

# Post-Implementation Impact Analysis

STIBOR Calculation Methodology Market Adjustment Factor (MAF) data source change

## Contents

Summary .....	3
MAF Change Impact Analysis STIBOR 3M and STIBOR 6M .....	4
Comparative analysis of different data sources during the period .....	6

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## Summary

A change of data source used for the STIBOR Calculation Methodology Market Adjustment Factor (“MAF”) was implemented on September 20th, 2022. The previously used data source ICE 3 months SOFR and SONIA index futures (“legacy data source”), was replaced by the ICE Term Reference Rates (TRRs) for SOFR and SONIA (“new data source”).

A post-implementation STIBOR impact analysis of the MAF was conducted during the period of September 20 – October 20, 2022, as a follow up to the internal analysis performed by the Administrator, endorsed by the Panel Banks and the Oversight Committee, where the results supported a change and implementation of the new data source.

The conducted internal pre-analysis and the public post-implementation analysis presented in this report shows that the change from the legacy data source to the new data source are beneficial and provides a more dynamic measure for adjusting historical transactions with the application of the MAF.

A MAF is added to the original historical transaction trade rate to capture possible moves in interest rates, as described in the STIBOR calculation methodology for Level 2.3.

Level 2.3 applies to the 1 month, 2 months, 3 months and 6 months STIBOR tenors and is applied in cases where a contribution could not be derived from any of the previous methodological levels in the designated STIBOR calculation methodology hierarchy. Level 2.3 applies solely to transactions in any of the eligible foreign currencies’, euro (EUR), British pound (GBP) and United States dollar (USD), that have previously been used in the calculation of Level 1 contributions with a maximum historical look-back period of five (5) business days (T-5).

The decision to change the data source was made based on the ongoing review of the STIBOR calculation methodology that indicated that the mirroring of movements on the underlying market could be improved by replacing the legacy data source with the forward looking new data source for USD and GBP transactions in the calculation of Level 2.3 contributions. The ICE TRRs, have rapidly gained market recognition since their introduction earlier this year. Our pre-analysis as well as the post-analysis show that replacing ICE 3 months SOFR and SONIA index futures contracts with ICE TRRs for SOFR and SONIA, results in a more dynamic measure for adjusting historical transactions.

## MAF Change Impact Analysis STIBOR 3M and STIBOR 6M

A post-implementation STIBOR impact analysis of the MAF (Market Adjustment Factor) was conducted during the period of September 20 – October 20, 2022. What follows is an analysis and comparison between legacy data source and new data source in the STIBOR Calculation Methodology for Level 2.3 and the MAF calculation for the 3 months and 6 months tenors.

Table 1 provides data on the calculated STIBOR 3 months and 6 months tenors using both the legacy data source and the new data source. The comparison provides and shows the differences between the legacy data source and the new data source in the STIBOR Calculation Methodology MAF calculation for Level 2.3 contributions.

The comparative analysis shows that 10 out of 23 days resulted in a difference between the legacy and new MAF calculation within a range of 0,1 bps to 3,41 bps in the 3M tenor. Corresponding numbers for 6M are 14 out of 23 days and within a range of 0,2 bps to 3.2 bps. In all difference cases the STIBOR rate was higher using the new MAF calculation compared with the legacy calculation and use of futures contracts, in line with the underlying markets.

	STIBOR 3M (TERM RATES MAF)	STIBOR 3M (FUTURES MAF)	STIBOR 3M (DIFFERENCE)	STIBOR 6M (TERM RATES MAF)	STIBOR 6M (FUTURES MAF)	STIBOR 6M (DIFFERENCE)
2022-09-20	1,8	1,766	0,034	2,289	2,263	0,026
2022-09-21	1,88	1,859	0,021	2,349	2,349	0
2022-09-22	1,905	1,905	0	2,325	2,325	0
2022-09-23	1,906	1,906	0	2,385	2,385	0
2022-09-26	1,93	1,929	0,001	2,365	2,365	0
2022-09-27	1,919	1,917	0,002	2,361	2,358	0,003
2022-09-28	1,913	1,913	0	2,373	2,373	0
2022-09-29	1,887	1,88	0,007	2,287	2,283	0,004
2022-09-30	1,725	1,71	0,015	2,333	2,301	0,032
2022-10-03	1,657	1,657	0	2,365	2,365	0
2022-10-04	1,659	1,658	0,001	2,364	2,361	0,003
2022-10-05	1,671	1,671	0	2,365	2,362	0,003
2022-10-06	1,718	1,701	0,017	2,33	2,325	0,005
2022-10-07	1,725	1,725	0	2,348	2,336	0,012
2022-10-10	1,726	1,711	0,015	2,38	2,355	0,025
2022-10-11	1,741	1,733	0,008	2,412	2,408	0,004
2022-10-12	1,748	1,748	0	2,405	2,405	0
2022-10-13	1,763	1,763	0	2,399	2,387	0,012
2022-10-14	1,77	1,77	0	2,439	2,439	0
2022-10-17	1,754	1,754	0	2,449	2,447	0,002
2022-10-18	1,757	1,757	0	2,428	2,428	0
2022-10-19	1,762	1,762	0	2,451	2,448	0,003
2022-10-20	1,832	1,832	0	2,5	2,495	0,005

