SIBOR REFORM AND THE FUTURE LANDSCAPE FOR SGD INTEREST RATE BENCHMARKS

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Association of Banks in Singapore

Singapore Foreign Exchange Market Committee

Steering Committee for SOR Transition to SORA

PREFACE AND DISCLAIMER

This report reviews the results of the transitional testing of a new waterfall methodology for the SGD Singapore Interbank Offered Rates (**"SIBOR"**), and examines the options for the future landscape for SGD interest rate benchmarks. The report identifies the Singapore Overnight Rate Average (**"SORA"**) – particularly Compounded SORA – as the most suitable and robust alternative to SIBOR, and seeks feedback on several issues relating to the proposed transition to SORA.

The Association of Banks in Singapore (**"ABS"**), ABS Benchmarks Administration Co Pte Ltd (**"ABS Co."**), the Singapore Foreign Exchange Market Committee (**"SFEMC"**), the Steering Committee for SOR Transition to SORA (**"SC-STS"**), and any persons or entities acting on their behalf, do not give any warranties or representations concerning any data or information contained herein.

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1.1 SIBOR Reform and Transitional Testing

Background on SIBOR Reform

1.1.1 SIBOR is a key interest rate benchmark[1] in Singapore that is administered by ABS Co., with Refinitiv as the calculation agent. SIBOR is commonly used in housing, commercial and syndicated loans, trade financing, and working capital financing.

1.1.2 In December 2017, the ABS and the SFEMC (**"ABS-SFEMC"**) published the Consultation Paper on the Evolution of SIBOR[2], and in July 2018, their response to the feedback received from the public consultation[3].

1.1.3 A key recommendation from this consultation was to implement a new waterfall methodology for SIBOR. This methodology prescribed that SIBOR should reference interbank transactions, as well as other wholesale funding transactions (e.g. large-sized corporate deposits). This recognised a structural shift towards corporate deposit transactions as a key source of bank funding after the Global Financial Crisis.

1.1.4 The waterfall methodology also specified other inputs in the hierarchy, as outlined below:

- Level 1 (transactions in underlying market): The volume-weighted average price of a panel bank's unsecured interbank and other wholesale funding transactions.
- Level 2 (transactions in related markets): Adjustment of previous Level 1 or 2 submissions with changes in related transaction-based benchmarks.
- Level 3 (expert judgement): Submissions based on panel banks' internal methodology, subject to appropriate governance and accountability controls,

[1] For the purpose of this report, "interest rate benchmarks" refers to published and administered reference rates, such as SGD Swap Offer Rate (**"SOR"**), SIBOR or SORA. "Reference rates" is a broader category that includes both interest rate benchmarks and banks-administered rates.

[2] See ABS-SFEMC consultation, "Consultation Paper on the Evolution of SIBOR" (4 December 2017) <https://abs.org.sg/docs/library/consultation-paper-on-the-evolution-of-sibor.pdf>.

[3] See response paper, "Response to Feedback Received from the Consultation Paper on the Evolution of SIBOR" (24 July 2018) <https://abs.org.sg/docs/library/response-paper-to-the-consultation-on-the-evolution-of-sibor-(for-abs-co-).pdf>.

and with reference to indicators from related markets such as MAS Bills and FX swaps.

1.1.5 This methodology would be subject to transitional testing, to ascertain whether a seamless transition for SIBOR could be achieved. Specifically, the interest rate benchmark based on the new waterfall methodology would have to be sufficiently similar to SIBOR such that it could be a direct benchmark replacement in SIBOR contracts without a need for contractual amendments.

- Preliminary analysis undertaken in 2017 using banks' transaction data from 2014 to 2017 showed that the benchmark based on the new waterfall methodology was at broadly similar levels to SIBOR. However, this analysis could not model expert judgement (Level 3) input, which remained a key element of the waterfall methodology.

- Transitional testing involving daily submissions by banks commenced in July 2019.[4] This ran for an initial period of six months, and was extended by a further six months in December 2019 to verify initial findings. The testing of the new methodology was conducted in parallel with the daily ongoing production of SIBOR.[5]

1.1.6 Another recommendation was to discontinue the 12M SIBOR at the time of implementing the new waterfall methodology, expected then in early-2020. This took into account the low market usage of the 12M SIBOR, and the lack of transactions in this tenor for panel banks to base their submissions on. While both considerations similarly applied to the 6M SIBOR, there was support to retain the 6M SIBOR as it is used as a methodological fallback for the 6M SOR, which is widely referenced in derivatives contracts.

Transitional Testing Results

1.1.7 The transitional testing showed that the daily rates based on the new waterfall methodology, which for the purposes of this report shall be referred to as the "**New Polled Benchmark**", were relatively well-anchored by banks' wholesale funding transactions, with less reliance on expert judgement (see Exhibit 1).

