



Report by the working group on **euro risk-free rates**

On the transfer of EONIA's cash and derivatives markets liquidity to the €STR

19 February 2020

Contents

1	Executive summary	3
2	T+1 versus T+2 settlement for derivatives and money market transactions	7
3	Transition from EONIA to €STR derivatives	8
3.1	Establishing a liquid €STR derivatives market	8
3.2	Impact of the EONIA/€STR transition on the swaptions market	10
4	Transition from EONIA to €STR cash products	12
4.1	Current EONIA market and its liquidity	12
4.2	Drivers and challenges of transition	14
5	How to assess whether the €STR derivatives market is sufficiently liquid	18
6	Appendix	20
6.1	BIS dataset	20
6.2	EMIR dataset	20
6.3	MMSR dataset	21

1 Executive summary

The working group on euro risk-free rates – which recommended replacing the euro overnight index average (EONIA) with the new risk-free rate, the euro short-term rate (€STR) – is assisting the market in the smooth transition from EONIA to the €STR.

To date, the working group has issued various recommendations for this transition¹ and has analysed its impact from different perspectives. The outcome of this analysis is detailed in several reports which include recommendations on how to smoothen the transition to the €STR before EONIA is discontinued on 3 January 2022.²

This report supplements the working group's "[Report on the impact of the transition from EONIA to the €STR on cash and derivatives products](#)" published in August 2019³ (the Report) and aims to:

- support the smooth transition from EONIA to the new €STR, taking advantage of the liquidity already present in the EONIA cash and derivatives market;
- provide guidance on how to ensure a liquid €STR cash and derivatives products market;
- provide clarifications around specific topics that have been discussed since publication of the above report.

The scope of this report is limited to considerations and recommendations to support a smooth and swift transfer of the liquidity from the current EONIA market to the new €STR market.

Key recommendations/observations

Chapter 2 – T+1 versus T+2 settlement for derivatives and money market transactions

Follow-up on Recommendation 4 for derivatives and money market transactions included in the Report:

- 1) The working group concluded that no change in settlement standards was required. T+1 settlement can still be used for €STR and EONIA-based derivatives and money market transactions where this is

¹ [Recommendations of the working group on euro risk-free rates on the transition path from EONIA to the €STR](#), March 2019.

² [Report by the working group on euro risk-free rates on the impact of the transition from EONIA to the €STR on cash and derivatives products](#), August 2019.

[Report by the working group on euro risk-free rates on the risk management implications of the transition from EONIA to the €STR and the introduction of €STR-based fallbacks for EURIBOR](#), October 2019.

[Report by the working group on euro risk-free rates on the financial accounting implications of the transition from EONIA to the €STR and the introduction of €STR-based fallbacks for EURIBOR](#), November 2019.

[Recommendations of the working group on euro risk-free rates on the EONIA to €STR legal action plan](#), July 2019.

[Report by the working group on euro risk-free rates on €STR-fallback arrangements](#), November 2019.

³ Press release: [Private sector working group issues recommendations on the transition from EONIA to €STR for cash and derivatives products](#), August 2019.

operationally feasible for the counterparties involved. However, market participants should make sure that client infrastructure can meet these requirements in order to avoid any subsequent frictions and operational issues. They should otherwise use T+2 settlement. This evaluation is especially necessary for clients that do not use central clearing (e.g. corporates).

Chapter 3 – Transition from EONIA to €STR derivatives

Chapter 3.1 – Establishing a liquid €STR derivatives market

- 2) The working group strongly recommends all market participants to start replacing EONIA products with €STR products as soon as possible. With major central counterparties (CCPs) having set their discounting switch date on or around 22 June 2020⁴, it is important that market participants are ready to hedge the corresponding €STR exposure. Also, a liquid €STR derivatives market is a precondition for forward-looking term structure methodologies which may be necessary for the implementation of EURIBOR fallback solutions.
- 3) The transition from EONIA to €STR products should be seamless in terms of product characteristics and defaults.
- 4) Market participants should initially focus on a basic set of derivatives products and then establish operational readiness for this set.
- 5) Nettability (compression) of the €STR and EONIA should be considered, especially at CCP level.
- 6) In order to accelerate the transition process, the working group encourages market-makers to proactively price in the €STR rather than EONIA as their default. At some point, this is likely to entail switching off broker pages that quote EONIA IRS pricing. Market participants should still be able to obtain an EONIA price on request, but establishing €STR-based pricing as the default as soon as possible could benefit the transition process.

Chapter 3.2 – Impact of the EONIA/€STR transition on the swaptions market

- 7) The working group will conduct a public consultation in order to evaluate possible approaches, i.e. whether recommendations from the working group would be of assistance and if so, what should be the recommended approach.

Chapter 4 – Transition from EONIA to €STR cash products

- 8) EONIA will cease to be published as of 3 January 2022. It must therefore be made clear to all stakeholders that continuing to reference EONIA in any old or new contracts with maturities beyond this date would entail significant risks. The working group makes the following recommendations for achieving these objectives.

⁴ [LCH Circular No 4052](#), 27 September 2019.
[Eurex Clearing Circular 096/2019](#), 23 October 2019.
[CME announcement](#), 31 January 2020.

