ICMA
International Capital Market Association

The transition to risk-free rates in the bond market *By Paul Richards*

Summary

RFR This Quarterly Assessment summarises progress in making the transition to near risk-free rates in the bond market and sets out some of the challenges in the period ahead. The assessment focuses on the transition from LIBOR to SONIA in the UK, but also provides comparisons with the transition from other IBOR jurisdictions to near risk-free rates (eg to SOFR in the US, €STR in the euro area and SARON in Switzerland), where appropriate. Following a reminder of the background, the assessment considers the following: adoption of overnight rates; market conventions; term rates; fallbacks; legacy bonds; cash market adjustment spreads; derivative hedges; regulatory issues; supervision; international coordination; and raising market awareness.

Background

1 In July 2017, Andrew Bailey, the Chief Executive of the FCA which regulates LIBOR, said that the FCA would no longer intend to persuade or compel banks to submit contributions for LIBOR after the end of 2021.[1] In the view of the authorities, there are three problems with LIBOR:[2]

- First, since the financial crisis, the structure of financial markets has changed: LIBOR really has become the rate at which banks do *not* lend to each other.[3]
- Second, LIBOR is a risk to financial stability: the pricing of hundreds of trillions of dollars of financial instruments rests on the expert judgment of relatively few individuals.
- Third, in the period before the introduction of benchmarks regulation, there was evidence that LIBOR had been manipulated in some cases.

2 To avoid these problems, the authorities want financial markets to transition away from LIBOR and the other IBORs to near risk-free rates. In all the main jurisdictions, the chosen risk-free rates are overnight rates: ie SONIA in the UK; SOFR in the US; €STR in the euro area; SARON in Switzerland; and TONA in Japan. A common objective is to make risk-free rates as robust as possible, with robustness measured primarily by the volume of underlying observable transactions.

3 Consequently, the authorities have warned market firms that LIBOR may not continue beyond the end of 2021; that they need to prepare for the transition to risk-free rates; and that their preparations will be monitored by their supervisors:

1. Andrew Bailey, Chief Executive of the FCA: *The Future of LIBOR,* 27 July 2017.

2. See in particular the speeches by the Governor of the Bank of England and the President of the Federal Reserve Bank of New York at the Bank of England Markets Forum, 24 May 2018; and the speech by the Chair of ESMA at the ICMA Annual Conference in Madrid, 31 May 2018. See also: Andrew Hauser, Executive Director, Markets, Bank of England: *Join the Revolution! Why It Makes Business Sense to Move on from LIBOR,* 27 June 2019.

3. Sir Dave Ramsden, Deputy Governor of the Bank of England, said that, in the first quarter of 2019, "there were on average only 9 deposits a day underpinning 6-month sterling LIBOR, with a total daily value of £81 million. SONIA, an overnight benchmark provided by the Bank, [is] underpinned by transactions worth about £40 billion a day.": *Last Orders: Calling Time on LIBOR,* Bank of England, 5 June 2019.

- Andrew Bailey, as Chief Executive of the FCA, has said that "the most effective way to avoid LIBOR-related risk is not to write LIBOR-referencing business"; and that "for those who are not yet aware, not yet engaged, and without plans to address their LIBOR-related dependencies, I warn you again of the risks."[4]
- Randal Quarles, Vice Chair for Supervision at the Federal Reserve Board, has said that "clarity on the exact timing and nature of the LIBOR stop is still to come, but the regulator of LIBOR has said that it is a matter of *how* LIBOR will end rather than *if* it will end, and it is hard to see how one could be clearer than that". He has also said that "many seem to take comfort in continuing to use LIBOR – it is familiar, and it remains liquid. But history may not view that decision kindly; after LIBOR stops, it may be fairly difficult to explain to those who may ask exactly why it made sense to continue using a rate that you had been clearly informed had such significant risks attached to it. And make no mistake – as good as the fallback language may be, simply relying on fallback language to transition brings a number of operational risks and economic risks."[5]

4 The transition to risk-free rates is a global challenge. It will only succeed if the authorities and market participants work together. To help organise the transition, the authorities have set up a series of risk-free rate working groups, and the transition is being overseen in each jurisdiction by these risk-free rate working groups, which involve market participants and the authorities working together. The transition is being coordinated internationally through the FSB Official Sector Steering Group (OSSG), co-chaired by Andrew Bailey, as Chief Executive of the FCA, and John Williams, President of the Federal Reserve Bank of New York. ICMA participates in the RFR Working Groups in the UK, the euro area and Switzerland; and ICMA is chairing the Bond Market Sub-Group in the UK, working with the FCA and Bank of England, and is in regular contact with the equivalent group in the US Alternative Reference Rates Committee (ARRC), which is working with the Federal Reserve.