- In particular, panel banks were able to anchor their submissions for the 1M and 3M tenors on corporate deposit transactions under Level 1, with relatively low

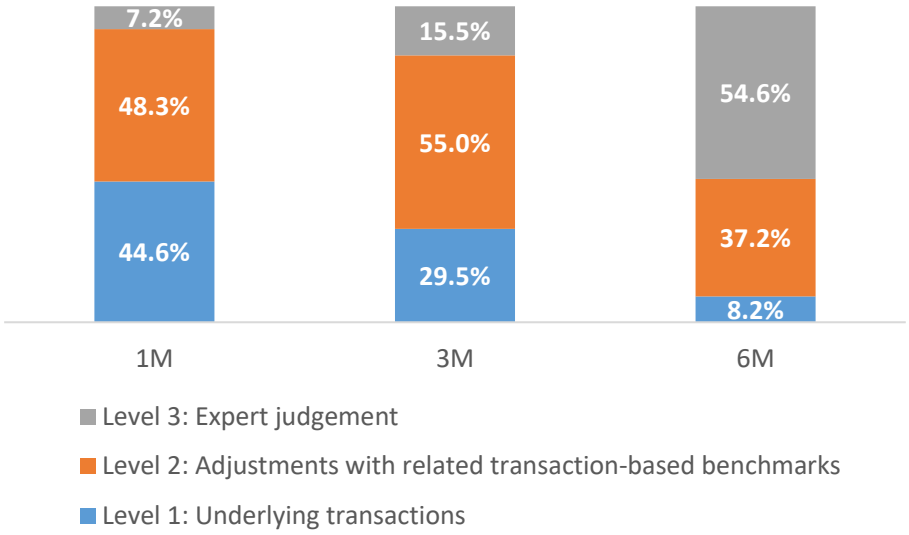
[4] See ABS-SFEMC press release, "ABS Co. Commences Transitional Testing for the Enhanced SIBOR" (1 July 2019) <https://abs.org.sg/docs/library/abs-sfemc-media-release_01-july-2019_FINAL>.

[5] The existing SIBOR submission and publication process remained unchanged during the transitional testing.

reliance on expert judgement (Level 3) at 7.2% and 15.5% of all submissions respectively. Submissions for the 6M tenor were less well-anchored even after the inclusion of corporate deposit transactions, with a higher reliance on expert judgement at 54.6% of all submissions.

- The transitional testing data also reaffirmed that banks were funding themselves less through unsecured interbank term borrowing and more through other wholesale funding transactions. In particular, corporate deposits accounted for more than 90% of all transactions under Level 1, both in terms of transaction count and volume.

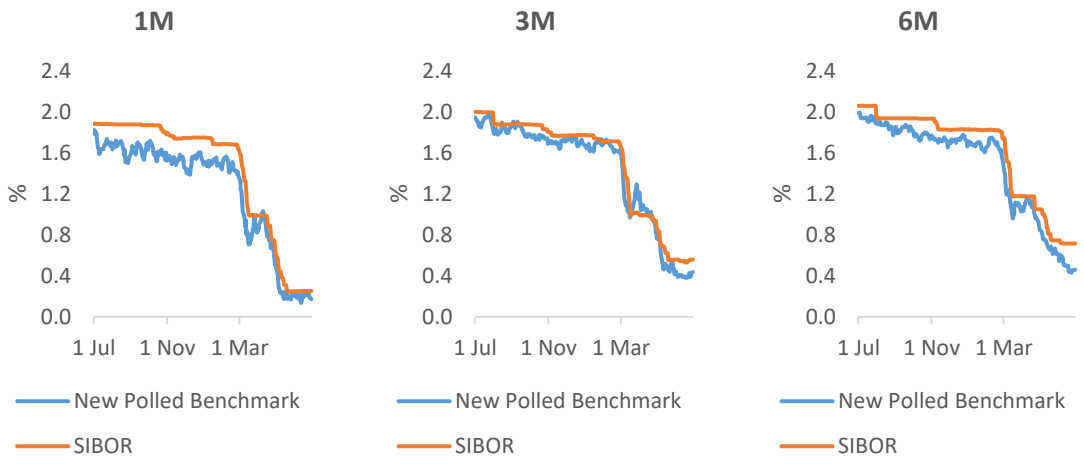
Exhibit 1: Breakdown of Submissions by Level (July 2019 to June 2020)



1.1.8 However, the transitional testing also showed that the New Polled Benchmark was more volatile than SIBOR (see Exhibit 2).

- While higher volatility was observed during ABS-SFEMC's preliminary analysis in 2017, the actual increase in volatility observed during the transitional testing was larger.
- The increase in volatility was due partly to a heavier reliance on transactions data, which were highly responsive to changes in funding conditions in the banking system. In addition, as panel banks incorporated expert judgement input through references to various related markets, this resulted in a wider dispersion of submissions for the New Polled Benchmark compared to SIBOR.
- Given the higher volatility of the New Polled Benchmark, the ABS-SFEMC has assessed that the New Polled Benchmark could be less well-received by current SIBOR users, who are used to the relative stability of SIBOR.

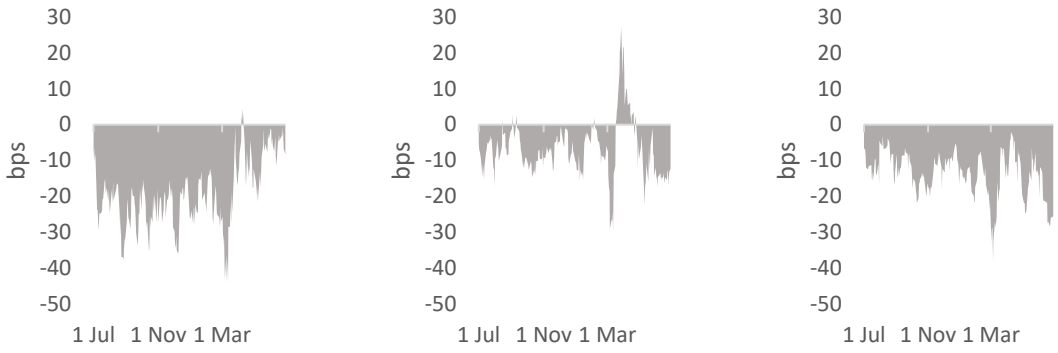
Exhibit 2: New Polled Benchmark and SIBOR (July 2019 to June 2020)



1.1.9 There was also a non-negligible spread between the New Polled Benchmark and SIBOR (see Exhibits 2 and 3). The spread differed across the 1M, 3M and 6M tenors, and within each tenor, the spread was not stable across time. This contrasted with ABS-SFEMC's preliminary analysis in 2017, which had suggested that the New Polled Benchmark would generally track SIBOR, albeit with a higher volatility.

