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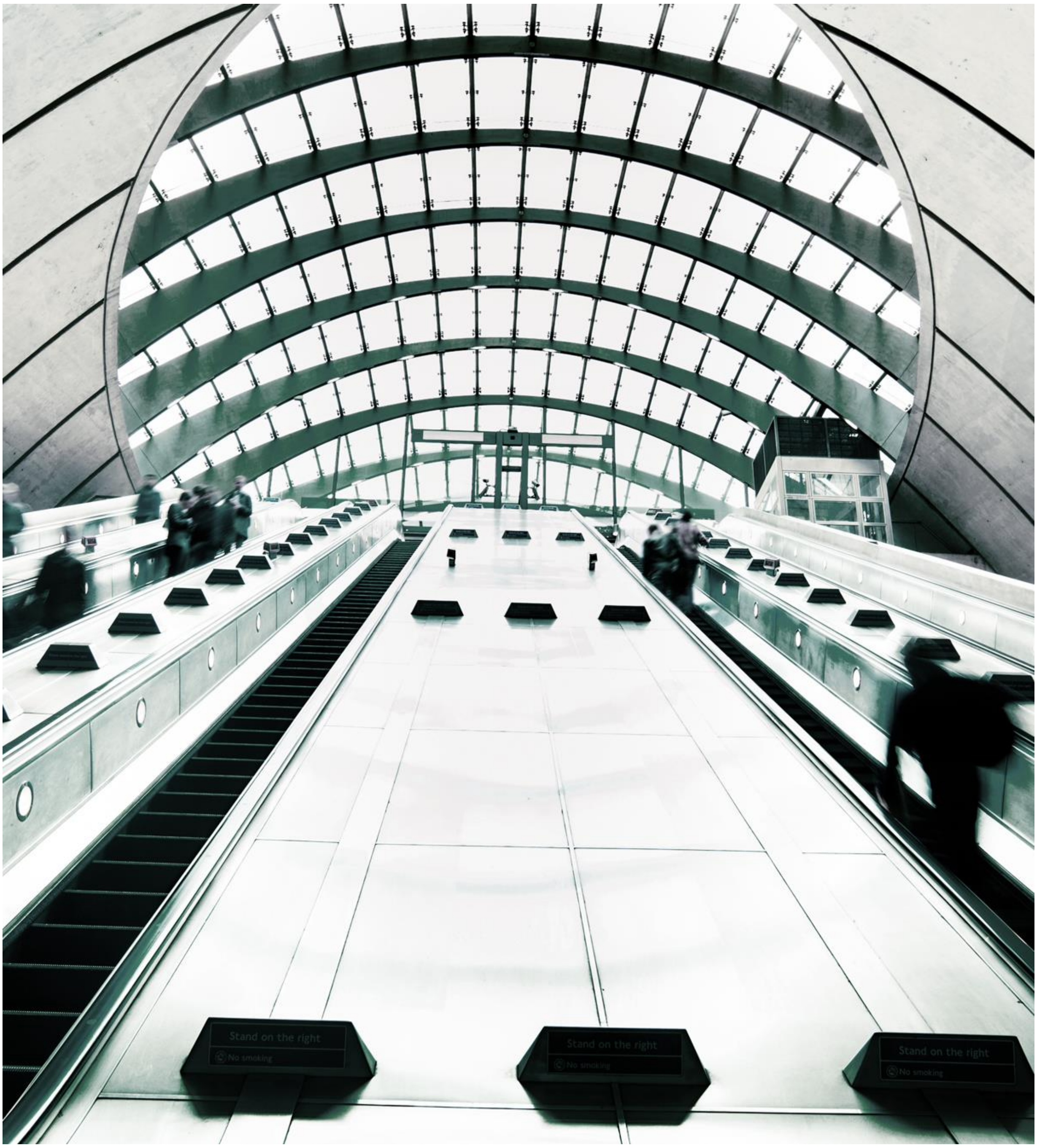
IBOR Transition

Quo Vadis, Reference Rates?



