

IBOR Transition

Preparation & Execution

Unsecured short-term interbank funding in the IBOR market (“InterBank Offered Rates”) has declined dramatically following the 2012 rate-fixing scandals and its integrity has been openly called into question. Further exacerbating a reduction in IBOR-based funding, banks’ compliance with new liquidity, capital, and leverage regulations have forced a shift to more secured short-term financing (repurchase agreements, etc.). Regulators have also hinted for years that they would prefer underlying reference rates for derivatives and loans be based on more liquid, less-easily manipulated markets.

In July 2017, the UK’s Financial Conduct Authority confirmed this trend by declaring that it would no longer persuade or compel banks to submit their interbank borrowing rates after 2021. While central bank-led working groups have been convening since 2014 to establish appropriate Alternative Reference Rates (“ARRs”) for each IBOR currency, the FCA’s triggering event has solidified the need for financial market participants to prepare for the impending cessation of IBORs.

Given outstanding uncertainties in the working groups’ determination of ARR per currency, calculating IBOR exposures and establishing a transition plan is critical in advance of 2021 while there still remains sufficient time to proactively manage the market, accounting, and legal risks. **This document describes Quaternion’s IBOR-related services that can help financial market participants prepare for 2021:**

- 1. Evaluation of existing IBOR exposures and hedge effectiveness, including stress testing*
- 2. Portfolio compression of IBORs, while maintaining the same duration-adjusted exposure*
- 3. Quantitative support during legal renegotiations of derivative and loan documentation*
- 4. Calculation of go-forward spread and tenor adjustments to equalize ARR and LIBORs*

IBOR

Products & Services

Quaternion's primary focus remains the quantitative aspects of pricing and risk management for traded products, including model development/calibration, benchmarking, and independent validation. Our expert services and software products have been deployed globally by investment banks and asset managers since 2010, with an emphasis on regulatory compliance and capital optimization for derivatives.

- 01 Evaluate existing derivative and loan exposures to IBORs
- 02 Bilateral and multilateral portfolio compression of IBORs
- 03 Quantitative support during contractual / legal renegotiations
- 04 Calculation of go-forward spread and tenor adjustments

Evaluate Existing IBOR Exposures

Market participants must first understand the magnitude of their existing IBOR exposures and identify relevant transactions expected to remain on-book after 2021. Then, they must quantify changes to hedge adjustments and/or additional hedging costs by simulating the prospective and retrospective hedge effectiveness after a switch from IBORs to ARR. This analysis should also include stress testing under various rate scenarios and investment glidepaths. Results will inform which ARRs and related developments require the most diligent tracking, and where resources should be deployed in lobbying efforts with working groups, regulators, and industry groups like ISDA, SIFMA, LSTA and LMA.

Portfolio Compression

Trade compression is a collection of methodologies used to reduce the number of outstanding contracts / gross notional exposure through novation or "tear-ups", while maintaining the same net economic risk as before. Used most frequently in OTC derivative markets as a means to optimize on regulatory constraints for capital, leverage, and margin, the methodologies used to identify overlapping/offsetting/redundant trades generally comprise various flavors of Depth-First Search (DFS), Loop Compression, and Genetic algorithms. These techniques can be applied to reduce the number of IBOR contracts between two firms (bilateral) or more (multilateral) while maintaining the same duration-adjusted exposures, limiting the number of legal contracts exposed to potential future renegotiation and/or "fallback provisions" once IBOR ends.

What's the difference between IBORs and ARRs?

1. ARRs are all overnight rates based on observable/liquid traded markets, whereas IBORs are based on market surveys and published for multiple tenors, the most common being one, three, and six months.
2. Some ARRs are secured by collateral, therefore excluding the credit spread component currently embedded in IBORs (even unsecured ARRs, being overnight, have a much smaller credit spread than IBOR term rates).

Quantitative Legal Support

Quaternion possess a significant track record of supporting clients with independent quantitative analysis during contractual renegotiations. For example, Credit Support Annexes (CSA) govern the collateral exchange for non-cleared derivatives and legacy versions often contain bespoke details such as cash collateral compounding rate floors, collateral currency choice, credit rating triggers, and one-sided posting thresholds. In an effort to increase standardization and ease future hedging requirements, counterparties may be willing to pay for the elimination of these bespoke features. Quaternion has been retained to calculate the precise value of CSAs' embedded "in-the-money" features per portfolio, giving the client stronger negotiating power.

In another potential application, Duffie (2018) proposes the use of auctions in the conversion of legacy IBOR-based contracts into ARR-based ones. In this instance, participants bid on their willingness to pay for conversion of pay-IBOR into pay-ARR, and vice versa offer a minimum compensation acceptable to convert receive-IBOR into receive-ARR (assuming that ARR is less than IBOR). Quaternion can determine the optimal bid/offer thresholds based on volume and required compensation at each maturity, as well as other unique risk tolerances best suited to a client's portfolio of IBOR exposures. The auction protocol can also be extended to include multilateral compression across maturities to further increase IBOR conversion volumes.

Calculation of Spread and Tenor Adjustments

The calculation of term and credit spread adjustments to ARRs will be critical in order to compare their properties to those exhibited by current IBORs, especially in a market where the existence of traded products referencing both is expected to significantly overlap through 2021. While traded overnight ARRs for many currencies already exist, equivalently traded term ARRs for most have yet to emerge, and until a sufficiently robust basis swap market emerges for each IBOR, an adjustment factor may be required for pricing and risk.

In an effort to determine legal fallback provisions for IBOR-referenced contracts that continue to exist after 2021, ISDA has taken the lead in crowdsourcing the most acceptable adjustment methodologies that provide equivalence between IBORs and ARRs. Although ISDA's requirements may be primarily focused on finding a solution that limits market disruption, manipulation, and other "cliff effects" at the moment that IBOR ceases to exist, the methodologies proposed by market participants suggest a reasonable path forward based on the historical differences observed between IBORs and ARRs across some overlapping period. However, a critical element not yet addressed relates to the development of historical proxy ARRs for model calibration, backtesting, and validation purposes, an area where Quaternion has been pursuing a sophisticated solution.



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