- a) All stakeholders should communicate with each other and with their customers and end users. Communication could be facilitated through the management of central and bilateral collateral agreements by market participants and CCPs, the timely publication of the €STR and EONIA by their administrators and possible contractual changes (International Swaps and Derivatives Association (ISDA), national/European framework contracts, etc.), as well as support from public sector issuers. European and local associations are recommended to disseminate information on the reform and related impacts and to explain current and future changes so as to help all categories of market participants such as corporate customers, investors and end users in the transition to the new €STR market. Working group members could seek communication support from the relevant public authorities and coordinate communication actions through the “ambassadors’ framework”.⁵
- b) Market participants should reduce their EONIA-linked legacy exposure as soon as possible in order to adequately manage the related risks and facilitate the market transition from the old to the new benchmark rate. The working group has already provided guidance and recommendations on operational and legal aspects which are available on the working group’s website.⁶
- 9) The EONIA market is important for the functioning of the short-term investment sector. Several market players such as money market funds, asset managers, banks, corporates and other market participants use this market to lend or borrow money. The working group cannot predict the development of the market referencing the overnight rate, in particular in comparison with the market based on term rates, but strongly recommends market participants to price and issue new instruments previously linked to EONIA in the new benchmark rate – the €STR.⁷
- 10) The working group recommends all market participants (buy-side, sell-side, trading platforms, clearing houses, etc.) to screen and test their systems to ensure that they can manage products and instruments referencing the €STR, which may require the use of different conventions and interest calculation methods.
- 11) For a smooth transition, the working group believes that €STR products should closely follow the specifications of the current EONIA products. From the outset, market participants have largely attributed the technical success of the launch of the €STR to the informal consensus that the rules and calculation methods applied to EONIA have been duplicated to the €STR when feasible. This market consensus is central to the transition from EONIA to the €STR for related cash and derivatives instruments.

⁵ For more information, please see [Presentation of Subgroup 7 on Communication and Education for the working group on euro risk-free rates](#), in particular slides 10-12, 4 December 2019.

⁶ [Recommendations of the working group on euro risk-free rates on the EONIA to €STR legal action plan](#), July 2019.

⁷ This recommendation should be read in conjunction with Recommendation No 9 of the Report by the working group on euro risk-free rates on the impact of the transition from EONIA to the €STR in cash and derivatives products.

Chapter 5 – How to assess whether the €STR derivatives market is sufficiently liquid

- 12) Given that the working group expects a full migration from EONIA-linked to €STR-linked products, it recommends the use of current EONIA market liquidity characteristics and details as a benchmark for building the initial target for the €STR.
- 13) In order to assess the €STR derivatives market's liquidity, the working group recommends analysing and regularly publishing the available data (details specified below).

Disclaimer

This report is not intended to provide, and should not be construed or relied on in any manner as, operational, valuation, legal, regulatory or other advice. The information included in the report has not been independently verified. It is not comprehensive and may be subject to change. The authors disclaim any obligation or undertaking to release any update of, correct, keep current or otherwise revise the content of this report. The working group does not assume any responsibility for any use to which this document may be put, including any use of this document in connection with any privately negotiated transaction.

The report discusses a variety of options to address the transition from EONIA to the €STR. Recipients of this report are responsible for making their own assessments as to the suitability of the various options discussed in the report. Recipients must continue to operate in an independent and competitive manner and they should not use the content of this report to coordinate their activities in breach of applicable law.

The authors, or any of their respective directors, officers, advisers, affiliates or representatives, shall not be deemed to have made any representation, warranty or undertaking, express or implied, as to, and no reliance should be placed on, the truthfulness, fairness, accuracy, completeness or correctness of the information and opinions contained in this document. The authors and their respective directors, officers, advisers, affiliates and representatives expressly disclaim any and all liability, whether direct or indirect, express or implied, contractual, tortious, statutory or otherwise, in connection with the accuracy, completeness and correctness of the information, for any of the opinions or factual information contained herein, for any errors, omissions or misstatements contained in this document or otherwise for any direct, indirect or consequential loss, damages, costs or prejudices whatsoever arising from the use of this document.

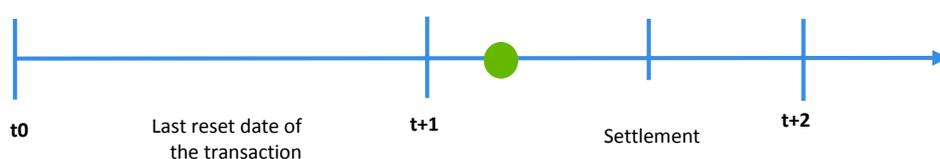
The authors of this document may provide to any third party (including, but not limited to, authorities, clients, associations or counterparties) opinions or advice that may differ from the content of this document.

2 T+1 versus T+2 settlement for derivatives and money market transactions

Recommendation 4⁸ in the Report was to consider T+2 settlement for derivatives and money market transactions, i.e. to settle the coupon payment on the second business day after the last fixing date, one business day after the (new) publication date of the €STR fixing.