- One key factor in the recent transitional testing was the declining non-bank loan-to-deposit ratios during this period, which resulted in lower interest rates for corporate deposits. With corporate deposits forming a significant proportion of transactions referenced by panel banks, this caused the New Polled Benchmark to be lower than SIBOR for most of the transitional testing period.
- In addition, some of the market rates referenced by panel banks for informing their expert judgment (e.g. MAS Bills yields, FX swap-implied interest rates) were lower than unsecured interbank lending rates during the transitional testing period.

Exhibit 3: Spread of New Polled Benchmark and SIBOR (July 2019 to June 2020)



1.1.10 Taking into account the higher volatility, as well as the non-negligible and unstable spreads, the ABS-SFEMC has assessed that there is a material risk that a seamless transition from SIBOR to the New Polled Benchmark would not be possible.

- As the New Polled Benchmark cannot directly replace SIBOR in contracts, this means that there would be a need for extensive industry-wide amendments of existing SIBOR contracts to shift to referencing the New Polled Benchmark.
- The resulting transition from SIBOR to the New Polled Benchmark would be significantly more complicated and resource intensive for SIBOR users than originally envisaged.

1.2 SOR-to-SORA Transition and its Implications for SIBOR Reform

1.2.1 Over the past 11 months, the financial industry has also been making preparations to transition from SOR to SORA. SOR is an FX swap-implied interest rate benchmark calculated from actual transactions in the USD/SGD FX swap market, and uses USD LIBOR in its computation. A concerted review of the outlook for SOR commenced in 2018, following the UK Financial Conduct Authority's announcement of the likely end to USD LIBOR after end-2021. This culminated in the ABS-SFEMC's publication of its roadmap for the transition from SOR to SORA[6] in August 2019, and the establishment of the SC-STS to oversee the transition.

[6] See ABS-SFEMC report, "Public Consultation on Roadmap for Transition of Interest Rate Benchmarks: From SOR to SORA" (30 August 2019) <https://www.abs.org.sg/docs/library/consultation-report-on-roadmap-for-transition-of-interest-rate-benchmarks-from-sor-to-sora.pdf>.

- SORA was identified as the replacement benchmark for SOR, particularly in the SGD derivatives markets and key institutional cash markets such as corporate loans and floating rate notes ("**FRNs**") where SOR has been widely-used.
- For retail and SME loan markets, where SOR has been used to a lesser extent, it was proposed that participants could transition to a range of possible reference rates, including SIBOR and SORA. However, this assumed that there would be a seamless transition from SIBOR to the New Polled Benchmark. The ABS-SFEMC roadmap also highlighted that the longer term outlook for the New Polled Benchmark was not guaranteed, and would have to take into account further changes in bank funding structures and international developments.

1.2.2 Since its formation, the SC-STS has achieved good progress for the development of SORA derivatives and cash markets. Key milestones for the SOR-to-SORA transition are set out in Annex 1.

- A majority of SC-STS member banks are ready to trade SORA derivatives. SORA derivatives are being actively quoted by dealers and pricing has been made available on key financial market data platforms. In terms of market infrastructure, LCH has also launched the central clearing of SORA derivatives in May 2020.
- Market conventions for SORA cash products are being established and will be made available by 3Q this year. Banks have started to issue SORA-based FRNs, corporate loans, and retail loans.
- Industry awareness and acceptance of SORA as a viable replacement benchmark for SOR has increased significantly.

1.2.3 Given the results of the SIBOR transitional testing and developments in the use of SORA, a key question is whether SGD interest rate markets should have two main interest rate benchmarks (SORA and the New Polled Benchmark) i.e. a 'multiple rate approach', or if SIBOR and the New Polled Benchmark should be discontinued to concentrate activity in SORA i.e. a 'SORA-centered approach'.

- A key premise is that SIBOR cannot be sustained in the medium-term. The transitional testing reaffirmed that the unsecured interbank term funding market, which had hitherto underpinned SIBOR, has declined as a key funding source for banks. This is a structural change, which is unlikely to be reversed.
- While a transition from SIBOR to the New Polled Benchmark is possible, it is necessary to ask if the New Polled Benchmark can bring value add to the market. Conversely, given good progress in the development of SORA derivatives and

cash markets, it is also useful to examine whether there are market benefits that can be reaped by centering SGD financial products on the use of SORA.

- The following section seeks to articulate what the future landscape for SGD interest rate benchmarks could look like, and assesses the merits of moving SGD financial markets towards a SORA-centered approach.

2 Future Landscape for SGD Interest Rate Benchmarks

2.1 SGD Interest Rate Benchmarks – Current and Future

2.1.1 **SIBOR** and **SOR** are currently widely used by different client segments in SGD interest rate markets, while usage of **SORA** has been picking up since the publication of the SOR-to-SORA transition roadmap. **Bank administered rates** (e.g. board rate, fixed deposit rate) are another common reference rate in the SME and retail loan market.