Adoption of overnight rates

5 Considerable progress has already been made with adoption of SONIA in new public issues of floating rate notes (FRNs) over the past year:

- £27.4 billion issued in total, comprising £20.5 billion in the first half of 2019, compared with £6.9 billion in the second half of 2018, following the ground-breaking EIB deal in the summer of 2018;[6]
- 35 new FRN transactions referencing SONIA in the first half of 2019, compared with 12 in the second half of 2018;
- 19 different bookrunners in the first half of 2019, compared with 11 in the second half of 2018;
- a wide range of SSA, bank and building society issuers;
- an increasing amount of secondary market activity; and
- over 180 investors.

As a result, new public issues of FRNs referencing sterling LIBOR maturing beyond the end of 2021 have all but ceased.[7]

6 The market in securitisations referencing SONIA has also made a useful start. Following two retained transactions in December and March, arranged by Lloyds and HSBC with Lloyds respectively, in April 2019 Nationwide launched the first securitisation referencing SONIA distributed to investors.[8] There have been several securitisations referencing SONIA since then.

Market conventions

7 The same market conventions have been used in all bond market transactions referencing SONIA so far: overnight SONIA compounded over the interest period, with the margin added, and with a five-day lag before the end of each interest period. Like overnight SONIA, overnight SOFR has been used in the FRN market in the US.[9] There is agreement that an overnight risk-free rate is the most robust rate.

4. Andrew Bailey, Chief Executive of the FCA: *Interest Rate Benchmark Reform: Transition to a World Without LIBOR*, Bloomberg, London 12 July 2018.

5. Randal Quarles, Vice Chair for Supervision, Federal Reserve Board: *The Next Stage in the LIBOR Transition*, 3 June 2019.

6. Source: RBC Capital Markets. Progress has also been made with adoption of SOFR in new issues of FRNs in the US, with over $100 billion (including CP) issued in total so far.

7. There have been a few small relatively short-dated private transactions referencing sterling LIBOR.

8. See also the statement on behalf of the Sterling RFR WG: "SONIA-linked FRNs have rapidly become the market norm, with around £25 billion issued since June last year, and LIBOR-linked sterling FRN issuance beyond 2021 has all but ceased. Recent weeks also saw the issuance of the first distributed SONIA-linked RMBS.": *Progress on Adoption of Risk-Free Rates in Sterling Markets*, 15 May 2019.

9. See: Katie Kelly, *Market Conventions for Referencing SONIA*, ICMA Quarterly Report Second Quarter 2019.

8 There have so far been two main differences in market conventions between SONIA in the UK and SOFR in the US: whereas compounding has been used in the UK, simple averaging has often been used in the US; and whereas five-day lags have been used in the UK, four-day lock-outs have often been used in the US. But several recent SOFR transactions have used compounding rather than averaging, and variations on lags rather than lockouts.[10] New discussion papers on market conventions have recently been published in the UK, the US and by the FSB[11] which consider the opportunities for future international alignment, while recognising that it is up to the market to decide whether to evolve towards this.

Term rates

9 Compounded SONIA is a backward-looking overnight rate directly linked to the risk-free rate. While the Sterling RFR Working Group encourages market participants not to delay preparations to conduct new business using overnight rates,[12] one of its priorities this year is also to develop a robust forward-looking term SONIA rate. This would incorporate a derivative of the risk-free rate.[13] As with term LIBOR, and unlike compounded SONIA, each interest payment referencing term SONIA would be known at the beginning of the interest period.[14]

10 Given the progress already made using compounded SONIA, it is not clear whether there is still demand for term SONIA for new transactions in the sterling bond market, and there are some concerns about a potential split of liquidity if a term rate develops alongside compounded SONIA. But as FRN and securitisation issuers have so far mainly consisted of SSAs, banks and building societies, there may still be demand for term SONIA among corporates, particularly in the loan market.[15] A term rate may also be needed for the conversion of legacy transactions from LIBOR to SONIA. Much depends on how soon a sufficiently robust term rate develops.[16]

