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On July the 27th of 2012, the Financial Times published an interview of a former Morgan Stanley rate trader who was anonymously reporting how, since 1991, banks were misreporting LIBOR. With this article, the scandal of LIBOR rates also known as the LiborGate began. Banks were on one hand increasing their profitability and on the other trying to hide liquidity problems, especially during the 2008 crisis. Given that hundreds of trillions of derivatives and loans are printed using LIBOR, a mismatch of 1 basis point could have important repercussions for the entire market. To answer this scandal legislatively, the ECB published the BMR (“BenchMark Regulation”) in 2016. The BMR set about to answer three different problems:

1. Limitation of any conflict of interest and potential manipulation
2. Increase of transparency regarding data and methodologies used to build reference rates
3. Protection of all consumers potentially impacted by rates manipulations.

WHAT’S NEW WITH THE BMR

With the BMR, the ECB redefined the concept of Benchmark Rate. To understand it, **BMR is defining a benchmark** as a rate use for one of the uses defined below:

- **compute an interest flow**
- **value a fund**
- **allocate a portfolio.**

With the BMR, indexes will no longer be computed on a declarative basis but will have to be **observable**.

Benchmark will be classified in three categories depending on their **criticality** (critical, significant and non-significant) and defines precisely the role of all actors working around these indexes:

- **Administrators:** control the release of indexes, ensuring a perfect execution of all computation processes
- **Contributors:** produce data not easily monitorable and needed to compute indexes
- **Users:** use indexing under the BMR.

Contributors are now requested to compute and publish rates following different approaches (depending on the volume, the maturity, past contributions, etc). **Contributions are classified from levels 1 to 3.**

Administrators will be the most impacted by the BMR. To continue publishing their own indexes used to monitor their funds, they will need to be granted authorisation by the regulator. They will have to prove that their indexes answer transparency efficiency, a clear governance process, prevention of conflict of interest, etc.

As of 2014, working groups have been setup to start thinking about new indexes and their computation processes:

Current Index	New Index	Underlying type	Working Group
EOZIA	ESTER	Unsecured	ECB
EURIBOR	EURIBOR Hybride	Unsecured	European Money Market Institute (EMMI)
USD LIBOR	SOFR	Secured	Alternative Reference rates Committee (ARRC)
GBP LIBOR	SONIA	Unsecured	Working Group on Sterling Risk-Free Reference Rates (RFRWG)
CHF LIBOR	SARON	Secured	National Working Group on Swiss Franc Reference Rates
TIBO	TONAR	Unsecured	Japanese Study Group on Risk Free Reference Rates

All working groups did not reach the same conclusions. The ARRC focusses only on secured transaction (Repo) to compute the SOFR while the ECB considers all interbank loans to compute the ESTER. Then, institutional differences across these working groups could lead to potentials divergences regarding methodologies applied and a higher level of bases across currencies.

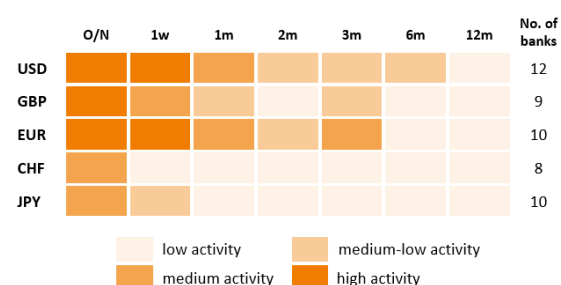
Focus on ESTER and SOFR methodologies: the ECB computes the ESTER daily using all unsecured interbank loans on a panel of 52 Euro financial institutions. Only transactions above 1 million Euro are considered and those with rates above the 25% volume-weighted percentile rate excluded. Exceptions could be raised in case of low diversification of the panel or a high concentration of the remaining transactions. Like the ESTER, SOFR is computed excluding the highly rate transactions but, on the contrary, using overnight interbank loans collateralised by US Treasury securities in the repurchase agreement (repo) market.

EMMI, as published on the 12th of February 2019, the final blueprint defining the methodology targeted to compute these rates [1].