Figure 1

€STR Derivatives Transaction



On the basis of market feedback, many market participants became aware that the initial concerns which led to this recommendation had been resolved through the necessary changes in infrastructure. The working group concluded that no change in settlement standards was required and that market participants did not need to consider adjusting the default settlement time, i.e. T+1 settlement (see figure above). However, market participants should check that client infrastructure can meet these requirements in order to avoid any subsequent frictions and operational issues. They should otherwise use T+2 settlement. This evaluation is especially necessary when dealing with clients that do not use central clearing (e.g. corporates).

⁸ The working group recommends that market participants consider adjusting the default settlement time (i.e. the lag between the last fixing date and the settlement date) in certain cases, as follows:
Derivatives/money market transactions: Currently, EONIA-related transactions are, as a rule, settled on T+1. It is recommended that market participants switch to T+2 settlement, also to accommodate international (in particular Asian) market participants' operational requirements. Please note that, for money market transactions, this may entail a one-day difference between the payment dates of the nominal and the interest.

3 Transition from EONIA to €STR derivatives

3.1 Establishing a liquid €STR derivatives market

The working group strongly recommends all market participants to start using €STR products instead of EONIA products as soon as possible. The main reasons why this transition should not be postponed until near the end of 2021 (when EONIA will be decommissioned) are set out below.

Discounting switch

Recommendation 6 in the Report encourages market participants to transition the EUR cash collateral remuneration rate as defined within their bilateral credit support annex (CSA) from EONIA to €STR flat, whereby the present value resulting from the fixed spread of 8.5 basis points over the expected collateral posting will be calculated and exchanged as an upfront compensation to be agreed bilaterally. In other words, a change to the collateral remuneration rate results in a change of the discount curve applicable to the derivatives portfolio, and the difference between the present value of the portfolio under the EONIA and €STR discounting regimes should be exchanged through a cash compensation.

A shift of a discounting curve results in value being generated on the portfolio and many market participants measure this sensitivity, commonly referred to as the discounting delta. Where the forward curve of the instruments being discounted differs from the discounting rate, firms may hedge their discounting risk through the derivatives market. For example, to hedge the discounting delta of a EURIBOR IRS discounted at EONIA, a firm can execute an EONIA/EURIBOR basis swap. This hedging need generates a significant demand for risk-free rate-based derivatives instruments.

Once bilateral CSAs begin to transition from EONIA to the €STR, market participants are expected to transition their discounting hedges, too. Clearly this will be instrumental in creating liquidity in the €STR derivatives market. Given that EONIA and €STR rates are intrinsically linked through the fixed spread, this transition is not expected to generate any additional risk, and should therefore be a smooth process.

Due to the size of exposures housed within CCPs, there is a very large discounting risk against them in the market, and the planned EONIA to €STR discounting transition with cash compensation will generate a widespread discounting risk impact. As a by-product, the amendment is likely to generate widespread awareness of the issue, spurring many market participants to align their bilateral CSA amendments with the CCP discounting change (clearing houses aim to align with a switch date on Monday 22 June 2020⁹), thereby significantly increasing the liquidity of the €STR derivatives market.

Liquid €STR derivatives market and EURIBOR fallbacks

Regarding the implementation of EURIBOR fallbacks in the contractual frameworks of all financial products that use EURIBOR as a benchmark, we identified the availability of €STR-based term

⁹ See the [minutes](#) of the meeting of the working group on euro risk-free rates on 4 December 2019, item 3.

structures as a central precondition.¹⁰ In particular, the availability of the forward-looking term structure cannot be achieved without a liquid €STR derivatives market being in place to provide the relevant price information in a reliable and transparent way.

Given the widespread use of EURIBOR, all market participants should have a generic interest in such fallback solutions becoming available for implementation as soon as possible. This would make it easier to comply with the EU Benchmark Regulation, where applicable, and reduce legal and operational risk in a worst case scenario of EURIBOR discontinuation.

In general, the main factors improving liquidity across a certain market are:

- standardisation of contracts
- post-trade data disclosure/reporting
- centralised clearing
- centralised trading.

In order to ensure a seamless transition, the product characteristics of €STR-based derivatives should, as closely as possible, match the characteristics of the existing EONIA products.

The working group recommends market participants to initially focus on the following suite of basic derivatives instruments:

¹⁰ The working group will publish additional guidance on EURIBOR fallbacks later in 2020.

Product	Description	Leg type	Start date	Liquid tenor	Frequency	Compounding	Day count convention	Clearing	
Swaps	STIR	EONIA spot	Fixed	Spot	0 to 12m	Annual	Compounded	Money market - ACT / 360	LCH / Eurex
		STIR swaps	Float: EONIA						
	EONIA ECB dated swaps	Fixed	Forward start (next three ECB announcements out of six are the most liquid)	0 to 12m	Annual	Compounded	Money market - ACT / 360	LCH / Eurex	
		Float: EONIA							
	LTIR	Spot swaps vs EONIA	Fixed	Spot	up to 30Y	Annual	Compounded	Money market - ACT / 360	LCH / Eurex
			Float: EONIA						
IMM starting swaps vs EONIA		Fixed	IMM (next two IMM dates out of four per year are the most liquid)	up to 10Y	Annual	Compounded	Money market - ACT / 360	LCH / Eurex	
Forward starting swaps	Fixed	Forward start	up to 30Y	Annual	Compounded	Money market - ACT / 360	LCH / Eurex		
	Float: EONIA								
Basis	STIR / LTIR	EONIA vs 3M EURIBOR*	Float: EONIA	Spot	up to 30Y	Annual	Compounded	Money market - ACT / 360	LCH / Eurex
			Float: EURIBOR 3M			Quarterly	Compounded		
	Asset swaps	Futures Asset swap spreads vs EONIA	Fixed	Forward start on future contract maturity	up to 30Y	Annual	Compounded	Money market - ACT / 360	LCH / Eurex
			Float: EONIA						
		Government bond futures	Spot						