2.1.2 Looking ahead, SGD interest rate markets could rely on a mix of the following reference rates:

- **SORA**, a near-risk free rate (**"RFR"**) administered by MAS since 2005 and determined entirely from overnight transactions in the unsecured interbank market. Box A below explains how SORA can be used in financial products.
- **New Polled Benchmark**, if published, will be administered by ABS Co, and computed from panel banks' submissions based on the new waterfall methodology. This benchmark measures the cost of panel banks' unsecured interbank and other wholesale borrowings.
- **Bank administered rates**, which are internally administered by banks and reflect their funding costs.

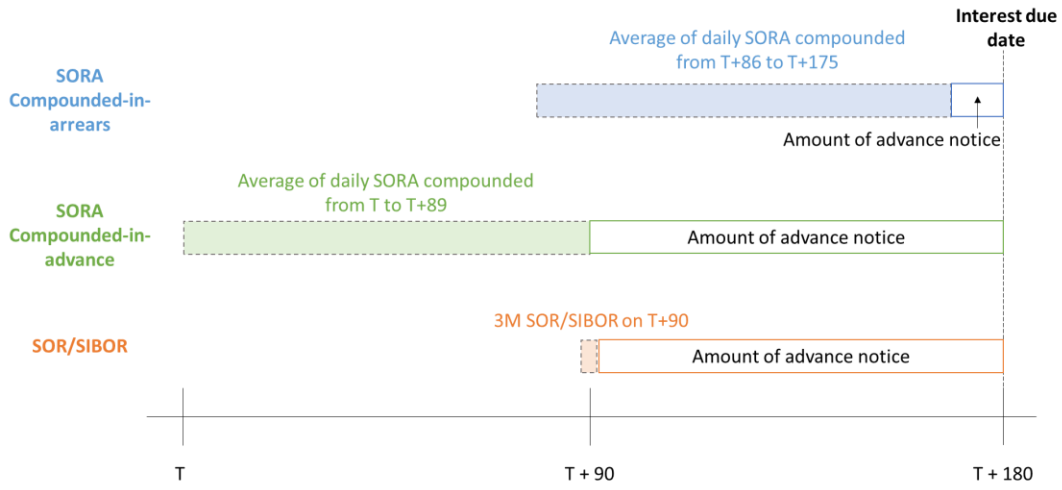
Box A: Use of SORA in financial contracts

Unlike SIBOR and SOR contracts that typically reference a single day's reading of the benchmark in each interest payment period, SORA-based contracts typically reference a compounded average of daily SORA readings over a period (i.e. Compounded SORA). This is similar to how RFRs are being used in other jurisdictions.

There are two possible compounding approaches (see Exhibit 4).

- **Compounded SORA-in-arrears.** Financial contracts referencing Compounded SORA-in-arrears would compute the interest rate for the coming period by averaging the daily SORA readings from the previous payment date to the current payment date, with some slight shifts in the computation period to provide users with a few days of advance notice on interest payments.
- **Compounded SORA-in-advance.** Financial contracts referencing Compounded SORA-in-advance would compute the interest rate for the coming period by averaging the daily SORA readings between the two prior payment dates.

Exhibit 4: Example on how interest due at T+180 can be computed for loans with a 90-day interest period



2.1.3 In addition, the SC-STS is looking to develop a term interest rate benchmark based on SORA derivatives (**"Term-SORA"**).

- The feasibility of Term-SORA will depend on the existence of a deep and liquid SORA derivatives market, which would take time to develop.
- Term-SORA could be preferred by some market participants for use in certain products such as trade loans. However, a preliminary scan of developments in other jurisdictions suggests that the need for such rates may be limited. For instance, the National Working Group on Swiss Franc Reference Rates had highlighted that the compounded CHF RFR should be used in cash products wherever possible, as it did not expect that a term benchmark based on derivatives referencing the CHF RFR would be developed[7]. UK authorities had also emphasised that the usage of such term benchmarks should be limited[8].

[7] See minutes of 21st Meeting of the National Working Group on Swiss Franc Reference Rates, 5 February 2019 <https://www.snb.ch/n/mmr/reference/minutes_20190205/source/minutes_20190205.n.pdf>.

[8] UK authorities have indicated their preference for a broad-based transition to compounded Sterling Overnight Index Average (**"SONIA"**) rates, as these would be inherently more robust than the forward-looking term-SONIA benchmarks. SONIA is the identified RFR for the GBP market.

2.1.4 There are two key differences across the interest rates described above.

- Term premium: Compounded SORA is backward-looking – computed from an average of daily realised SORA readings over an interest period, and determined at the end of the interest period. In contrast, SIBOR, the New Polled Benchmark, bank administered rates, and Term-SORA are forward-looking, and will reflect market expectations of the respective interest rate over a future period, e.g. the period from today to one month from now. Forward-looking rates include a term premium as compensation for uncertainty over how daily interest rates may move in the future period, while backward-looking rates like Compounded SORA do not.
- Credit risk premium: SORA is a near-risk free rate. Given its short tenor, credit risk is less significant. This also applies to Term-SORA, as it reflects future expectations of SORA. In contrast, SIBOR, the New Polled Benchmark, and bank administered rates include credit risk premia as these rates reflect banks' unsecured term funding costs.

2.1.5 Given the differences between SIBOR and Compounded SORA, it is expected that any transition between the two interest rate benchmarks will entail adjustments to spreads that are applicable in contracts, to account for the difference if interest payments in nominal amounts are to be kept broadly similar.

2.2 Difference between the Approaches

2.2.1 The choice between the SORA-centered approach and the multiple rate approach will mainly impact the cash market, particularly the SME and retail loan markets where SIBOR is widely used.