IBORs IN PRACTICE

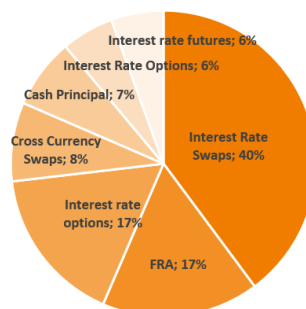
Created in 1986, when the British Banker Association took control of rates computation, IBORs (InterBank Offered Rates) are built daily as the average interbank borrowing rate for a given maturity. In 2018, IBORs control is split between the FCA (Financial Conduct Authority) and the IBA (Inter-Continental Exchange Benchmark Authority) and covers a panel of five currencies for 7 tenors.

Exhibit 1: Unsecured Deposit Transactions by LIBOR Contributing Banks



Source: Wheatley Review calculations [2]

Exhibit 2: Outstanding Exposures for USD LIBOR in Various Asset Classes as of March 2016



Source: NYFRB, Second Report of the Alternative Reference Rate Committee, March 2016 [3]

Every day at 11am, the BBA (“British Banking Association”) computes and publishes IBORs using contributions from a given panel of banks. IBORs are currently used as official benchmarks in most derivatives and loans to compute interest flows or monitor performance.

Moving from IBORs to new indexes raises **new challenges** in term of methodology, especially in producing indexes for a given maturity when market liquidity remains low (below official triggers).

TRANSITION PLAN

By the 1st of January 2020, all EU firms are requested to only use registered or authorised benchmarks that comply with the BMR. With his 2017 speech, FCA Chief Executive Andrew Bailey has made clear that the **publication of LIBOR is not guaranteed beyond 2021.** All working groups have already started to define new target methodologies in line with BMR requirements. These new methodologies must be accepted by local regulator before being implemented on the market.

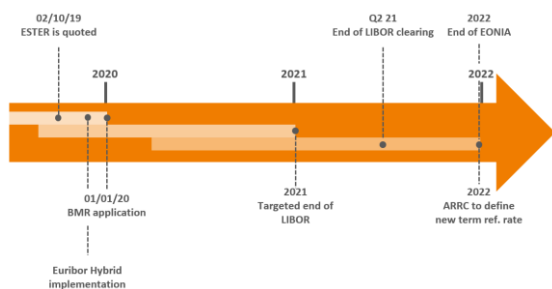
SOFR methodology has already been validated and new index is quoted daily on the market. Before Q2 2021, market participants will have to choose between clearing or modifying current swap contract referring to LIBOR rate. Following this, **CCPs will no longer accept to clear new contract not refereeing to SOFR.** By the end of 2021, when liquidity will be higher and SOFR transition almost completed, the ARRC will start working on defining new

term reference rates based on SOFR derivatives market.

On the 31st of May 2019, the ECB has computed and published a spread (8.5 basis points) to apply to move from EONIA to ESTER. This spread has been computed based on one-year historical data (EONIA vs pre-ESTER) and may be used to assess the suitability of the new rate. **On October the 2nd 2019, ESTER will be officially quoted** for the first time using the defined methodology. Following this day, the current panel of banks used to compute EONIA index will be dissolved and **EMMI will continue to provide EONIA rate until the 3rd of January 2022** (under the recalibrated methodology).

On the 3rd of July 2019, EMMI has been granted an authorisation by FSMA regarding EURIBOR new hybrid methodology. Jean-Louis Schirmann, EMMI'S Secretary General said that *"This confirms that the hybrid methodology is robust, resilient and transparent, and will meet stakeholder expectations in a timely manner"*. According to him, **EURIBOR new methodology should be fully implemented by the end of 2019** with limited impacts regarding functional transition.

Exhibit 3: IBORs transition plan schedule



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The operational transition is the main challenge of BMR application. Its application will impact legal, risk and compliance departments.

Legal:

Most contracts have been signed under a specific documentation where IBORs rates were specified as official benchmark rates.