Fallbacks

11 Since new public issues of sterling FRNs are already referencing SONIA rather than LIBOR, there is no longer a need for LIBOR fallbacks to SONIA in the relevant documentation. But fallbacks already used in legacy bond contracts referencing LIBOR complicate the transition to risk-free rates in the bond market. Before Andrew Bailey's speech in July 2017 announcing the potential discontinuation of LIBOR after the end of 2021, most sterling FRNs referencing sterling LIBOR included fallbacks to the last available rate, which will be fixed for the remaining life of the bond when LIBOR is permanently discontinued. Since July 2017, many fallback clauses in the UK have been drafted to take account of the permanent discontinuation of LIBOR. While the fallback language used in Europe and Asia for new issuance of FRNs under existing multi-currency debt issuance programmes differs from new proposals for fallbacks published by the US ARRC in April,[17] the outcome should in practice be much the same.[18]

12 It has been estimated that legacy bonds referencing LIBOR with a value of at least $864 billion are outstanding globally and due to mature beyond the end of 2021, of which around 80% are denominated in US dollars and around 9% in sterling.[19] Legacy sterling LIBOR bonds which will fall back to a fixed rate when LIBOR is discontinued represent much the largest proportion of

10. A Goldman Sachs transaction in May 2019 used compounded SOFR with a two-day lag. A Morgan Stanley transaction in June 2019 used compounded SOFR, with payment two days after the end of the interest period. The EIB has also issued referencing compounded SOFR, with a five-day lag.

11. Sterling RFR Working Group: *Discussion Paper: Conventions for Referencing SONIA in New Contracts*, March 2019; US ARRC: *A User's Guide to SOFR,* April 2019; and FSB: *Overnight Risk-Free Rates: A User's Guide,* 4 June 2019.

12. Statement on behalf of the Sterling RFR Working Group: *Progress on Adoption of Risk-Free Rates in Sterling Markets,* 15 May 2019.

13. "The FSB recognizes that there may be a role for [forward-looking term] rates for certain cash products. At the same time, the FSB has stated that it considers that the greater robustness of overnight RFRs makes them a more suitable alternative than a forward-looking term RFR in the bulk of cases where an IBOR is currently used.": FSB, *Overnight Risk-Free Rates: A User's Guide,* 4 June 2019.

14. Term rates are also planned in the US (for SOFR) and in the euro area (for €STR), but not in Switzerland (for SARON).

15. Statement on behalf of the Sterling RFR Working Group: "A consultation conducted by the RFR WG in 2018 identified demand for such a [term] rate from some participants in cash markets where usage of forward-looking rates has historically been common, and potentially also to support transition of certain legacy contracts.": *Progress on Adoption of Risk-Free Rates in Sterling Markets,* 15 May 2019.

16. "Three administrators (FTSE Russell, ICE Benchmark Administration and Refinitiv) have confirmed they are working on the development of a Term SONIA Reference Rate.": Sterling RFR Working Group statement on 15 May 2019.

17. US ARRC, *Recommendations Regarding More Robust Fallback Language for New Issuances of LIBOR FRNs,* 25 April 2019.

18. See Catherine Wade, *Fallbacks for LIBOR Floating Rate Notes (Europe and Asia):* ICMA Quarterly Report Third Quarter 2019.

19. Source: RBC Capital Markets. This estimate excludes sovereigns and includes both FRNs and securitisations.

outstanding legacy sterling LIBOR bonds. Since permanent discontinuation of LIBOR does not appear to have been considered when these contracts were originally written, there is a risk of market disruption if nothing is done to pre-empt fallbacks to a fixed rate when LIBOR is permanently discontinued. However, it cannot be assumed that there will be official intervention to legislate for the transition from LIBOR to an alternative rate: this would be a matter for the authorities.

Legacy bonds

13 The adoption of SONIA in new bond issues, coupled with the use of more robust fallbacks in case there are any more new bond issues still referencing LIBOR with maturities beyond the end of 2021, both help to cap the scale of the legacy LIBOR bond problem. But they do not solve it. Maturing bonds will reduce the scale of the problem in time, but there is a significant volume of maturities beyond 2030, and some bonds are perpetual, with no maturity date.

(i) Consent solicitation, bond by bond

14 One way of addressing the legacy sterling LIBOR bond problem would be to amend the interest rate provisions in bond contracts through a process of consent solicitation.[20] Consent solicitation is an existing market practice for individual bonds. Issuers can propose to undertake consent solicitations if and when they wish. The first example of a consent solicitation involving the replacement of LIBOR by compounded SONIA plus a fixed spread was launched by ABP in May 2019 in relation to £65 million FRNs due in 2022. At a meeting of the noteholders on 11 June 2019, the extraordinary resolution was successfully passed. Successful consent solicitations, as in the case of ABP, or other liability management exercises – such as bond exchanges or buy-backs – reduce the amount of legacy LIBOR bonds outstanding.