Table 1

During this impact analysis period, Level 2.3 contributions has been used for the 3 months tenor in 20% of all level contributions and for one or multiple panel banks on 70% of the days within the period. Corresponding numbers for the 6 months tenor is 18% and 74%.

Explained in detail it reads as follow.

- Number of fixing days during the analysis period: 23 days.
- Number of level contributions during the analysis period for respective tenor: 23 days x 7 panel banks = 161 level contributions.
- Number of Level 2.3 contributions in 3M during analysis period: 32 / 161 total number of contributions = 20% of 3M contributions.
- Number of fixing days where Level 2.3 was used in 3M during the analysis period: 16 / 23 days: 70% of the days.
- Number of Level 2.3 contributions in 6M during analysis period: 29 / 161 total number of contributions = 18% of 6M contributions.
- Number of fixing days where Level 2.3 was used in 6M during the analysis period: 17 / 23 days: 74% of the days.

Note, the above does not take into account panel banks' Level 2.3 contribution if trimmed in fixing calculation.

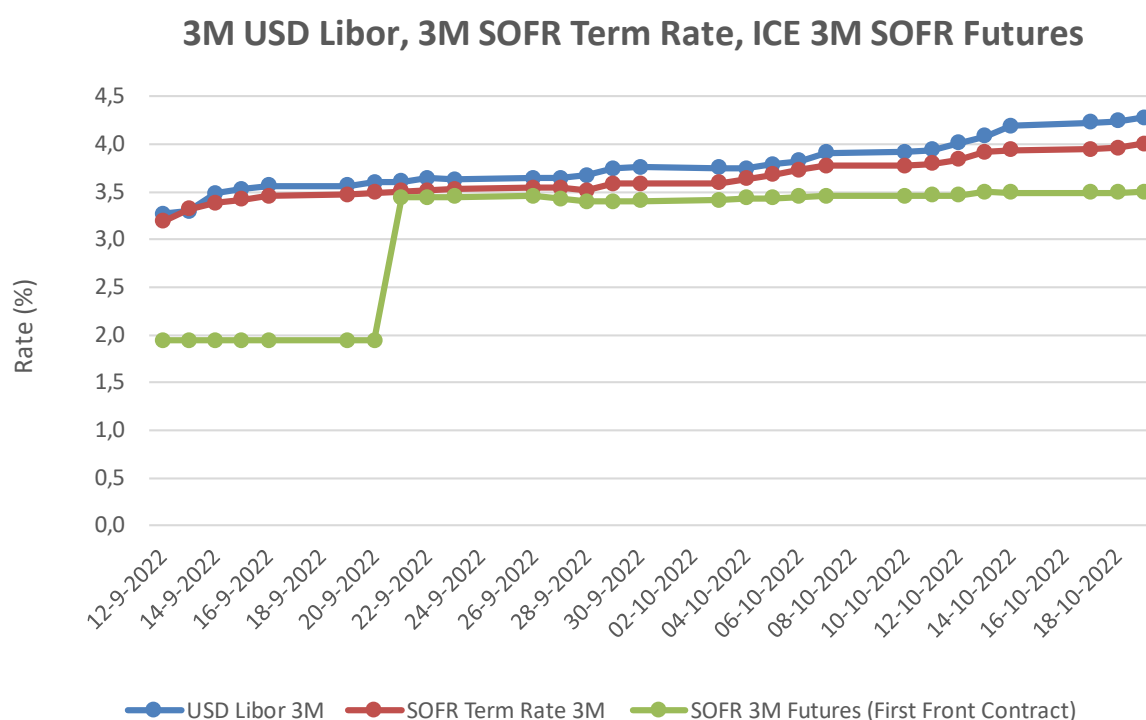
## Comparative analysis of different data sources during the period

ICE SOFR and SONIA index futures are daily compounded averages of the backwards looking O/N SOFR and O/N SONIA over respective periods. As a futures contract progresses through its life cycle, more of its 'components' are known, and it reacts less and less on the movement in the cash market. E.g., if there is a significant change in the market 1 week prior to the expiry of the contract, the change will only be reflected in 7/90 of the contract term – so almost not at all. This is shown in graphs 3 and 4 over contract life cycle.

