



Consultation

SWESTR

Consultation on early publication
and increased information about
the transaction dataset

15 February 2023

SWESTR: Consultation on early publication and increased information about the transaction dataset

15 February 2023
REF. NO: 2023-00261

This document sets out the Riksbank's proposals for an earlier publication time for SWESTR and increased information about the transaction dataset for SWESTR.

The purpose of the consultation is to obtain views from relevant stakeholders. A summary of the questions to which the Riksbank wishes to receive responses is provided in Appendix 1. In addition to answers to the Riksbank's questions, general comments can also be provided in connection with the consultation.

Comments should be sent to swestr@riksbank.se or to Sveriges Riksbank, 103 37 Stockholm by 8 March 2023. Please quote reference number 2023-00261 and the title of the consultation.

A summary of the responses to the consultation will be compiled and published on www.riksbank.se.

Thank you for your participation!

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1 Introduction

In this section follows general information on SWESTR, average rates and index, as well as a summary of the proposals that the Riksbank is circulating, including proposed effective dates.

1.1 About SWESTR

The Riksbank is the administrator of the transaction-based reference rate SWESTR (Swedish krona Short Term Rate). The Riksbank is also administrator of average rates and index based on SWESTR.¹

SWESTR has a maturity of one day (overnight) and reflects the interest rate level for transactions carried out on the unsecured overnight market in Swedish kronor. SWESTR is published at 11:00 CET on the business day following the date on which the underlying transactions were executed and settled (value day). SWESTR is thus published $t+1$.

Average rates and index reflect the return on an investment that continuously accrues interest at the current SWESTR rate. Average rates reflect the average return over a certain period of time. The index reflects the total return since 1 September 2021. The average rates and index have a value day equal to publication date and include the SWESTR value published on the same business day.

The data source for SWESTR is money market transaction data reported to the Riksbank. The Riksbank's monetary policy counterparties are obliged to report this under the *Terms and Conditions for RIX and Monetary Policy Instruments*.^{2,3} At present, nine out of the Riksbank's monetary policy counterparties contribute transactions to the transaction dataset for SWESTR. These are referred to as reporting agents.

1.2 Summary of the Riksbank's proposals

Early publication

The Riksbank proposes that, going forward, SWESTR should be published at 09:00 CET on the day of publication. Any corrected value is proposed to be published at 12:00 CET on the same day. For average rates and the index based on SWESTR, the corresponding times are proposed to be 09:05 CET and 12:05 CET respectively.

¹ For more information, see the information document provided by the Riksbank (*SWESTR: Comprehensive information on Sveriges Riksbank's framework for SWESTR*, Sveriges Riksbank, 2 January 2023). The document is available on the Riksbank's [website](#).

² It is only the daily reporting that is the basis for SWESTR.

³ Transaction data on completed money market transactions must be reported by 07:00 on the following business day.

In order to make this earlier publication possible, the Riksbank also proposes to adjust the timetable in the daily process for determining and publishing the benchmarks and to carry out different types of checks of transaction data in parallel.

Increased transparency regarding the SWESTR transaction dataset

The Riksbank also proposes that the information provided regarding the transaction dataset for SWESTR be expanded. Going forward, the Riksbank plans to publish information on the interest rate levels at the boundaries for the trimming of the transaction dataset daily.⁴ Furthermore, the Riksbank intends to provide information on the composition of the transaction dataset on a lagged basis.

1.3 Effective dates of the Riksbank's proposal

The Riksbank intends that all the proposals in this consultation will enter into force in the second quarter of 2023; see Table 1 below.

Table 1. Proposed effective dates

Dates on which the Riksbank considers that the proposals in this consultation can enter into force

Proposals	Date
Proposal 2:1 Earlier publication times for SWESTR	2 May
Proposal 2:2 Adjusted process for determining and publishing SWESTR	2 May
Proposal 3:2 Publication of interest rate levels at the trimming boundaries	1 June
Proposal 3:3 Extended information in <i>Report on the transaction dataset for SWESTR</i> ⁵	8 May

Note. The date refers to the publication date of the first SWESTR value to which the proposals will be applied. The numbering of the proposals refers to the sections of the consultation paper in which each proposal is presented in detail.

