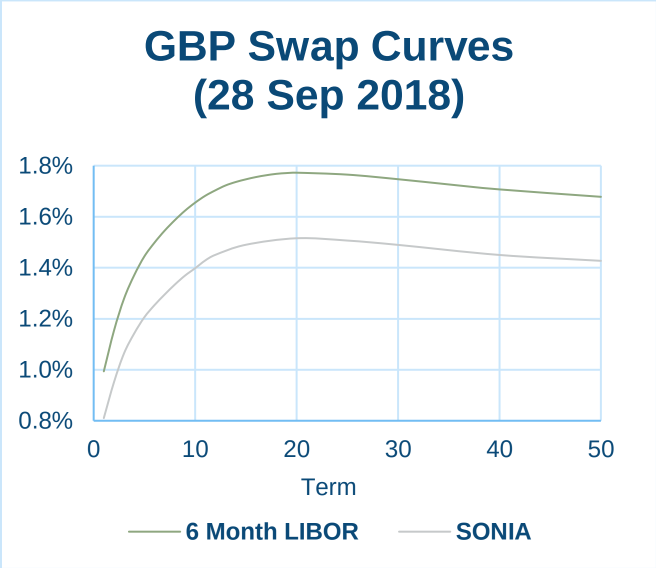
Hence, it appears that the Delegated Acts may need to be redrafted to permit the use of overnight index swap (OIS) based discounting with no credit risk adjustment, which would in turn require European Commission and Parliamentary approval.

Brexit creates an additional layer of political complexity and the Draft Statutory Instruments published in October 2018[16] allow powers to set the risk-free rate to be transferred to the PRA, following any agreed transition period post Brexit.

In current markets, a SONIA swap curve, even with no credit risk adjustment, is below the current curve of LIBOR less credit risk adjustment.

The credit risk adjustment is fixed across the curve and is based on 50% (not 100%) of a one-year moving average of short-term LIBOR-SONIA spreads. Long-dated spreads between LIBOR and SONIA curves are driven, inter alia, by market perceptions of insurers and pension funds shifting from LIBOR to SONIA hedging.

Currently the credit risk adjustment is 10 basis points (due to the floor) but the LIBOR curve is 25-30 basis points higher than SONIA.



Source: Bloomberg

Insurers will also be exposed to material basis risk during any transition period, as the discount rate used to value liabilities and the hedges held to back them may not transition at the same rate. For Internal Model firms, insurers may need to hold capital against this risk, as they do currently between assets held (for example gilts) and the risk-free rate.

Currently EIOPA has made limited progress in considering how and when to change the risk-free rates used in Solvency II as IBOR reform progresses. This in part reflecting the greater uncertainty that still prevails in the EUR market. As discussed above, the future of EURIBOR is less clear than LIBOR and while a near risk-free candidate, ESTER, has been chosen, it is not as yet used as a reference in traded derivatives.

As recorded in the August minutes[17] of the Working Group, the Insurance sub-group is in the process of reaching out to EIOPA to help progress its thinking. One key area for insurers will be to input into these discussions and consider what requests may sensibly be made of the PRA and EIOPA to ease any transition, for example:

- Early clarity on the future of risk-free rates under Solvency II;
- Allowing insurers flexibility to transition from IBOR to OIS discounting at a faster or slower pace as they transition hedges;

[16] https://www.gov.uk/government/publications/draft-solvency-ii-and-insurance-amendment-etc-eu-exit-regulations-2018/solvency-ii-and-insurance-amendments-eu-exit-regulations-2018-explanatory-information

[17] https://www.bankofengland.co.uk/-/media/boe/files/minutes/2018/rfr-august-2018.pdf

- Transitional arrangements for any day 1 capital impact;
- Interim exemption for Internal Model firms from holding capital against basis risk between SONIA and LIBOR hedges and discount rates, on the grounds that any volatility should be temporary as markets converge over time.