The graphs show that the new data source, SOFR TRR, have a better correlation to USD Libor compared with the legacy data source, ICE SOFR index futures, which demonstrate an improvement using TRRs as basis for the MAF.

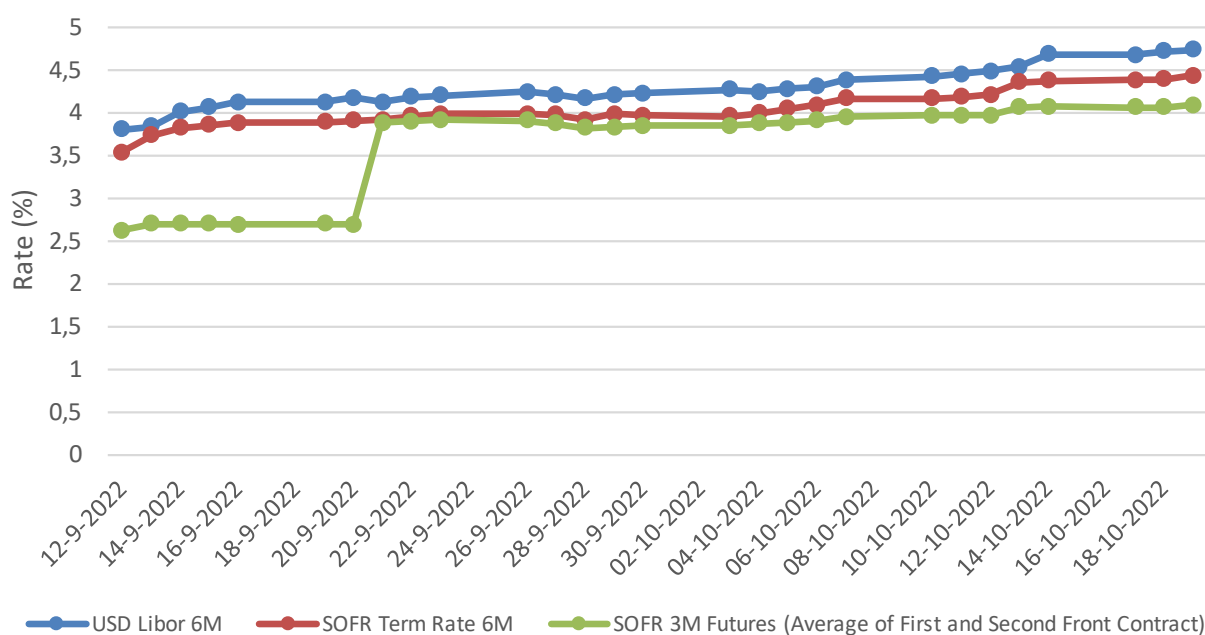
Graphs 1 (3M) and 2 (6M) outlines the daily development over the MAF post-implementation analysis period and graphs 3 (3M) and 4 (6M) a longer period as contract life cycle, graphs of the instruments 3- and 6-months rates for USD Libor, ICE SOFR TRR and ICE SOFR Future. Except for the 6 months ICE index future as average between the c1 (first front contract), and c2 (second front contract).

On June 15 and September 21, 2022, the ICE 3M SOFR index futures rolled, which is shown in the graphs.



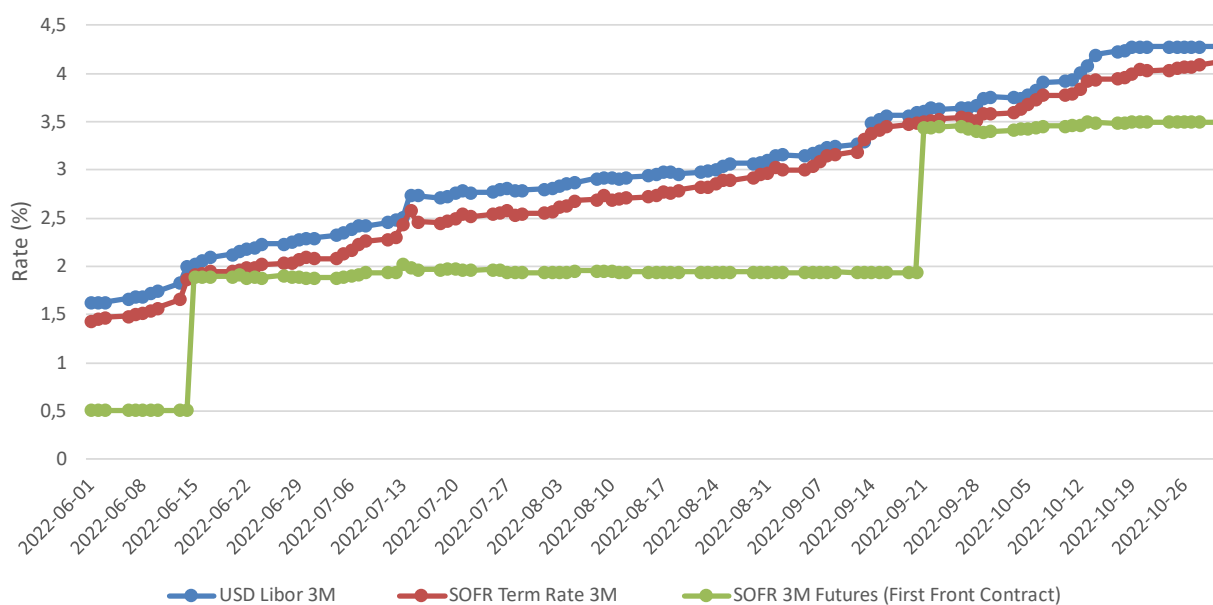
*Graph 1 - Comparison of instruments 3M*