- Currently, the derivatives and FRN markets mainly reference SOR, with negligible usage of SIBOR. Looking ahead, SORA is expected to replace SOR as the dominant benchmark in these markets under both approaches.
- In the loans market, institutional clients such as financial institutions and large corporates mainly use SOR in their floating rate loans, as their primary consideration is the ability to hedge their interest rate risk with derivatives. Going forward, such users are likely to use Compounded SORA-in-arrears, to be aligned with SGD derivatives. Nonetheless, some products (e.g. trade loans) could require interest rates to be known earlier, in which case Compounded SORA-in-advance, or Term-SORA should it be eventually developed, could be likely reference rates.

- SME and retail customers use a variety of reference rates (SOR, SIBOR, and bank administered rates such as board rates or fixed deposit rates) for their floating rate loans, as their considerations and preferences are more varied e.g. stability of interest payments, alignment with fixed deposits. The test is which of the two approaches (see Exhibit 5 below) can best cater to these varied considerations and preferences. The availability of bank administered rates for customers is not expected to differ between both approaches.

Exhibit 5: Current and future SGD interest rate landscape

Reference Rates		Derivatives	Bonds	Loans	
				Institutional	Retail/SME
Current	*SOR*	✔	✔	✔	✔ (low usage)
	SIBOR			✔ (low usage)	✔
	Bank administered rates				✔
Future	*SORA*[9]	✔	✔	✔	✔
	New Polled Benchmark			*?* *(only under the multiple rate approach)*	
	Bank administered rates				✔

2.3 Key Considerations

2.3.1 To assess which approach will benefit SGD financial markets more in the long-run, ABS-SFEMC and SC-STS analysed the relative advantages of the two approaches from the following perspectives.

- End-users' needs and price discovery
- Lenders' needs
- Market development
- Benchmark sustainability
- International alignment

[9] This includes both Compounded SORA-in-advance and Compounded SORA-in-arrears.

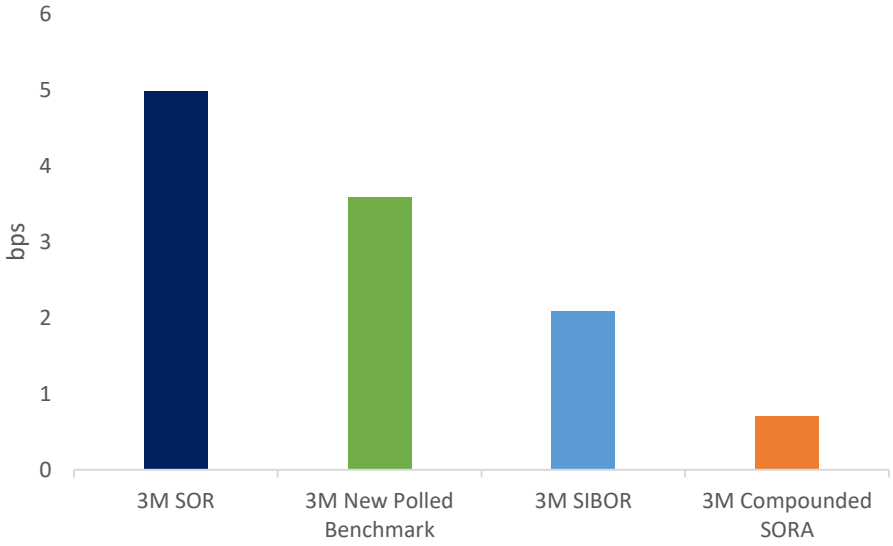
End users' needs and price discovery

2.3.2 At a macro level, the SORA-centered approach would result in a more transparent and uniform interest rate benchmark landscape, facilitating easier price comparisons across banks' offerings.

2.3.3 Both the SORA-centered and multiple rate approaches can meet the needs of current SIBOR users. While there may be some initial inertia in taking up SORA-based products, this is expected to dissipate as market participants gain familiarity with this rate. Fundamentally, Compounded SORA-in-advance is on balance a better replacement for SIBOR than the New Polled Benchmark, for the following reasons:

- Compounded SORA-in-advance and the New Polled Benchmark both meet users' desire for a transparent benchmark rate.
- Being an average rate, Compounded SORA-in-advance is of comparable volatility with SIBOR, but is less volatile than the New Polled Benchmark (see Exhibit 6).
- Borrowing costs based on the New Polled Benchmark could spike in times of market stress, as the benchmark incorporates the credit risk of the panel banks. These spikes can expose customers to higher loan payments during a crisis. Such rate spikes are less evident in SORA, as credit risk is less of a consideration. This is even less so for Compounded SORA, given the averaging effect of compounding over a period.
- Compounded SORA-in-advance, like SIBOR and the New Polled Benchmark, would allow users to know of their interest amounts ahead of time (see Box A above). On the other hand, the short notice period (e.g. a few days) of the payment amounts for products referencing Compounded SORA-in-arrears, makes it a less attractive option for retail and SME customers.

