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# Risk-free rates: bond market conventions

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RFR

## Introduction

Considerable progress has already been made with the adoption of SONIA and SOFR in new public issues of FRNs over the past year and, in each market, certain market conventions have developed. These market conventions have evolved from, *inter alia*, existing conventions in the overnight index swaps market, the effective Federal Funds market and investor preference.

## SONIA conventions

All recent new issues of SONIA-linked FRNs have used SONIA compounded daily in arrear for the relevant interest period. This requires observing SONIA on a daily basis over a period corresponding to an interest period, and compounding it over that period. The practice of compounding daily SONIA in arrear is consistent with the current practice in the UK swap market, which also references compounded daily SONIA in arrear. Using this convention ensures that liquidity is focused on an existing practice rather than fragmenting it by using a simple or weighted average.

A daily SONIA rate is available from the Bank of England and on licence from other providers, but market participants may need to calculate the compounded rate over the relevant period, and to reconcile it with other parties for each coupon payment. Market solutions are however emerging to facilitate this calculation.

*Margin treatment:* All recent new issues of SONIA-linked FRNs have added the margin for the interest period to the compounded SONIA rate for the same period (ie the margin itself is not compounded). This is a relatively straightforward method of constructing and calculating the coupon, and makes it easier for all parties to independently verify the coupon amount.

*Lag period mechanism:* Interest on SONIA-linked FRNs is paid on each interest payment date, which falls at the end of each interest period – so far, so usual. However, a certain number of days is required before the interest payment date to ensure that operationally, the payments flow smoothly (involving the issuer, the Calculation Agent, the Paying Agent and the ICSDs); this includes calculating, agreeing and reconciling the SONIA rate and the coupon payments, and making the actual coupon payments to the accounts of investors on the interest payment date.

In order to accommodate this period of time required from the operations point of view, the period over which SONIA is observed begins a number of London Banking Days before the relevant interest payment date and ends a number of London Banking Days before the next following interest payment date. In the SONIA market, this has consistently been 5 London Banking Days. So in respect of each interest period, the SONIA rate is observed (and compounded) each day over a period which corresponds to that interest period *in terms of number of days in the interest period*, but does not match the actual period itself.

This lag period mechanism most closely matches practice in the derivatives market, which operates with a lag period for settlement, with future interest accrual from trade date to settlement date being reflected in *traded* prices. The mechanism also ensures that the parties know the coupon amount *before* the interest payment date even though the rate is retroactive, and captures *all* rate changes over a period which corresponds to the interest period in terms of number of days.

The Working Group on Sterling Risk-Free Reference Rates has released a discussion paper on SONIA Market Conventions. In the resulting *Statement from the Working Group and Summary of Responses*, the RFR Working Group stated that the 5 day lag period is "viewed as sensible by the Working Group. .... It balances the need to capture realised movements in SONIA with a suitable period to complete operational processes." The RFR Working Group also considered that the 5 day lag period "has minimal convexity impact", so making it easier to estimate the change between the bond price and the yield.

## SOFR conventions

It is also important to consider the SOFR conventions. Overnight SOFR has been used in the US FRN market. But there have so far been two main differences in market

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conventions between SONIA in the UK and SOFR in the US: whereas compounding has been used in the SONIA market, simple averaging has been used in the SOFR market; and whereas a lag mechanism has been used in the SONIA market, a series of different mechanisms has been used in the SOFR market.

Predominantly, the mechanism which has been used in the SOFR market is the lockout, which operates such that interest is fixed for the last few (typically, 4) days of the interest period at the previous day's rate. That fixed rate is then applied for the final 4 days of the interest period. The *actual realised* 4 rates are not used at all: ie they do not roll over and are therefore not used in the calculation of the rate for the next following interest period.

Although this lockout mechanism ensures that the parties know the coupon amount before the interest payment date, it is not a feature in the UK market. And because the rate for the last 4 days is disregarded, the upside and/or downside of any potential volatility over those last 4 days in each interest period will also be disregarded.

Some recent SOFR-linked FRNs have used compounded SOFR with a 5 day lag, and one has used compounded SOFR with a 2 day lag. (In that particular case, the issuer was also the Calculation Agent and thus efficiencies were able to be made in terms of the timing of the operational steps.)

In addition, some recent SOFR-linked FRNs have used another mechanism, where interest is paid 2 days after the end of the interest period (except for the final interest payment, which uses a 2 day lookback mechanism that assumes the SOFR rate stays the same for those 2 days). With this mechanism, other than for the final interest payment on maturity, neither a lag nor a lockout is necessary so that the SOFR observation period and the corresponding interest period are exactly aligned.

## Convergence of conventions

Papers have been released by the RFR Working Group in the UK, by the ARRC in the US and by the FSB, each of which sets out the various conventions which have been used in the respective markets, and considers the opportunities for future international alignment between them. The RFR Working Group have stated that "while there appears to be a basis for consistent conventions across SONIA products based on existing conventions, further work could be done to achieve the call for alignment across jurisdictions".

Alignment between the different conventions *in terms of compounded average versus simple average* is an ambition on the part of the various working groups and authorities: according to the ARRC's and FSB's User's Guides, "from an economic perspective, compound interest is the more correct convention", and the ARRC's Floating Rate Notes Working Group has expressed a preference for compounded SOFR.

It is not yet clear whether the lockout mechanism, the lag mechanism, or the payment delay mechanism will be adopted in the US SOFR-linked FRN market, and if the lag were adopted, what the standard number of days in the lag would be (2 days, 5 days or other).

But ultimately, details such as the number of days in the lag are not necessarily the focus; the most important thing is that the different markets understand the different conventions and coalesce around one set – such as using compounding instead of simple averaging, and using a lag mechanism, as opposed to a lockout. Whether or not they do so remains to be seen.

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