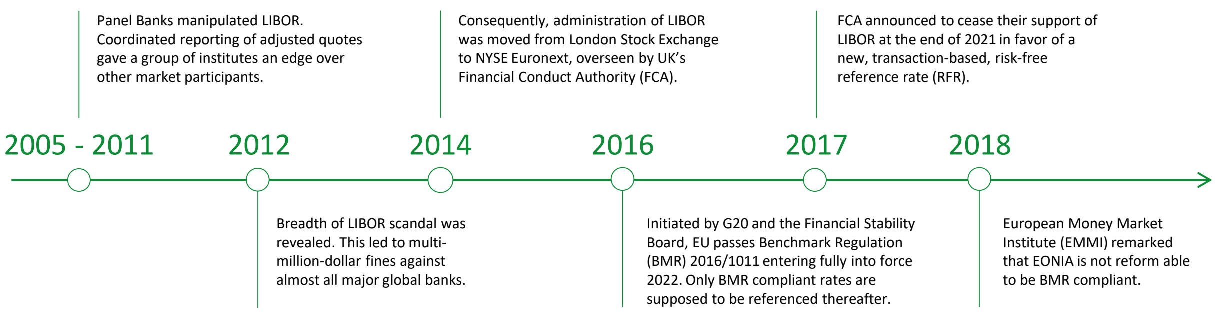
May 2019

FORRS

1 Introduction – A Story of Deteriorated Trust

Over the last decade the reputation of the LIBOR suffered from a series of fraudulent actions, resulting in fines without precedent. Changes regarding the methodology and administration followed in order to tackle deficiencies. In the shadow of these events it is often overlooked that the underlying market of unsecured interbank money market transactions was heavily shrinking.[1] This was an aftershock of the financial crisis which drastically increased perception of counterparty credit risk in the derivative markets. With liquidity diminishing, the panel banks had more leeway which rate to label as acceptable and thus to report into the aggregation process.[2] As shown in Exhibit 1 the regulating bodies are now striving for transaction-based reference rates to eliminate these free spaces. The legal basis for this reform is the EU Benchmark Regulation (BMR) which came into effect on 01.01.2018 with a transition period for existing benchmarks until 01.01.2020. Due to the organizational efforts resulting from the transition process EU bodies agreed in March 2019 to extend the grace period by postponing this date to 01.01.2022.

Exhibit 1 – Recent Reference Rate History



The EU Benchmark Regulation

Requirements formulated in the EU BMR are extensive and non-compliance is penalized with hefty fines.[3] On that condition it is essential for most market participants to understand the key regulatory changes for critical benchmarks outlined in the following section.[4] Regarding the benchmark methodology itself the requirement is to capture the "economic reality". This should be done with clear rules to clarify when discretion is used and to layer different priorities for different types of input data. The preferred mechanism to implement this is a waterfall model that prioritizes actual unsecured inter-bank deposit transactions over other unsecured deposit transactions over other secured deposit transactions. If none of these are available derived transactions over committed quotes over expert judgement may be used. For the different types of market participants, the following core changes apply[5]:

Benchmark Administrator:

- Must be approved by a local EU regulator. An independent oversight function has to be established.
- Submits an assessment of the capability of each critical benchmark provided to measure the underlying economic reality, every two years.
- Review and report by an independent external auditor on the administrator's compliance with the benchmark methodology and the EU BMR.
- Development of a code of conduct to be followed by all contributors.

[1] The fraction of US commercial bank assets funded by interbank loans dropped from 4% in 2008 to 0,3% in 2018.
[2] Original LIBOR quote definition: The rate at which an individual contributor panel bank could borrow funds, were it to do so by asking for and then accepting inter-bank offers in reasonable market size, just prior to 11.00 London time.
[3] One million EUR or up to 10% of annual income.
[4] The rules for critical benchmarks apply to all references rates used for a referenced contract volume of more than 500 bn. € which includes LIBOR, EURIBOR and EONIA.
[5] This presents only a selection of changes formulated in the EU BMR assessed by the authors of this report to be worth pointing out.

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Benchmark Contributor:

- Accepts the code of conduct including written acknowledgement of all submitters and their direct managers.
- Establishes effective procedures for control and compliance including solid record keeping for processes, employees, data, communication and sensitivities for benchmark related trading books.
- Independent external audit to check compliance with the code of conduct and the EU BMR every two years.