For insurers using the matching adjustment (MA), the choice of basic risk-free rate should be less of an issue if it transpires there is scope to at least partially offset any change by the MA. However, changes to cashflows resulting from transitioning away from LIBOR could impact close cashflow matching, for example the need to earn SONIA rather than LIBOR from assets.

Insurers using the volatility adjustment and transitional arrangements will also need to consider whether these mechanisms sufficiently offset any volatility resulting from the shift.

3. NON GBP EXPOSURES

Insurers with liabilities and assets denominated in non-GBP currencies will also need to stay abreast of the particular, and distinct, developments in those markets, and to address this in their plans. As mentioned, EUR exposures are a particularly difficult area as the market transition is less developed than in GBP, but solutions are needed by January 2020.[18]

For insurers with overseas assets backing GBP liabilities, cross-currency swaps are a specific area of concern with transitioning of derivatives, since it is likely that changes from IBOR to overnight rates will occur at different times in different markets.

4. TRANSITIONING NEW CONTRACTS

The Financial Policy Committee in June 2018 expressed concern that while SONIA derivative markets are becoming more liquid, for example SONIA futures and SONIA cleared swaps, the stock of trades referencing LIBOR, and which mature after 2021, actually continues to grow.[19]

For new contracts, policymakers would like to see insurers moving away from LIBOR as one way to smooth the transition. To gain some business benefit from the transition effort, insurers could take advantage of this opportunity to review their hedging frameworks more comprehensively.

However, insurers should carefully monitor whether and when liquidity develops sufficiently in SONIA markets to permit such a shift. They will also need to consider whether they have the necessary infrastructure to trade such instruments, and the basis risk versus liability discounting rates, as discussed above.

5. TRANSITIONING LEGACY CONTRACTS

For legacy contracts, insurers should first consider which will mature pre 2021 and so can be permitted to run-off.

For contracts maturing after that date, policymakers recognise that fall-back language is going to be an essential part of the transition process i.e. language to dictate what happens if contracts reference a IBOR rate that is no longer published.

Any fall-back does have the risk of creating material winners and losers. For derivative contracts, the International Swaps and Derivatives Association (ISDA) is currently conducting a consultation[20] on how fall-backs might be implemented. The suggested approaches replace IBOR with the internationally agreed new near risk-free rates plus a term credit premium, but there are a number of approaches as to how this premium might be set. For existing trades the fall back would also require both parties to agree to adhere to the new protocol. Insurers should closely monitor the emerging proposals and the potential impact on their own derivative hedges.

Within asset markets, similar work is being done by the Association for Financial Markets in Europe (AFME) for securitisations, the Loan Market Association (LMA) for syndicated loans, and the Working Group's Bond Market sub-group for floating rate bonds.

But, the FCA has used the analogy of a seatbelt for fall-back provisions: it is there if needed, but the wise driver avoids a crash.

Insurers may wish to seek opportunities to reduce their reliance on fall-back provisions, for example by seeking both bi-lateral opportunities to transition trades where appropriate and by taking part in multi-lateral conversion exercises.

Where contracts, for example loans, are renegotiated or rolled-over, this may create an opportunity to reduce reliance on LIBOR.

Insurers may also consider whether leaving legacy contracts fixed to LIBOR will impede the ability to adjust hedges in future, as liquidity shifts to SONIA contracts.

6. LIQUIDITY PLANNING

One concern for insurers and pension funds is that by transitioning legacy contracts, the derivatives may fall into the scope of legislation from which they are otherwise exempt, for

[18] https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180925.en.html
[19] https://www.bankofengland.co.uk/-/media/boe/files/record/2018/financial-policy-committee-meeting-june-2018.pdf
[20] https://www.isda.org/2018/07/12/interbank-offered-rate-ibor-fallbacks-for-2006-isda-definitions

example the European Market Infrastructure Regulation (EMIR) rules on central clearing and the rules on variation margin and initial margin for uncleared derivatives.