15 Even so, the use of consent solicitations to transition the *whole* of the legacy bond market – involving vanilla FRNs, covered bonds, capital securities and securitisations – would be a long, complex and expensive process and would not necessarily be successful. This is because individual bonds – which are freely transferable – are often held by many (eg several thousand) investors, and consent thresholds are generally high. While the majority of FRNs denominated in sterling are governed by English law, the greatest proportion of legacy FRNs referencing LIBOR are denominated in US dollars and governed by US federal securities laws, where consent thresholds of 100% are common, raising questions about whether consent solicitation in the US would be practicable.

16 In the UK, a common industry code, which issuers and investors could be invited to support, might help to streamline the process, if it included agreed adjustment terms for transitioning LIBOR to SONIA. But individual bond contracts would still need to be amended bond by bond. And, as the process would be voluntary, it might leave a rump of unconverted bonds still referencing LIBOR. So while consent solicitations – or other liability management exercises – should help to reduce the scale of the legacy sterling LIBOR bond problem, they are not currently expected on their own to solve it.

(ii) Continuing to use LIBOR for legacy bonds

17 A potentially complementary option would be for the FCA (as regulator of LIBOR) to allow the continued publication of LIBOR for legacy products which are not otherwise capable of transitioning away from LIBOR, when the usage of LIBOR is restricted for new transactions.[21] For example, if a sufficient number of banks is no longer willing to submit quotes for LIBOR after the end of 2021, the FCA may determine that LIBOR is no longer representative of its underlying market.[22] In certain circumstances, the EU Benchmarks Regulation (BMR) may permit continued publication and use of a benchmark to allow for orderly cessation and to avoid frustration of financial contracts, but restrict the use of the benchmark by supervised entities only to contracts that already reference the benchmark.[23] The FCA has stated that "the potential solution of allowing continued publication of LIBOR for use in legacy instruments that do not have mechanisms to remove their dependence on LIBOR could help to prevent otherwise unavoidable disruption in cash markets."[24]

18 If LIBOR is no longer sufficiently representative for use in new transactions, the question arises whether the method of calculating LIBOR could be modified to allow

20. See: Charlotte Bellamy, *Legacy Sterling LIBOR Bonds,* ICMA Quarterly Report, Second Quarter 2019.

21. Clearly, issuers and investors will wish to be made aware of all the different options that might be available before reaching a decision on transitioning away from LIBOR.

22. The BMR (Article 23) requires the FCA to make an assessment of LIBOR's representativeness in certain circumstances, such as the departure of one or more panel banks or, in any event, every two years.

23. The problems of retiring a benchmark that is no longer able to meet the requirements of the BMR without causing systemic disruption may be considered further during the review of the BMR which is due by 1 January 2020.

24. Edwin Schooling Latter, Director of Markets and Wholesale Policy at the FCA*: LIBOR Transition and Contractual Fallbacks*, ISDA Annual Legal Forum, 28 January 2019.

for its continued publication for use in legacy transactions for a longer period under the BMR: eg by modifying LIBOR so that it consists of SONIA (or term SONIA) plus an adjustment spread. If the method of calculating LIBOR were modified, it would be necessary to ensure contractual continuity so that references to LIBOR in legacy bonds could remain unchanged: eg modified LIBOR would need to be published on the same screen page at the same time each day. The critical question is whether modified LIBOR would be treated in the market as sufficiently similar to the LIBOR rate which it replaces. This would be a challenging test, both in economic and in legal terms.

19 In the euro area, the current focus is on replacing EONIA by €STR. From 2 October 2019, the method of calculating EONIA will be defined as €STR plus a fixed adjustment spread for a transition period until 3 January 2022.[25] In addition, the method of calculating EURIBOR is being modified to a hybrid methodology to achieve compliance with the BMR.[26] There are no plans to replace EURIBOR, at least at this stage, but it is planned to ensure that any new EURIBOR transactions should incorporate fallbacks to €STR (or term €STR).[27]

Cash market adjustment spreads

20 If LIBOR were to be replaced by SONIA for outstanding legacy bonds, a cash market adjustment spread would be needed to address the differences between LIBOR and SONIA: it would be needed to amend bond contracts by way of consent solicitation from LIBOR to SONIA; and it would also be needed if the method of calculating LIBOR were to be modified so as to consist of SONIA (or term SONIA) plus an adjustment spread. In addition, a cash market adjustment spread would be needed for fallbacks to SONIA in any new transactions referencing LIBOR maturing beyond the end of 2021. These are still taking place, particularly in the loan market.