Exhibit 6: Volatility (standard deviation) of daily changes from July 2019 to June 2020 (bps)



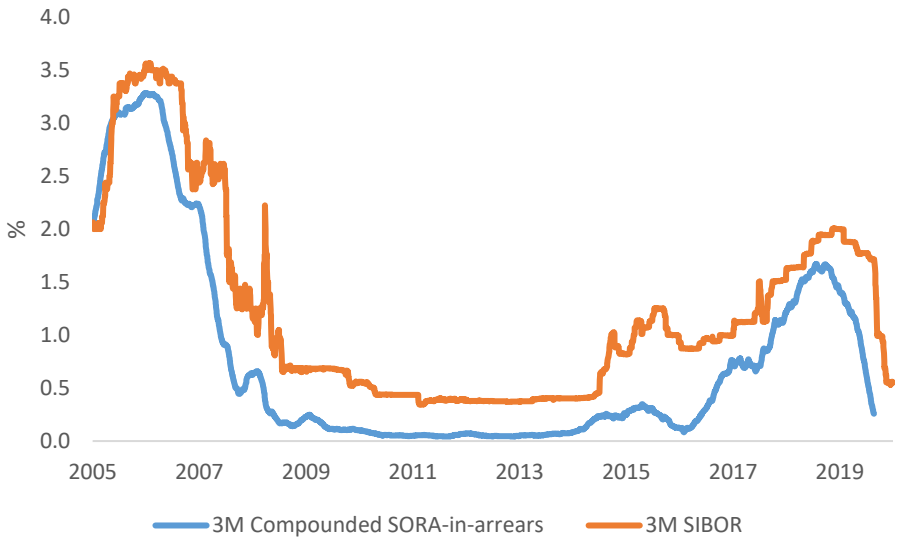
Lenders' needs

2.3.4 From a risk management perspective, there are benefits to be reaped from the SORA-centered approach, but lenders need to be watchful of the potential risks.

- The SORA-centered approach would reduce basis risk[10] that would have to be managed under the multiple rate approach, where lenders use different reference rates for different instruments on their balance sheets e.g. derivatives that reference Compounded SORA and mortgage loans that reference the New Polled Benchmark.
- Nevertheless, lenders need to be watchful of possible mismatches between their RFR-based assets and their funding costs, especially in times of stress when their funding costs rise while RFRs may fall. However, for the SGD market, this effect seems less pronounced for SORA compared to RFRs in jurisdictions which are based on a secured market (e.g. in the US where the RFR is based on the repo market). For instance, Compounded SORA rose in line with SIBOR during the Global Financial Crisis, though not to the same extent (see Exhibit 7).

[10] Basis risk is the risk associated with exposures to financial products that are tied to different benchmarks or underlying drivers – e.g. assets being tied to the New Polled Benchmark, while liabilities are tied to SORA. If changes in the various benchmarks/drivers are not well correlated, this can lead to mismatches in institutions' balance sheets. Basis risks will also be evident if derivatives (for hedging) reference one benchmark, while underlying exposures that are to be hedged reference another.

Exhibit 7: 3M SIBOR vs 3M Compounded SORA-in-arrears since 2005



Market development

2.3.5 The SOR transition roadmap has already set out a transition path to SORA for institutional clients in the derivatives, FRN, and business loans markets. The SORA-centered approach would result in a wider use of SORA in other segments of the cash market, i.e. the SME and retail loan market. Having liquidity concentrated in SORA will provide a tailwind to the development of SORA markets, and encourage greater market take-up.

2.3.6 In contrast, a multiple rate approach would mean a more bifurcated market, which could delay the development of SORA markets, and impact the depth and efficient functioning of SGD financial markets.

Benchmark sustainability

2.3.7 SORA is computed purely from actual transactions by banks, with no expert judgement required. Moreover, the overnight unsecured market i.e. the underlying market for SORA is one of the most, if not the most, actively traded SGD funding market. This is unlikely to change significantly in the future.

2.3.8 In contrast, the long-term sustainability of poll-based benchmarks like the New Polled Benchmark is not certain, as it is dependent on continued participation and submissions by a group of panel banks. This benchmark sustainability risk was acknowledged in both the 2017 SIBOR consultation and the 2019 SOR-to-SORA transition roadmap. The multiple rate approach raises the risk that any transition to the New Polled Benchmark may require another shift in the future, if the panel cannot be sustained. This therefore supports an early one-time shift to the SORA-centered approach.

International alignment

2.3.9 Both the RFR-centered and multiple rate approaches have been adopted in various jurisdictions globally. Financial centers in US, UK, and Switzerland have decided on an RFR-centered approach, while other jurisdictions such as EU and Japan are also increasing the use of their RFRs, even as they retain their IBOR benchmarks.

- In the US, the Alternative Reference Rate Committee (**"ARRC"**)[11] had selected the Secured Overnight Financing Rate (**"SOFR"**), published by the Federal Reserve Bank of New York (**"FRBNY"**), as its recommended alternative to USD LIBOR, and has been encouraging the usage of SOFR in cash markets, such as mortgage loans and FRNs. Nonetheless, the Federal Reserve Board (**"Fed"**) has remained open to the use of alternative reference rates (e.g. AMERIBOR, which is an unsecured overnight funding rate similar to SORA).[12]
- In the UK, the Working Group on Sterling Risk-Free Reference Rates[13] identified the SONIA to replace the GBP LIBOR, and noted earlier this year that the derivatives and the bonds markets had readily, if not already, adopted SONIA.[14] For the loans market, the use of SONIA was deemed appropriate as the LIBOR replacement rate for most market participants, while alternative rates (e.g. fixed rates and term-SONIA reference rates) would likely be required for a small proportion of the market.
- In Switzerland, the National Working Group on Swiss Franc Reference Rates[15] recommended the Swiss Average Rate Overnight (**"SARON"**) as the alternative

[11] See ARRC's website, <https://www.newyorkfed.org/arrc>.

[12] See Fed Chairman Jerome Powell's comments during his testimony to the US Senate's Committee, Housing and Urban Affairs held on 12 February 2020.

[13] See Bank of England's webpage on "Transition to Sterling Risk-Free Rates from LIBOR" <https://www.bankofengland.co.uk/markets/transition-to-sterling-risk-free-rates-from-libor>.