Benchmark User:

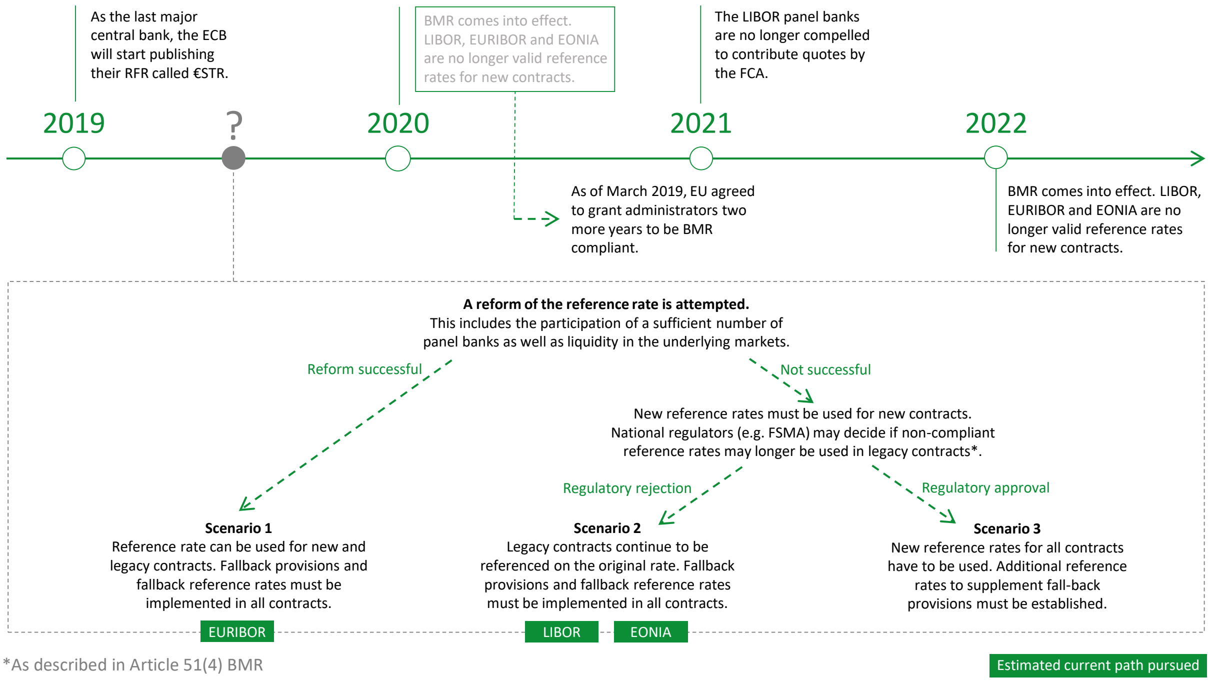
- Only offers products which reference to benchmarks listed in the ESMA Benchmark Register.
- Prepares and maintains robust written plans for the discontinuation or material change of the reference rate as well as selecting an alternative benchmark, if feasible.
- Discloses the benchmarks used in the product's prospectus.

Given the amount and complexity of these regulatory requirements it seems unlikely that panel banks will contribute to a benchmark without any form of incentive or pressure.

2 Alternative Rates – An Individual Solution per Jurisdiction

Initially most regulators preferred a private sector solution for alternative reference rates. With the end of the initial EU BMR transition period approaching this position was softened and working groups convened by regulators started to develop alternative reference rates. The pressure increased by the announcement of the European Money Market Institute (EMMI) to focus activities on reforming EURIBOR only and not to pursue compliance with the new benchmark regulation for EONIA. Nevertheless, they will continue to publish EONIA "as-is" and may adapt methodological changes to meet the requirements of Article 51(4) BMR which would permit the use of the reference rate for existing contracts. Regarding the future of LIBOR, the ICE Benchmark Administration (IBA) is currently pursuing an update of the methodology but advises all users of the rate that: "Work on the possible continued publication of certain LIBOR settings is not intended as an alternative to the transition to RFRs for new business".[6] This indicates that LIBOR could follow a similar path as EONIA. The different possible outcomes for the reference rates used in the eurozone are described in Exhibit 2.

Exhibit 2 – Milestones and Scenarios



[6] RFR refers to risk-free-rates.

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As mentioned above most international regulating bodies favor a new set of overnight rates which will be computed based on trade data reported already by trading venues, brokers or banks. Respective risk-free reference rates, which have been designed so far, are listed in Exhibit 3. The schedule to establish these rates is quite tight, especially for the ECB's aspirant called €STR. According to current planning it will go-live in October 2019 with a 3-month buffer to the initial grace period for BMR compliance. The Working Group on Euro Risk-Free Rates suggested to tackle this problem by redefining the EONIA methodology temporarily to "€STR + spread". This fixed spread will be calibrated over a 12 month look-back horizon, using a trimmed mean and is currently estimated to be 8.67 basis points.