Derivative hedges

21 Where derivatives are used to hedge legacy bond contracts which fall back to a fixed rate when LIBOR is permanently discontinued, there may be a hedging mismatch when LIBOR is discontinued, as derivatives will fall back to compounded SONIA plus an adjustment spread, under ISDA's proposed cessation trigger. The FSB OSSG has asked ISDA to consult on an additional pre-cessation trigger that would apply to derivative transactions if LIBOR is declared unrepresentative by the FCA and is no longer used for new transactions.[28] Such a declaration should not affect most legacy LIBOR bond contracts, as most fallbacks do not contain provisions relating to unrepresentativeness. They would fall back to a fixed rate only when LIBOR is no longer published. As with the proposed cessation trigger, a pre-cessation trigger which applies to derivative contracts but not the related cash products is also likely to give rise to a hedging mismatch.

Regulatory issues

22 The transition from LIBOR to SONIA in the bond market may also raise regulatory issues:

- In the case of prudential regulation, it is important that the change of benchmark (ie from sterling LIBOR to SONIA) does not itself have regulatory consequences; or, if there are regulatory consequences, that these can be addressed: if there is a change of benchmark, an existing security should not have to be reclassified as a new security.
- In the case of conduct regulation, it is important that the change of benchmark does not give rise to mis-selling or other conduct risks.
- After Brexit, as a UK-based administrator currently registered in the EU, the IBA will need to be registered in the UK and also achieve recognition, endorsement or

25. From 2 October 2019, "EONIA will be calculated as the €STR plus a spread. On 31 May 2019, the ECB provided the market with a one-off calculation of the spread between the €STR and EONIA that will be used for the calculation of EONIA. This spread will remain fixed at the level computed and published by the ECB until the final discontinuation of EONIA." Source: European Money Markets Institute (EMMI), 31 May 2019. The value of this one-off spread, as computed and published by the ECB, is 0.085% (ie 8.5 basis points).

26. On 25 February 2019, the European Commission stated that "the EU institutions agreed to grant providers of "critical benchmarks" (like EURIBOR) two extra years until 31 December 2021 to comply with the new BMR requirements." The final amendment to the BMR to incorporate this extension to the transition period is pending publication in the EU *Official Journal*. On 3 July, EMMI was granted an authorisation by the Belgian FSMA under the EU BMR for the administration of EURIBOR.

27. Political agreement has been reached to extend the mandatory contribution period from two to five years. The final amendment to the BMR to incorporate this extension is pending publication in the EU *Official Journal*.

28. "The FCA has publicly stated that market participants may prefer to include a trigger "based on an announcement of non-representativeness rather than triggers based on cessation alone" and the FSB OSSG expressed a similar view in a letter to ISDA noting that such a trigger "would offer market participants with LIBOR-referencing derivative contracts the opportunity to move to new benchmarks rather than remain on a non-representative LIBOR rate".": US ARRC *Recommendations Regarding More Robust Fallback Language for New Issuances of LIBOR FRNs*, 25 April 2019.

equivalence in the EU27 in order for LIBOR to be used in the UK and EU27 after the end of the transition period under the BMR.

- EU law is due to be brought "onshore" into law in the UK on Brexit. In the case of the BMR, it is not yet clear whether regulatory equivalence will be negotiated between the EU27 and the UK to take effect after the end of any Brexit transition period.

23 In the UK, a task force chaired by the FCA is considering these regulatory issues. Accounting and tax issues are being addressed in parallel in conjunction with the IASB.[29]

Supervision

24 Last autumn, the PRA and FCA in the UK sent a "Dear CEO" letter[30] to the chief executives of the banking and insurance firms they supervise in order to raise awareness of the need to prepare for the transition to risk-free rates.[31] Supervisors in other jurisdictions do not necessarily use the same mechanism, but their objective is the same.[32] That is to check on a regular basis that the firms they supervise are identifying and quantifying their LIBOR exposure and planning ways to reduce it by transitioning to risk-free rates, taking account of prudential and conduct risks during the transition to risk-free rates and at the cliff-edge when LIBOR is discontinued. Firms also have a responsibility to train their staff and communicate with their clients.