Moving to new rates implies updating and confirming all existing contracts with all counterparties. To make this legal transition easier, ISDA has published the ISDA Benchmarks Supplements which gives firms the ability to improve the contractual robustness of derivatives that refer to existing benchmarks [4]. In the meantime, the ARRC has released its final recommended contractual fall-back language for FRNs and syndicated loans [5]. This contract update may form part of an anticipated procedure to ensure the perfect coordination of all teams involved and match regulators' expectations.

Risk management:

BMR application will have significant impacts on trading positions and risk management. Banks are hedged against existing IBORs and will need to update hedges to refer to new rates. It will raise problems for risk managers in redefining new standards of risk measurement and policies. They will have to find operational solutions to convert a global hedged position based on existing IBORs to a new position with different characteristics. Moreover, a brutal withdrawal of IBORs rate might have significant economic impact and could impair the normal functioning of a variety of markets, including business and consumer lending. How do I consider my trading position under the new BMR environment?

Compliance:

Operational challenges linked to BMR application are not limited to legal, execution or risk management topics. By redefining standards of computation and control for benchmark rates, the ECB is asking financial institutions to identify indexes falling within the scope of BMR. To perform this eligibility test, administrators might answer several questions to determine if the index is used to value a fund or a product, allocate a portfolio, compute interest flow, etc.

Anticipating this transition will be the key to success in managing BMR application and ensuring a fair solution that is implemented across all market participants.

AN IT PROBLEM WITH STRUCTURING IMPACTS

Adopting new benchmark indexes implies to identify perfectly where and how current rates are used and located in existing system applications. Most of the software used by banks (market or in-house-developed tools) have not been designed to support two different benchmark indexes. With this in mind, banks need to find tactical solutions to perform the transition from one index to a new one.

The period of transition will have to define the scope of application and its duration. It might not be the same depending on the index (USD LIBOR vs EURIBOR for instance).

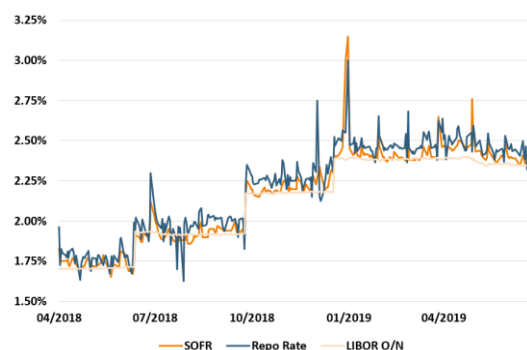
In the meantime, banks will have to define a new target application architecture, taking into account all BMR requirements – especially regarding eligibility tests and computation and classification processes. This new setup must not only consider execution and booking application but should also **cover all downstream systems (accounting, valuation, collateral, risk analysis, etc)**.

The implementation phase of this new setup should on one hand follow a predefine calendar given by official authorities, on the other be coordinated with clients to avoid any reporting or valuation mismatch.

LIMITED FEEDBACK FROM THE MARKET

According to ARRC, who published its last report on April 2019, SOFR is enjoying an interesting degree of market penetration with daily volume close to 1.25T. More than 130 participants (administrators, contributors and users) are working with SOFR and CME and ICE futures contracts have continued to increase. An expanding volume of debt transaction is printed with SOFR and banks have started to quote and structure derivatives products using SOFR (Swap Rate, Basis Swap, Swaption, etc)

Exhibit 4: SOFR vs O/N US Repo Rate vs O/N USD LIBOR



Source: NYFRB, Bloomberg

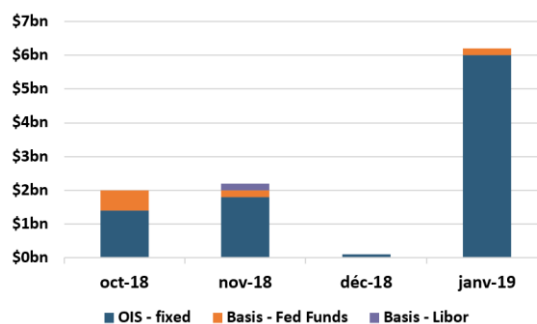
Exhibit 5: SOFR volume since 2018



Source: NYFRB

Despite promising beginnings, the SOFR ecosystem remains low and liquidity of derivatives insufficient to operate operational transition of existing bank position. Three different version of swap have started to be traded on the market (OIS – fixed, Basis – Fed Funds, Basis – Libor) for different volumes:

Exhibit 6: SOFR swap volume between October 2018 and January 2019



Source: risk.net

This lack of liquidity for SOFR swap is clearly a drag on processing the operational transition. Between October 2018 and January 2019, only

one basis swap vs LIBOR has been executed. It highlights all the difficulties that the banks are facing to convert their trading position to new indexes.

EMMI will have to find new solutions to problems encountered regarding index structure and the liquidity issue: **how to define a possible compensation mechanism to smooth out the effects of the transition from EONIA to ESTER?**

A FINANCIAL IMPACT TO ANTICIPATE FOR END CUSTOMERS

All challenges raised by the BMR (legal, operational and IT) will generate **additional costs** that will be translated to end customers, among them corporates.

Like financial institutions, corporates will have to perform an **operational and IT transition**. Most TMS (Treasury Management Software) is not designed to support different benchmarks for the same contract. Treasurers might liaise with editors to anticipate the transformation and find adequate solutions which could require software upgrades led by a dedicated project team.

Most of the time, corporates stand as an internal bank for their subsidiaries, providing them with hedging and financing services. This gives a large number of contracts and confirmations will need a legal review and potentially the calculation of transition spreads. To be able to perform such work, Front Office treasurers must **anticipate it by defining new pricing methodologies and monitor market liquidity** to ensure smooth execution processes.

As mentioned before, operational transition will be performed by renegotiating all existing contracts and computing a financial adjustment (spread) to apply to move to new indexes.

Let us take the example of an Interest Rate Swap where the client is paying the fix rate and

receiving the floating rate based on the USD LIBOR 3M. After the transition he will continue to pay the same fix rate but will receive a floating rate based on the SOFR plus a spread. The spread apply could be split as:

- **Basis spread** between LIBOR 3M and SOFR reflecting structural differences between the two rates
- **Market spread** reflecting the lack of liquidity, the absence of adequate derivatives, etc
- **Mark-up spread** reflecting the pure margin taken by the bank to cover transition costs (legal, operational, IT, etc) and remunerate itself.

Corporates should make sure they are fully involved in the negotiation process and work with banks as partners so that the costs structure and additional margin are transparent. **This might be helped by existing regulations on costs transparency and investor protection (PRIIPS, MIFID2)** which give corporates the right to request costs structure explication, hence an easier control and dialogue on the cost applied by banks.

IN CONCLUSION

By defining new standards for benchmark computation and utilisation, ECB is raising new challenges for financial institutions. Limiting conflicts of interest by increasing transparency and investor protection will be done after a period of transition potentially complicated. Many issues remain unsolved and concerned working-groups are still in discussion to find appropriated solutions. Adopting this new regulation will redefine the entire market structure and will deeply impact existing position. Transition will have a price and clients must remain vigilant to avoid supporting unjustified costs.

SOURCES

- [1] EMMI, Second Public Consultation on Hybrid Methodology for Euribor, available at <https://www.emmi-benchmarks.eu/euribor-org/second-public-consultation-on-hybrid-methodology-for-euribor.html>
- [2] The Wheatley Review of LIBOR: Final Report, (September 2012), available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191762/wheatley_review_libor_finalreport_280912.pdf
- [3] ARRC, Alternative Reference Rates Committee, Second Report (March 2018), available at <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2018/ARRCSecond-report>
- [4] ISDA Publishes Benchmark Supplement, available at <https://www.isda.org/2018/09/19/isda-publishes-benchmarks-supplement/>
- [5] ARRC Releases Recommended Fallback Language for Floating Rate Notes and Syndicated Loans, available at <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/ARRC-Apr-25-2019-announcement.pdf>