Exhibit 3 – Alternative Risk-Free Reference Rates

	EUR	USD	GBP	JPY
Alternative Rate	€STR	SOFR	SONIA	TONAR
Governing Body	European Central Bank	Federal Reserve of New York	Bank of England	Bank of Japan
Publication	Overnight interest rate is published at 09:00 CET T+1 every Target2 trading day	Overnight interest rate is published at 08:00 ET T+1 every New York trading day	Overnight interest rate is published at 09:00 GMT T+1 every London trading day	Overnight interest rate is published at 10:00 JST T+1 every Tokyo trading day, provisional results released at 17:15 JST T+0
Data Sources and Methodology	Volume weighted trimmed mean of actual unsecured fixed rate transactions by the 52 largest EU banks	Volume weighted trimmed mean of actual secured repo transactions reported by BNYM and DTCC	Volume weighted trimmed mean of actual unsecured fixed rate transactions brokered by WMBA* members	Volume weighted mean of actual unsecured call rates brokered by information providers called Tanshi**
Current State	▪ Starts October 2019 ▪ Pre-€STR is already available ▪ No term structure planned so far ▪ Outstanding linked volume: 0 EUR	▪ Live since April 2018 ▪ Term structure planned for 2021 ▪ Outstanding linked volume: >50 bn USD[7]	▪ Live since March 1997, updated April 2018 ▪ No term structure planned so far ▪ Outstanding linked volume: >8 bn GBP[8]	▪ Live since January 2018 ▪ No term structure planned so far

* Consisting of 11 leading fixed income brokers/exchanges/platforms.
** Tanshi refers to a type of brokerage firm in Japan that deals primarily or exclusively in short term, money market instruments. The three current information providers for call rates are Ueda Yagi Tanshi, Central Tanshi and The Tokyo Tanshi.[9]

For EUR Libor and EURIBOR, the new RFRs as defined today will not be economically and technically comparable to the historic reference rates. The economic reality measured shifts from interbank lending transactions to wholesale borrowing costs.[10] Further, the "risk free nature" eliminates credit spread currently embedded in LIBOR and EURIBOR term rates. Therefore, computed forward-looking RFRs are expected to be lower than the historical tenor IBOR rates.[11] The resulting basis risk will be a challenge for hedging operations and asset-liability managers. This also raises the question if a reformed EURIBOR is in the interest of a standardized, comparable global reference rate landscape. A major technical difference is the release time of the RFRs which will shift to the morning of the next trading day. This could cause significant adjustment efforts in systems and processes.

[7] See www.risk.net.
[8] See www.fca.org.uk.
[9] See www.boj.or.jp.
[10] In Case of the €STR. While SONIA and TONAR are also based on unsecured transactions the SOFR methodology is based on secured repo transactions.
[11] Given a non-inverted interest rate curve.

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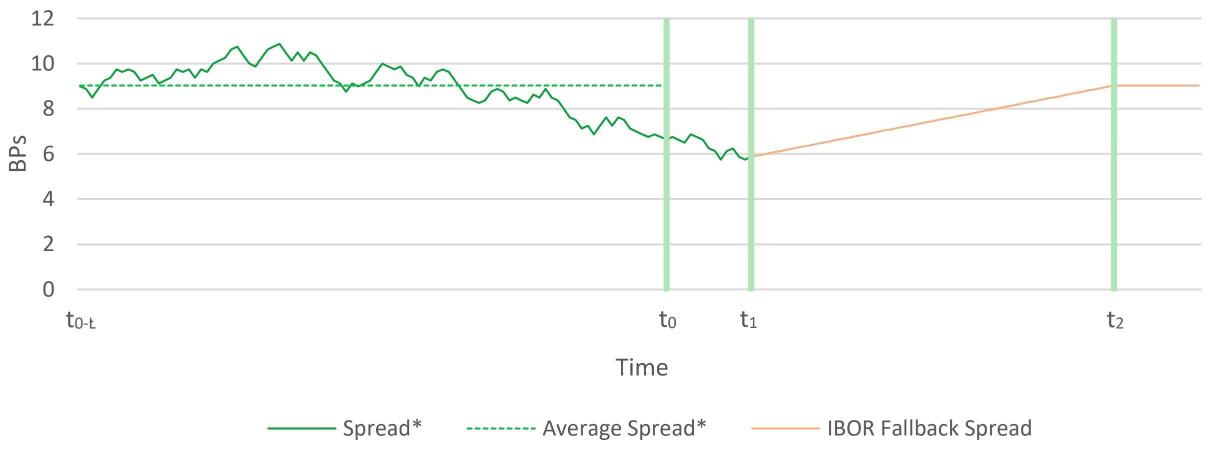
3 Legacy Contracts – Exploring the Iceberg