In the first instance, market participants need to work towards operational readiness in €STR, starting with the product suite above. CCPs should reflect and consider the development the nettability (compression) of the €STR and EONIA.

In order to accelerate the transition process, the working group encourages the market-makers to proactively price in the €STR rather than EONIA as their default. At some stage, this is likely to encompass switching off broker pages that quote EONIA IRS pricing, etc. Of course market participants should still be able to obtain an EONIA price on request, but establishing €STR-based pricing soon could benefit the transition process.

3.2 Impact of the EONIA/€STR transition on the swaptions market

The euro-denominated swaptions market faces challenges arising from the transition by clearing houses from an EONIA to €STR discounting regime. In the current situation this could result in a value change for those euro-denominated swaptions that expire after the discounting switch date.

The discount rate for derivative cash flows is typically linked to the collateral remuneration rate of the netting set the trade belongs to. In the case of swaptions with physical or cash collateralised settlement, discount factors are part of the settlement formula used to determine the amount to be paid or received on the settlement date. Swaptions, although traded bilaterally, are often settled with reference to clearing house prices. This means that the collateral remuneration rate under the CSA governs the valuation of the position until expiry and upon expiry; the settlement value of the swaption is therefore related to the clearing house discount rate.

Typically, the unanticipated change of eligible collateral or the collateral remuneration rate results in a valuation change, which may be caused either by a change in the CSA specific discounting curve or by a change in the discounting curve used to compute the settlement amount. In this context, the change in discounting regime by clearing houses that affects the swaption settlement amount is problematic as most CSAs do not include specific triggers for compensation payments in such an event. Equally, the legal definitions governing swaption contracts do not currently allow for a situation in which the clearing house may change its discount rate.

In practical terms, this value change will likely result in hedge mismatches whereby a swaption hedged with an interest rate swap to neutralise the interest rate risk might result in residual risk. On the discounting switch date, the swap used to hedge the swaption, assuming it is eligible for clearing, would be subject to compensation¹¹ to offset the valuation change resulting from the change in clearing house discount rate. By contrast, the present value of the swaption, assuming it expires after the discounting switch date, should now already reflect a €STR discounted swap resulting in a valuation change that is equal and opposite to that of the swap, all else being equal. However unlike the swap, it would not benefit from a compensation payment to offset this valuation change. In effect, this creates a mark-to-market gain or loss depending on the direction of the market participant's position, unless a bilateral agreement between the parties introduces a compensation amount to offset the discounting regime change that affects the swaption settlement formula.

The working group would like to make the market aware of the possible value change for those euro-denominated swaptions that expire after the clearing houses' EONIA/€STR discounting switch date. It will perform a public consultation on this matter over the next few weeks in order to seek input from market participants and, based on it, evaluate possible approaches, i.e. whether recommendations from the working group would be of assistance and if so, what should be the recommended approach.

Please also note that the International Swaps and Derivatives Association (ISDA) is working on new swaptions templates in order to address the issue of which discount rate applies at maturity and so hopefully prevent new swaptions being traded with the above-mentioned issues.

¹¹ [LCH Circular No 4052](#), 27 September 2019.
[Eurex Clearing Circular 096/2019](#), 23 October 2019.
[CME announcement](#), 31 January 2020.

4 Transition from EONIA to €STR cash products

4.1 Current EONIA market and its liquidity

As already highlighted in the Report published in August 2019, the EONIA market is one of the most important for the banking and short-term investments. It consists of a wide range of products and instruments used by different market participants, such as banks, asset managers, pension funds, insurance companies, corporations, investors and other end users.

EONIA-referencing instruments¹² are particularly important for money market funds (MMFs)¹³, a type of collective or mutual fund that invests in short-term debt instruments and provides funding for financial institutions. They purchase short-term assets, such as money market instruments issued by banks, governments or corporations. These instruments only qualify as MMF instruments if their residual maturity does not surpass 397 days (short-term MMF) or two years (standard MMF). MMFs constitute a considerable source of short-term financing for financial institutions, corporations and governments. Importantly, the MMFs in the EU have systemic relevance as they manage assets worth approximately €1 trillion, and make up around 15% of the EU's funds industry. EU-domiciled MMFs are mostly based in France, Ireland and Luxembourg, which together represent more than 95% of the market.¹⁴

The French MMFs are the largest in the European MMF industry and currently have the most significant holdings of French short-term instruments.¹⁵ MMFs set their performance targets against the EONIA, compounded using the overnight indexed swap (OIS) method. To do this, they can either hedge a fixed rate issue with an OIS-EONIA swap or invest in a note issued directly against EONIA-OIS (plus a margin). The advantage of the direct variable issue is the economy of a swap and this is why a large proportion of these notes are printed directly by issuers under a floating rate. The calculation method for the coupon is anchored to the EONIA-OIS calculation, to ease the hedging/de-hedging strategy.