[14] See report from Working Group on Sterling Risk-Free Reference Rates, "Use Cases of Benchmark Rates: Compounded in Arrears, Term-Rate and Further Alternatives", January 2020, <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/use-cases-of-benchmark-rates-compounded-in-arrears-term-rate-and-further-alternatives.pdf>.

[15] See Swiss National Bank's (**"SNB"**) webpage for The National Working Group on Swiss Franc Reference Rates <https://www.snb.ch/en/ifor/finmkt/fnmkt_benchm/id/finmkt_reformrates>.

to CHF LIBOR. Furthermore, it had assessed that a robust forward-looking term benchmark based on SARON derivatives is unlikely to be feasible, and cash products should use compounded SARON wherever possible.[16]

- In Europe, the Working Group on Euro Risk-Free Rates selected the Euro Short-Term Rate (**"€STR"**) as the new Euro risk-free rate, and has been involved with the transition from the Euro Overnight Index Average (**"EONIA"**) to €STR. Following its reform, EURIBOR is compliant with the EU benchmark regulations, and can be used for existing or new contracts/instruments.
- In Japan, the Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks[17] identified the Tokyo Overnight Average Rate (**"TONA"**) as the RFR for JPY. In a consultation for the cash market, the Committee noted that the term benchmark based on TONA derivatives is the preferred long-term replacement for JPY LIBOR. Before its development, the reformed TIBOR and TONA compounded-in-arrears would be a temporary replacement in the loans and bonds market respectively.[18]

2.4 Recommended Approach

2.4.1 Having carefully considered the above perspectives, ABS-SFEMC and SC-STS recommend adopting the SORA-centered approach. The SORA-centered approach will continue to meet users' needs, and facilitate transparency and easier comparison of loan pricing. Lenders will also face less basis risk exposure across various product types. Moreover, an RFR-centered approach is in line with key trends in some major jurisdictions, and avoids the risk of benchmark sustainability issues inherent in IBOR benchmarks. The SORA-centered approach would also promote the development of deep and efficient SGD financial markets, by concentrating usage of SORA.

[16] See minutes of 21st Meeting of the National Working Group on Swiss Franc Reference Rates, 5 February 2019 <https://www.snb.ch/n/mmr/reference/minutes_20190205/source/minutes_20190205.n.pdf>.

[17] See Bank of Japan's webpage for Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks <http://www.boj.or.jp/en/paym/market/jpy_cmte/index.htm/>.

[18] See report from Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks, "Final Report on the Results of the Public Consultation on the Appropriate Choice and Usage of Japanese Yen Interest Rate Benchmarks", November 2019, <https://www.boj.or.jp/en/paym/market/jpy_cmte/data/cmt191129b.pdf>.

3 Transition from SIBOR to SORA

3.1 Discontinuation of SIBOR

3.1.1 Given the recommendation of the SORA-centered approach, ABS-SFEMC and SC-STS decided not to proceed with the implementation of the New Polled Benchmark. SIBOR will also be discontinued over the medium term, and the discontinuation date for the 1M and 3M SIBOR will be announced by end-2020.

- 12M SIBOR: Following from the December 2017 proposal, the 12M SIBOR will be discontinued on 1 January 2021.
- 6M SIBOR: Given the low market usage and lack of activity underpinning the tenor, 6M SIBOR could be discontinued when or shortly after 6M SOR is discontinued after end-2021.[19]
- 1M and 3M SIBOR: For the remaining tenors, the discontinuation should only be effected in three to four years from the announcement – i.e. SIBOR could end sometime in 2024. The proposed period takes into account the typical two to three-year lock-in periods in most retail mortgages, and will provide sufficient time for customers to consider shifting to new loans that reference SORA after the expiry of the lock-in periods. This will greatly reduce the need to undertake contractual amendments to existing SIBOR contracts.

3.1.2 Given SIBOR's impending discontinuation, ABS-SFEMC and SC-STS strongly recommend that customers looking to enter into a new contract should consider using alternative reference rates, such as SORA, to avoid the need to transition out of SIBOR subsequently. If customers continue to have a strong preference to enter into new SIBOR contracts during this interim period, it is critical that appropriate contractual fallbacks are incorporated, to minimise the risk of contract frustration[20] at SIBOR's eventual discontinuation.

3.1.3 There will be no immediate impact to existing contracts referencing 1M, 3M, or 6M SIBOR. Banks will reach out to customers in a timely manner, and provide sufficient notice for them to consider other loan packages.

[19] Currently, 6M SIBOR is relied upon in the methodological fallback of 6M SOR.

[20] If SIBOR is discontinued, contracts referencing SIBOR with no fallbacks in place could not be performed.

3.2 Transition Approach

3.2.1 ABS-SFEMC and SC-STS propose for the transition of legacy contracts referencing SIBOR to be done in a phased approach. Contracts referencing 6M SIBOR are not substantial in numbers and transition can take place ahead of end-2021. Transition of legacy contracts referencing 1M and 3M SIBOR can take place after the industry has substantially completed the SOR-to-SORA transition in 2021. In the immediate term, the key priority is to continue to deepen liquidity in SORA markets.

- There has been good progress made in the SOR-to-SORA transition work in establishing market conventions for SORA products. Conventions for SORA derivatives have been published, while those for SORA loans will be published by SC-STS in Q3 2020.
- Apart from the SORA business and retail loans that were piloted in Q2 2020 and Q3 2020 respectively, banks are expected to launch more SORA loans.
- In support of these efforts, banks will continue their outreach to various customer segments, to explain the usage of SORA in loans, and the implications of benchmark transition initiatives. More information on the key characteristics of SORA-based products will be published in the coming year, as the transition progresses.