This report places special emphasis on the changes and risks associated with existing financial instruments which mature after 2021. These contracts do not always have individual fallback provisions and if there are any, they only cover the temporary unavailability of the reference rate. Nevertheless, the volume of those contracts amounts to many hundreds of billions of dollars.

The most common fallback provisions cover an individual collection of quotes from other banks, fixing the last available rate published or an historic mean or using another available reference rate[12] adjusted by some basis points value. Sometimes even a waterfall model including all three variants is implemented. Anyhow, each of these solutions has significant drawbacks by drastically increasing workload or changing the economic nature of the instrument.

To make the transition less dependent on these provisions the International Swaps and Derivatives Association (ISDA) started a process to establish a proposal for derivatives covered by their master service agreement.[13] Each entity is free to accept the fallback changes described by the protocol. But if they do agree all their derivatives fall under the new rules, given the respective counterparties also subscribed to the protocol. The feedback for the consultation paper favors the so called "Historic Mean/Median approach" described in Exhibit 4. It pictures an artificial "adjusted RFR" which incorporates bank credit risk and is comparable to the current IBOR term rate. The spread between the IBOR and the adjusted RFR will be tracked over a lookback period of 5-10 years prior to the triggering of the fallback provision. After this trigger the reference rate will continue to be calculated until it eventually ends. From this date onwards the fallback rate is calculated by adding a spread, calculated by using linear interpolation between the last published rate to the mean/median of the lookback period, to the RFR. While this solution is easy to comprehend and captures the tendency of interest rates to fluctuate around a long-term mean it requires a long history of IBOR and adjusted RFR fixings. Given the possible termination of LIBOR at the end of 2021, a sufficient timeseries cannot be taken for granted.

Exhibit 4 – Historic Mean/Median Approach as Described in the ISDA Fallback Consultation[14]



*Referring to the spread of LIBOR – Adjusted RFR

[12] E.g. Federal Funds Rate, "On-The-Run" Treasury Yield.
[13] EUR reference rates are currently not in the scope of the proposal.
[14] So far only non-EUR LIBOR and TIBOR are covered by the consultation.

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4 The Action Plan – Managing Successful Transition

Slowly but steady the path of transition becomes visible. Nevertheless, a sudden and drastic end of the IBOR reference rate's availability is still possible (e.g. Scenario 3). To ensure a successful transition by minimizing the risks the following continuous core tasks should be carried out[15]:

- Raise awareness and prepare the organizational setup

  Assign a lead who monitors and keeps record of all involved stakeholders. Establish an internal working group to discuss topics in detail and set up reporting lines to all involved departments.

- Identify all exposed products, processes and systems

  As pointed out in Chapter 3 it is crucial to assess all contracts which refer to historic reference rates. After this task is carried out the processes and systems need to be readjusted to account for legacy treatments and individual fallback provisions.

- Qualify and quantify all risks

  A scenario analysis may help to evaluate which risks will materialize if certain events occur. Based on these considerations a contingency plan can be developed and should be integrated into the overall risk strategy of the company. Even in a market friendly scenario the EU BMR requires all users of reference rates to establish "robust, written plans" for the discontinuation or material change of a reference rate.[16]

In more detail the following to-do list need to be processed by the respective departments or overarching functions:

- Stay in close contact to working groups and industry initiatives (e.g. ISDA)
- Identify early mover advantages
- Survey client requirements and constraints
- Stocktaking the exposure against every individual reference rate
- Develop an interest rate risk strategy for worst case scenarios
- Implement BMR compliant contracts and fallback provisions
- Set up new interest rate curves (for new contracts and legacy settings)
- Recalibrate models

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FORRS consultants have the relevant industry experience to support you in managing the complex consequences of the benchmark regulation in an efficient and practically oriented way, for the benefit of your results.

[15] This description is focused on the capital market aspects of the transition, the retail business may be exposed to other risks and challenges.
[16] See EU BMR Article 28 (2).

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