This is turn would have implications for liquidity planning, which is increasingly becoming a key focus of insurers and policymakers.

The issue was raised at the February 2018 meeting of the Working Group and it was minuted[21] that the "*FCA advised members of the Group that it did not think amending a reference rate or adding a fall-back rate would trigger application of margin requirements, and would discuss with other relevant authorities how clarification on this point could be provided*".

However, clarity is still to be provided and insurers should continue to be alert to this risk and to plan accordingly. This may also present a practical barrier to voluntary re-striking of legacy contracts outside of contractual fall-backs.

7. VALUATION AND MODEL CALIBRATION

Insurers will need to ensure they have systems in place to trade and to value contracts based on SONIA rather than LIBOR rates. Transition to SONIA discounting for valuation is well advanced at least for banks. However, when considering the determination of payments differences persist as SONIA typically compounds in arrears while LIBOR based payments are fixed in advance.

To the extent that the risk-free rate used to value liabilities shifts, model calibrations may need to be amended consistently (for example volatility parameters) to ensure that valuations remain market consistent.

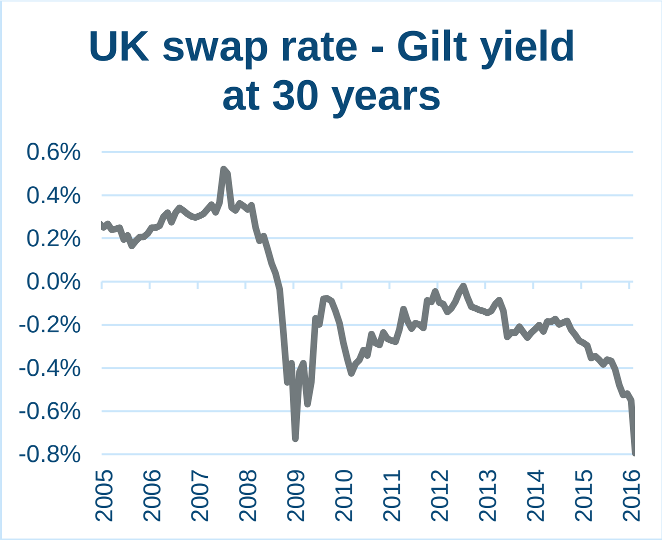
8. OTHER ISSUES

Insurers will also need to consider potential impacts on taxation and, where appropriate, hedge accounting.

9. MARKET IMPACT

Insurers should be alert to the potential for significant market volatility as markets transition from LIBOR to SONIA.

In particular, the market itself may react to the perception that insurers and pension funds will shift their hedging strategies. A case in point was the run-up to Solvency II, where a similar suggestion that insurers would move from gilt-based to swap-based hedges, due to the change in discount rate, caused significant underperformance of long-dated gilts versus swaps in the second half of 2015, down to financial crisis levels. In practice, the amount of actual switching by insurers was relatively limited, but perception was enough to materially impact markets.



Source: Bloomberg

[21]https://www.bankofengland.co.uk/-/media/boe/files/minutes/2018/rfr-february-2018.pdf

How can Milliman help?

Milliman consultants have been involved in the IBOR reform process since 2017, including working with investment banks and insurers, and inputting into the consultation processes.

We have been actively monitoring the insurance industry's usage of alternative risk-free rates in our regular Milliman Derivatives Surveys. Our monthly Milliman London Market Monitor also keeps our clients informed on the prevailing spread between LIBOR and SONIA, and between EURIBOR and EONIA swaps.

We are ideally placed to assist with:

- Preparing or reviewing the initial risk assessment and plans and the response to the FCA;
- Supporting engagement with key stakeholders, internally and externally;
- Monitoring of emerging market conditions, both spreads and liquidity;
- Practical implementation of transition plans.

If you have any questions or comments on this paper please contact any of the consultants below or your usual Milliman consultant.

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