Moreover, the liquidity of these papers is important for market participants who are used to being able to adjust their needs on the secondary market when needed (e.g. selling for investors and increasing an issue for borrowers).

In the current euro-denominated market, long-term debt issuances linked to EONIA or medium-term debt other than medium-term note programmes is extremely limited. In October 2019, several

¹² MMFs mainly trade commercial paper, certificates of deposit, negotiable European commercial paper (NEU CP – formerly known as French commercial papers and certificates of deposit), euro commercial paper and medium-term note (MTN) programmes (maturity >12 months). The MTN market is mainly represented by euro medium-term note programmes with an interbank offered rate (IBOR) index and, to a minor extent, by negotiable European medium-term note (NEU MTN) programmes that reference both EONIA and IBORs.

¹³ See Chapter 4.5 of the Report.

¹⁴ See European Parliamentary Research Service (2016), "[Money Market Funds: Measures to improve stability and liquidity](#)", February.

¹⁵ See "[Statistical reports and analysis](#)" on the website of the Banque de France.

issuances referencing the €STR were offered to the market but it is difficult to predict how an alternative €STR debt market can evolve in the future compared with the current market with its two benchmark rates: EONIA and EURIBOR.

Another relevant instrument is swingline loans.¹⁶ These are loans that are typically granted to support a borrower's commercial paper programmes. Swinglines denominated in euro mostly refer to EONIA plus a spread. They can usually be requested on a same-day basis for very short drawing periods (typically one to seven days). Swingline loans provide borrowers with access to relatively large sums at very short notice. They tend to be provided as backstops for commercial paper programmes and are not generally expected to be drawn. Swingline loans are not typically monitored by data providers (such as Bloomberg or Dealogic), making it difficult to accurately describe their volumes even though they provide an important source of liquidity for companies.

Swingline loans which are documented as part of a syndicated loan are typically based on the Loan Market Association (LMA)'s recommended form documentation. The LMA published a guidance note¹⁷ in October 2019 which directs readers to the working group's recommendations for the transition from EONIA to the €STR included in the Report and drafting suggestions for referencing the €STR in the context of LMA recommended form documentation.

Regarding floating rate repos¹⁸, the International Capital Market Association's European Repo and Collateral Council has published recommendations¹⁹ for repo market best practices to address the transition from EONIA to the €STR. These include that the interbank market should transact purely on a fixed rate basis ("classic repo") and that it should no longer use floating rate repos, which are only used in a minority of transactions in any case. Nevertheless, in the case of non-interbank transactions (such as dealer-to-client) firms will potentially continue to agree to transact repos on a floating rate basis. It is clearly understood that, consistent with the recommendations of the working group, market participants should replace EONIA with the €STR in the context of any such non-interbank floating rate repos, making the €STR their standard reference rate by the time that the €STR transition period ends at the end of 2021. While this has led to a significant fall in the overall volume of floating rate repos, as the interbank market hitherto accounted for the majority of such transactions, this transition process should lead to growth in the use of the €STR in non-interbank repos mirrored by a fall in the use of EONIA.

There are some retail products²⁰ linked to EONIA (e.g. bank accounts, loans and deposits) for which the transition should be managed appropriately. Unfortunately, there are no unique statistics at the European level that enable their volumes to be assessed, but these products are an integrated part of the transition to the €STR as they represent a relevant share of the instruments sold or bought by market participants and accounted for on their balance sheets.

¹⁶ See Chapter 4.4 of the Report.

¹⁷ See LMA (2019), "[€STR publication and changes to EONIA](#)".

¹⁸ See Chapter 4.3 of the Report.

¹⁹ See ICMA (2019), "[Repo market best practice with respect to the transition from EONIA to €STR](#)".

²⁰ See Chapter 4.4 of the Report.

4.2 Drivers and challenges of transition

In this section, the working group analyses the possible impediments or aspects that might need to be resolved to facilitate the shift of the current EONIA-referencing market to the €STR.

4.2.1 Stakeholder coordination and communication

As already outlined, EONIA will cease to be published as of 3 January 2022. It must therefore be made clear to all stakeholders that there are significant risks in continuing to reference EONIA in any legal contracts with maturities beyond this date. Every institution should review all contracts referencing EONIA and assess the fallback language that is either currently in place or needs to be introduced in order to minimise both legal and economic risks. The continued support of trade associations is critical, whether in providing a standardised overall language or for a specific currency block or individual countries depending on the product and market.

However, in addition to introducing robust fallback language into contracts, all stakeholders are strongly recommended to consider, where possible, the transition of legacy business before 31 December 2021. The publication of the €STR started in October 2019; since then it has been possible to reference the new benchmark in contracts. Many institutions have already begun entering into new transactions referencing the €STR in the derivatives market and in some cash markets. The working group therefore sees limited impediments to all institutions beginning the transition process immediately.