International coordination

25 International coordination of the transition to risk-free rates, which is being overseen by the FSB OSSG, is of great importance for international market firms and their clients, many of whom have operations in all the major IBOR jurisdictions. There are some differences of approach to the transition between national jurisdictions: some risk-free rates are secured (like SOFR in the US and SARON in Switzerland) and some unsecured (like SONIA in the UK and €STR in the euro area); and in the UK and US the focus is on replacing LIBOR, whereas the focus in the euro area is on replacing EONIA with €STR and defining fallbacks for EURIBOR rather than replacing it, at any rate at this stage. But while there is not a "one-size-fits-all" approach to the transition in different national jurisdictions, the direction of travel towards risk-free rates is much the same.

26 Attention so far has been on the transition from IBORs to risk-free rates in national currencies under national law (eg sterling LIBOR to SONIA under English law and US dollar LIBOR to SOFR under US federal securities laws). But it will be important also to consider in more detail the transition to risk-free rates of foreign currencies under national law (eg US dollar LIBOR under English law).

29. The FSB OSSG is also coordinating work on regulation, accounting and tax issues globally.

30. *Firms Preparations for Transition from LIBOR to Risk-Free Rates:* Letters to the CEOs of banking and insurance firms from the Prudential Regulation Authority and Financial Conduct Authority, 19 September 2018.

31. Andrew Hauser, Executive Director Markets, Bank of England: "To summarise the key conclusions of our first "Dear CEO" exercise: you need to have identified and quantified your LIBOR-linked exposures; you need a granular transition project plan, including an identified responsible executive covered by the Senior Mangers Regime (where applicable); you need to stress test that plan against the base case of LIBOR ceasing to exist at end-2021; you need to identify and manage your prudential and conduct risks; and you need to engage with the work of the relevant market working groups": *Join the Revolution: Why It Makes Business Sense to Move on from LIBOR,* 27 June 2019.

32. In the US, see the remarks by Randal Quarles, Vice Chair for Supervision, Board of Governors of the Federal Reserve System: "The Federal Reserve will expect to see an appropriate level of preparedness at the banks we supervise, and that level must increase as the end of 2021 grows closer": *The Next Stage in the LIBOR Transition,* New York, 3 June 2019. See also, for example, the letter from the Hong Kong Monetary Authority, 5 March 2019, and the letter from the Australian Securities Commission, 9 May 2019.

The BMR and third country benchmarks

27 Any benchmark administrator based outside the EU that provides benchmarks used in the EU by a supervised entity will be subject to the third country regime requirements of the BMR and thus defined as a third country administrator. The BMR exempts benchmarks administered by central banks and other public authorities.

28 Under the BMR, EU users of benchmarks can only use third country benchmarks registered on the ESMA list of eligible third country benchmarks. There are three routes for a third country benchmark to be included in the ESMA register: equivalence between a third country and the EU; or recognition by a competent authority of an EU Member State; or endorsement, under which an authorised EU-based benchmark administrator can apply to an EU competent authority to endorse a third country benchmark administrator's benchmarks.[33]

29 On 25 February 2019, political agreement was reached in the EU to extend the transitional period for third country benchmarks to comply with the BMR requirements until 31 December 2021. This will give the EU and non-EU regulators further time to work towards equivalence for, or for administrators to achieve recognition or endorsement of, third country benchmarks for use in the EU.[34]

Market awareness

30 International market awareness of the need to prepare for the transition to risk-free rates has increased, but there is much further to go, not only in the case of market firms, but also their clients. The authorities themselves are playing a major role in raising market awareness: eg through public speeches, events and their supervisory role. ICMA and other trade associations play a complementary role in raising market awareness among their members: eg through published articles, conference calls and events, such as the risk-free rate panel of senior officials from the FCA, the European Central Bank, the Federal Reserve Bank of New York and the Swiss National Bank at the ICMA AGM and Conference in Stockholm on 17 May 2019. ICMA has also posted, on its website, a dedicated webpage on benchmark reform and the transition to risk-free rates.

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33. See also: Patrik Karlsson, *The Impact of the EU BMR on the Use of Third Country Benchmarks*, ICMA Quarterly Report First Quarter 2019.

34. See also: David Hiscock: *Interest Rate Benchmarks:* ICMA Quarterly Report Second Quarter 2019.