## 6M USD Libor, 6M Term Rate, ICE 3M SOFR Futures



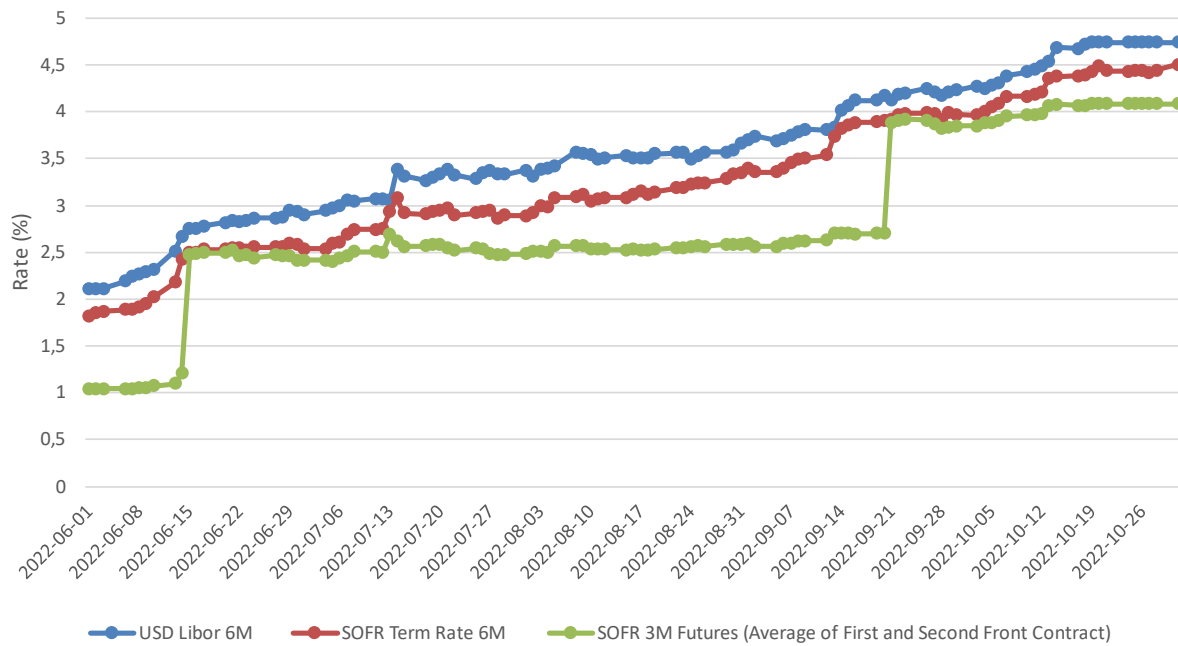
Graph 2- Comparison of instruments 6M

## 3M USD Libor, 3M SOFR Term Rate, ICE 3M SOFR Futures



Graph 3- Comparison of instruments 3M longer period

## 6M USD Libor, 6M Term Rate, ICE 3M SOFR Futures



Graph 4- Comparison of instruments 6M longer period



## Notes

**STIBOR is determined with the Input Data contributed**, in an automated and controlled manner, by Panel Banks representative of the Swedish financial market. A Panel Bank's contribution toward STIBOR is **based on executed transactions**, when available, and on a combination of market pricing and mathematical techniques when transactional evidence is insufficient. The minimum notional volume for an eligible transaction is equal to or above 100 mSEK.

For further in-depth details on the STIBOR calculation methodology, and the alignment with BMR requirements, documentation is publicly available on [www.swfbf.se](http://www.swfbf.se) to ensure transparency.

STIBOR was designated a critical benchmark on 17 October 2018 in accordance with EU Commission Implementing Regulation (EU) 2018/1557. The Swedish Financial Benchmark Facility AB (SFBF) assumed the administration responsibility for STIBOR in April 2020.

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