To achieve this objective, all stakeholders must communicate with each other. This could involve the management of central and bilateral collateral agreements, the timely publication of the €STR and EONIA by their administrators, and possible contractual changes (ISDA, national/European framework contracts, etc.), as well as support from public sector issuers and national competent authorities.

Every institution is advised to communicate the following to users of EONIA in those transactions maturing beyond 2021:

- a) The economic risk they face by not transitioning away from EONIA or embedding robust fallbacks.
- b) Clear and transparent documentation and, where possible, standardised language for a specific market.
- c) Mechanisms to transition away from EONIA with clear, transparent and, where possible, standardised costs associated with the transition.
- d) Finally, it is advisable that the process of transition is monitored across products, both at the institutional level and, if possible, across the market. Monitoring the continued volume of new transactions referencing EONIA may help to highlight any additional impediments to transition.

4.2.2 Education of market participants to ensure market readiness

European and country associations are recommended to disseminate information about the reform and its related impacts widely, and to explain current and future changes in the market in order to facilitate the inclusion of all categories of market participants, such as corporate customers, investors and end users, in the transition to the new €STR market.

The new subgroup 7 national benchmark communication representatives (“ambassadors”) could potentially be supported by the relevant public authorities in coordinating their communication with the national associations.

4.2.3 Reduction of legacy exposure

For legacy contracts referencing EONIA and maturing after December 2021, market participants should consider replacing EONIA as a primary rate as soon as possible.

Alternatively, they should embed robust fallback clauses referring to the recommended fallback rate for EONIA into the contracts. The working group has already recommended using the €STR plus the spread as the EONIA fallback rate for all products and purposes.²¹

With reference to swingline loans, market participants should be aware of the operational considerations set out in the Report published in August 2019.

4.2.4 Use of the €STR by market participants

Market participants and end users that are currently using EONIA-based products need to consider transferring their positions to €STR-based products in a timely manner. For all new contracts²² with maturity dates going beyond 31 December 2021, which could still use the EONIA, it is important that all stakeholders understand the benefits of them directly using the €STR. It should be more efficient and reduce costs associated with triggering fallback clauses and renegotiating contracts.

The issuers of commercial papers, NEU MTNs and other cash products linked to the new rate play a vital role in the transition from EONIA to the €STR. An offer of €STR-referencing papers instead of EONIA-linked ones should help stimulate demand in the market and facilitate the transition.

Moreover, large financial institutions that price OIS and NEU CPs/NEU MTNs should show €STR prices to all their counterparties for both instruments in order to demonstrate the availability of the underlying and hedging instruments and contribute to increased transparency.

Financial institutions are encouraged to use the overnight benchmark for cash-based transactions if there is either a demand from their users or a commercial opportunity, e.g. if a bank can propose a new product in the market. The working group cannot predict how the market referencing the

²¹ See ECB (2019), “[Recommendations of the working group on euro risk-free rates on the EONIA to €STR legal action plan](#)”, paragraph 7, July.

²² Ibid., paragraph 1.

overnight rate will develop, in particular in comparison to the one based on term rates, but it recommends that market participants issue new instruments that are linked to the €STR to replace those that were previously linked to EONIA.

4.2.5 Operational readiness

In order to facilitate the transition of the market from EONIA-referencing cash products to €STR-based ones, it is important that the front and back office systems used by market participants are able to manage new instruments. The internal setup for trading, managing risk and performing the full lifecycle of a €STR trade has to be established and tested. For the market to operate, it is essential that the systems and market infrastructures of all market participants (buy-side, sell-side, trading platforms, clearing houses, etc.) are ready.

The working group highlights the importance of operational readiness and strongly recommends that market participants test their systems to ensure that they can manage new products referencing the €STR (including possible changes from current market practice, such as compounding, for example).

For swingline loans, market participants should be aware of the operational considerations set out in the Report.

4.2.6 Maintaining seamless product characteristics

€STR products should closely follow the specifications of the current EONIA products. This will increase acceptance of the new overnight benchmark rate and its relevance in financial products.

For example, to preserve the liquidity and robustness of the current EONIA-referencing short and medium-term paper market, AFTI (the French Association of Securities Services Providers) recommended²³ maintaining the current conventions in order to avoid disruptive consequences for market efficiency and to create a smooth transition from EONIA to the €STR.

Retaining the same specifications (time lag, number of decimals, etc.) should allow products to partially offset their inherent risk structures without potentially creating new pockets of risk.

Common arguments about the limitations on the calculation and payment of €STR products on the same day it is set and published need to be closely reviewed. In an age of trading in nanoseconds and real time payments, public perception could be that there is a lack of willingness and an inability to deliver a professional setup. However, while less experienced counterparts and customers may struggle to act in time, banks should be able to manage. In this case the issue can potentially be reduced to a purely technical rearranging of the currently established processes.

²³ See ACI France (1 July 2019), “AFTI- FBF- ACI France - WG operational impacts of €STR- EONIA transition for money market instruments- English version” or “AFTI- FBF- ACI France- CR WG transition indices Enjeux opérationnels de la réforme des indices- French version”.

Issues surrounding financial products referencing the €STR should be recognised as opportunities for banks to propose and deliver added value in the services they provide to their customers. It is vital for the acceptance and development of a robust and liquid €STR market that the basis and transformation risk for (less sophisticated) market participants is managed, both from EONIA to the €STR and between different product categories.