3.2.2 As liquidity in SORA cash markets deepens, and as customers develop a better understanding of SORA-based products, this will set the stage for the transition of legacy SIBOR and SOR contracts to SORA. This is expected to start in late-2020 or early 2021, and continue through to 2024.

4 Invitation to Provide Feedback

4.1 Given the recommendation of the SORA-centered approach, ABS-SFEMC and SC-STS welcome interested parties to provide feedback on the following:

- To discontinue 6M SIBOR when or shortly after 6M SOR is discontinued after end-2021, and to discontinue 1M and 3M SIBOR three to four years from the announcement date of discontinuation (expected by end-2020). **Do you agree with the recommended timeline for SIBOR's discontinuation?**
- For the SIBOR transition to take place mainly after the industry has substantially completed the SOR-to-SORA transition in 2021, with the key priority in the immediate term to be on the deepening of SORA markets. **Do you agree with this phased transition approach?**
- **Are there other work areas besides those highlighted in Annex 1 that SC-STS should look into, to facilitate adoption of SORA and a successful transition to SORA?**

4.2 Please submit your feedback **by 30 September 2020**. Electronic submissions via the online feedback form[21] are encouraged and written feedback may be submitted to:

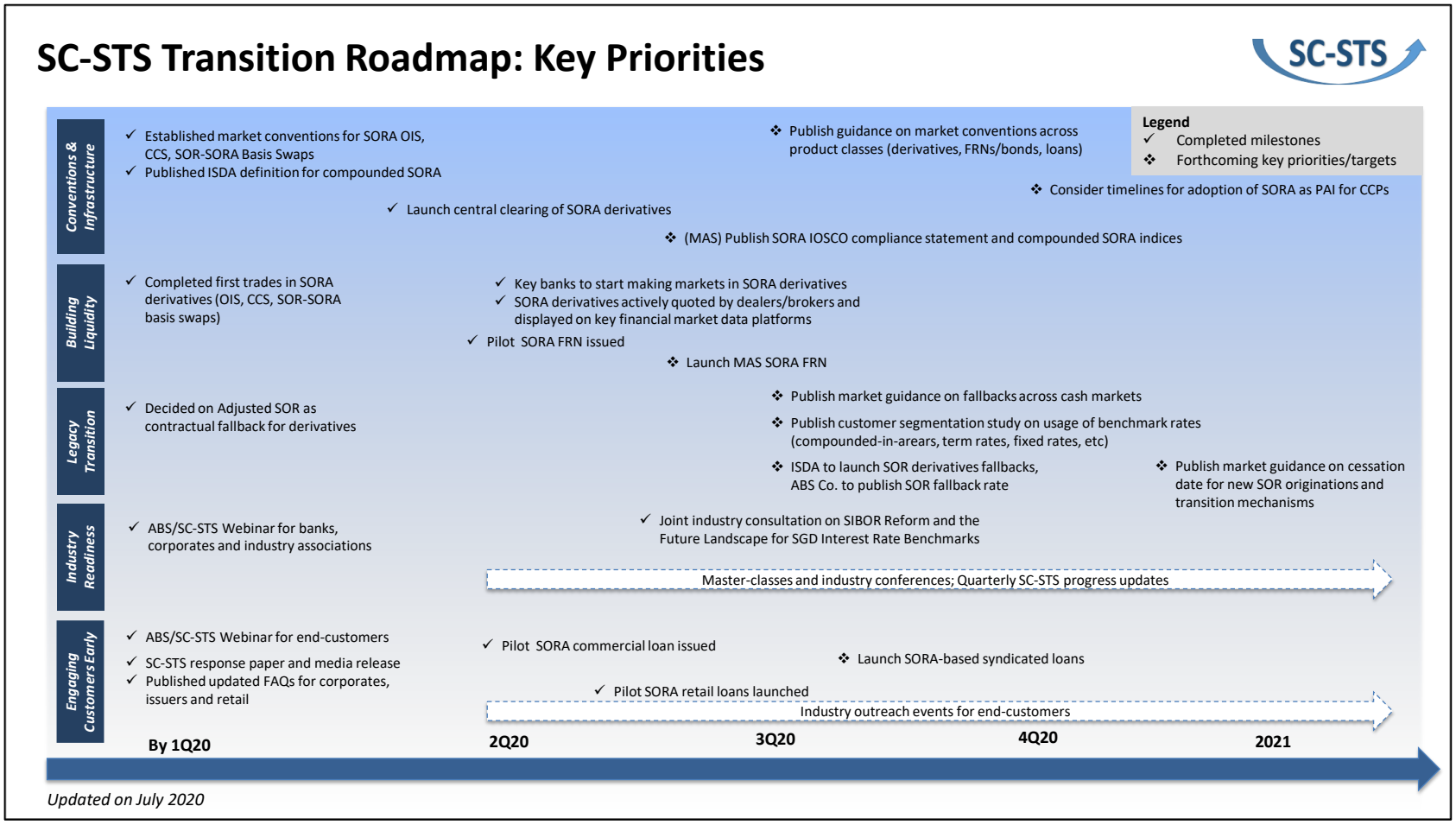
The Association of Banks in Singapore
#12-08, MAS Building
10 Shenton Way, Singapore 079117
Fax: 6224 1785
Email: SORTransition@abs.org.sg

Please note that all submissions received may be made public unless confidentiality is specifically requested for the whole or part of the submission.

[21] The online feedback form can be found here.

Annex 1

SC-STS TRANSITION ROADMAP FROM SOR TO SORA



Updated on July 2020