Market participants largely attribute the technical success of the launch of the €STR to the informal consensus that the rules and calculation methods which have been applied to EONIA would be duplicated for the €STR when feasible. Maintaining this market consensus is key to facilitating the transition from EONIA to the €STR for related cash and derivatives instruments.

4.2.7 Functioning liquid overnight index swaps

In most cases, the development of derivatives markets has followed the development of physical or spot markets in the underlying assets. However, there is no evidence that one must be a precursor to the other. It could be difficult to expect the cash market to emerge in the absence of a liquid derivatives market used to hedge the associated exposures, and vice versa. Consequently, the liquidity of the €STR derivatives market is essential for the transition of the cash market from EONIA to the new benchmark rate.

The switch of interest rate swaps from an EONIA reference to a €STR reference should give a signal to market participants who are willing to enter into €STR cash products that a swap hedge will be available to them if they want to hedge. This is clearly one of the most important factors in the development of cash products referencing the €STR.

5 How to assess whether the €STR derivatives market is sufficiently liquid

According to Directive 2014/65/EU²⁴, a “liquid market” is “a market for a financial instrument or a class of financial instruments, where there are ready and willing buyers and sellers on a continuous basis, assessed in accordance with the following criteria, taking into consideration the specific market structures of the particular financial instrument or of the particular class of financial instruments:

- e) the average frequency and size of transactions over a range of market conditions, having regard to the nature and life cycle of products within the class of financial instrument;
- f) the number and type of market participants, including the ratio of market participants to traded instruments in a particular product;
- g) the average size of spreads, where available.”

For the purposes of some articles in the Markets in Financial Instruments Regulation²⁵, “liquid market” means “a market for a financial instrument that is traded daily where the market liquidity is assessed according to the following criteria:

- i) the free float;
- ii) the average daily number of transactions in those financial instruments;
- iii) the average daily turnover for those financial instruments.”

In particular, following BIS (2019)²⁶, turnover data provide a measure of market activity, and can also be seen as a rough proxy for market liquidity.

Turnover is defined as the gross value of all new deals entered into during a given period and is measured in terms of the nominal or notional amount of the contracts.

Given that we expect a full migration from EONIA-relevant products to the €STR, the current EONIA market liquidity characteristics and details should be used as a benchmark and to build the initial target for the €STR.

In order to assess the €STR derivatives market’s liquidity, the working group recommends analysing and publishing the available data on a regular basis, especially considering:

- the number and type of contributors with executable or indicative quotes;

²⁴ See Article 4(25) of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments (OJ L 173, 12.6.2014, p. 349).

²⁵ See Article 2(17)(b) of Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments (OJ L 173, 12.6.2014, p. 84).

²⁶ See [BIS Statistical Bulletin](#), December 2019.

- the average value of nominal amounts on both sides (bid-ask) ;
- the average size of bid-ask spreads;
- price dispersion measures, such as the dispersion of execution prices around a benchmark.
- We identified three potential available datasets to be used (see the appendix for details):
- BIS (Bank for International Settlements) – semi-annual;
- EMIR (European Market Infrastructure Regulation);
- MMSR (money market statistical reporting).

However, these databases have some limitations that affect the scope of the analysis.

The ECB MMSR database does not allow for any differentiation between EONIA and €STR OIS transactions. By comparison with market rates, OIS trades can be identified as EONIA or €STR; however, such an estimation is not entirely accurate, especially for longer-dated OIS trades. Also, EMIR data for this specific exercise suffer from quality issues. CCP data could be the most appropriate source to capture the changes in the OIS market, especially as they cover the vast majority of the market. Some public data are already available for OIS markets (LCH and Eurex) and risk-free rates (LCH only).

As the €STR administrator, the ECB agreed to investigate the possibility of publishing further €STR information that allows the progress made on the development of the €STR derivatives market to be monitored, to the extent that the confidentiality regimes of the publicly available data sources allow it. Indeed, the MMSR and EMIR databases are subject to specific confidentiality regimes, while CCPs' aggregated data are also subject to the consent of the data providers.

6 Appendix

6.1 BIS dataset

Following BIS (2015)²⁷, we recall that the BIS compiles and publishes three sets of statistics on derivatives markets: quarterly statistics on derivatives traded on organised exchanges, semi-annual statistics on outstanding positions in over-the-counter (OTC) derivatives markets, and triennial statistics on OTC derivatives and foreign exchange market activity. Together, these provide a comprehensive measurement of the size and structure of global derivatives markets.

In particular, the semi-annual OTC derivatives statistics are compiled under the auspices of the Committee on the Global Financial System. They provide data on notional amounts outstanding and gross market values for all types of OTC contracts. Large dealers in 13 countries currently report the semi-annual statistics. They report on a worldwide consolidated basis, including the positions of their foreign affiliates and excluding intragroup positions.

The Triennial Central Bank Survey also provides data on amounts outstanding, but for a considerably larger set of reporting dealers in many more countries than the semi-annual survey. Dealers report on a consolidated basis. As we have already mentioned above, the triennial survey has a separate part that covers data on turnover in OTC derivatives and foreign exchange markets. These turnover data are reported on an unconsolidated basis by the sales desks of reporting dealers. In particular, overnight index swaps are only included in total swap turnover from 2019 onwards.

Finally, we highlight the BIS report on central banks' access to and use of derivatives transaction data being reported to trade repositories.²⁸ The data cover OTC derivatives and some exchange-traded derivatives. The survey was completed by 50 central banks that are members of the Irving Fisher Committee on Central Bank Statistics.

Unfortunately, no market liquidity indicator is provided by this survey.

6.2 EMIR dataset

As described in an article by Boneva, L. et al. (2019)²⁹, while daily transaction-by-transaction derivatives data are made available to authorities in the EU, depending on their mandate and jurisdiction, the ECB only obtains a subset of the data reported by euro area counterparties.

In cooperation with the European Systemic Risk Board, the ECB has developed an EMIR-dedicated IT infrastructure to store and access the data received from all trade repositories. Despite the

²⁷ See [BIS Statistical Bulletin](#), December 2018.

²⁸ Bank for International Settlements (2018), "[Central banks and trade repositories derivatives data](#)", report on the 2018 survey conducted by the Irving Fisher Committee on Central Bank Statistics.

²⁹ See Boneva, L. et al. (2019), "[Derivatives transactions data and their use in central bank analysis](#)", *Economic Bulletin*, Issue 6, ECB.

significant improvement in data quality since the launch of EMIR reporting in 2014, a careful data cleaning procedure has to be applied before the data can be used for policy analysis.

On the basis of this dataset, Boneva, L. et al. (2019) report total outstanding notional amounts as of June 2019 related to the main interest rate derivatives in the euro area, including EONIA plain vanilla swaps and basis swaps.

6.3 MMSR dataset

Reporting agents are required to report statistical information relating to money market instruments to the national central bank of the Member State where they are resident, or to the ECB, on a daily basis. Reporting includes all transactions related to money market instruments booked in their branches located in EU and European Free Trade Association countries.

One of the money market segments covered by the MMSR dataset is daily euro OIS transactions denominated in euro of any maturity and conducted with financial corporations (except central banks where the transaction is not for investment purposes), general government or non-financial corporations classified as “wholesale” according to the Basel III liquidity coverage ratio framework.

For OIS, it is the maturity of the underlying that qualifies the OIS as a money market instrument, regardless of the final maturity of the OIS.

The variables to be reported for each transaction denominated in euro on the OIS market include: the reported transaction status (e.g. new transaction, amendment or cancellation, correction to a previously reported transaction, etc.), the novation status, the trade, the start and maturity dates, and the transaction nominal amount.

According to the ECB’s Euro money market study 2018, thanks to the granular data gathered via MMSR, the Eurosystem was for the first time able to undertake a complete and thorough assessment of developments in the euro money market.

Under MMSR the Eurosystem has been collecting daily data on all transactions conducted by the largest banks in the euro money market since the middle of 2016. These newly available granular data include information on transaction prices, the counterparties involved and the collateral used for most segments of the money market.

The 2018 money market study shows the market share of the cumulative volume per quarter per segment, and the market share of the daily average volume per quarter, with a detailed analysis of OIS data, where monthly cumulative volumes of transactions are reported.

Volumes in the OIS segment are recovering slowly and fitfully from the all-time lows recorded in 2016, but still remain considerably lower than in pre-crisis times. The OIS market features a fairly even split between spot and forward transactions and shows balanced liquidity conditions on both trading sides (receiving and paying), while specific events of relevance to monetary policy seem to stimulate activity in this market.

Looking at the composition of participants in the OIS segment, MMSR data show a strong concentration. From a geographical perspective, counterparties located in Germany and France account for more than 80% of the activity in the OIS market. The major market-makers are

investment banks, while at present the vast majority of transactions are conducted via CCPs. Participants access the OIS market for hedging, portfolio rebalancing and positioning for possible central bank rate movements.

From a maturity perspective, the three-month OIS maturity bucket generates the highest level of activity in terms of volume and number of transactions, while the average ticket size decreases as maturities increase.

This study highlights the fact that the Eurosystem's measures anchored rate expectations at low or lower levels for a prolonged period of time, rendering market needs for interest rate hedging less relevant.

Activity in the EONIA-OIS market declined in response to the low volatility in the unsecured market and very stable expectations of the future path of short-term money market rates (owing to forward guidance) which, in turn, decreased the need to hedge interest rate risk.

The study also highlights the responsiveness of EONIA-OIS activity to changes in the EONIA, showing that the link between the derivatives and cash markets remained robust, despite the low EONIA volume, the high excess liquidity and the forward guidance.

European Central Bank, 2020

Postal address 60640 Frankfurt am Main, Germany
Telephone +49 69 1344 0
Website www.ecb.europa.eu

All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

The European Central Bank (ECB) provides the secretariat for the working group on euro risk-free rates and is publishing the report solely in this capacity. The ECB does not however accept any responsibility or liability for the contents of the document and the fact that the ECB provides the secretariat for the working group should not be taken as implying in any way that it shares the views expressed in the document.

For most of the specific terminology, please refer to the [ECB glossary](#).