Source: The Riksbank

⁴ Trimming refers to the exclusion ('trimming') of symmetrical shares of the total volume of transactions from the transaction dataset before calculation. The Riksbank trims a total of 25 per cent of the transaction volume before SWESTR is calculated. The transactions are ordered according to their respective interest-rate levels, after which 12.5 per cent of the transaction volume with the lowest interest rates and 12.5 per cent with the highest interest rates are excluded from further calculations. SWESTR is thus calculated on the basis of the middle 75 per cent of the transaction volume. Interest-rate levels at the boundaries for trimming thus refer to the lowest and highest interest rates included in the SWESTR transaction dataset *after* trimming.

⁵ The date refers to the first date of publication of the extended *Report on the transaction dataset for SWESTR*.

2 Proposal on early publication for SWESTR

The Riksbank proposes that, going forward, SWESTR be published at 09:00 CET on the day of publication and that any corrected value be published at 12:00 CET. For average rates and the index based on SWESTR, the corresponding times are proposed to be 09:05 CET and 12:05 CET respectively. The Riksbank also proposes that the daily process for determining SWESTR be adapted to enable publication at these times.

2.1 Earlier publication time

The Riksbank's proposal

The Riksbank proposes that the calculation and publication times in Table 2 below apply to SWESTR and to average rates and index based on SWESTR.

The Riksbank proposes that the new times start to be applied to the values with publication day 2 May 2023.⁶

Table 2. Proposed publication times

Calculation and publication times for SWESTR as well as average interest rates and index

	Ordinary publication		Possible correction	
	<i>Calculation</i>	<i>Publication</i>	<i>Calculation</i>	<i>Publication</i>
SWESTR	08:30	09:00	11:30	12:00
Average rates and index	08:45	09:05	11:45	12:05

Note: All times CET.

Source: The Riksbank

Background

Currently, SWESTR is published at 11:00 on the day of publication; see Table 3 below. Any correction of SWESTR is published at 14:00.⁷ Average rates and index based on SWESTR are currently published at 11:05. Any corrected values for average rates and index are published at 14:05.⁸

⁶ Hence the new calculation and publication times will be applied from the SWESTR value with a value date of 28 April 2023 and for average rate and index values with a value date of 2 May 2023.

⁷ A corrected value for SWESTR is determined only if the difference between the second calculation result and the value previously determined for SWESTR on the day of publication exceeds 2 basis points (0.02 percentage points).

⁸ Corrected values for average rates and index are determined only if a corrected value for SWESTR has been determined and/or if errors in the previous calculation are detected.

The current publication timetable was established ahead of the test period for SWESTR in 2021. When determining the timetable for the daily process for determining and publishing SWESTR, the Riksbank chose to have significant margins in order to ensure good quality in the process. There was, at the time, also uncertainty as to what proportion of the reported transactions would be flagged as potentially anomalous, and thus need to be validated by the reporting agents.

Table 3. Current publishing times

Calculation and publication times for SWESTR as well as average interest rates and index

	Ordinary publication		Possible correction	
	<i>Calculation</i>	<i>Publication</i>	<i>Calculation</i>	<i>Publication</i>
SWESTR	10:00	11:00	13:00	14:00
Average rates and index	10:30	11:05	13:30	14:05

Note: All times CET.

Source: The Riksbank

Considerations

Operational aspects of the process for determining and publishing SWESTR

The Riksbank considers that the conditions exist within its own organisation and among the reporting agents to bring forward the publication times while maintaining the quality of the process for determining and publishing SWESTR. This, however, presupposes that the daily process is adjusted in accordance with the Riksbank's proposals; see section 2.2. The Riksbank's assessment is that the reporting agents' contribution to the process and the transaction reporting itself are of sufficiently high quality to enable earlier publication.

Operational aspects for SWESTR users

Potential users of SWESTR and other stakeholders have, in various contexts, noted that earlier publication times for SWESTR, in particular for a possible corrected value, are important to facilitate the operational management of financial contracts and instruments referencing SWESTR.⁹ Stakeholders consider that 14:00 CET is far too late in the day to receive a definitive decision on the value of SWESTR. This is because market participants' back office functions can only start processing payments linked to SWESTR after a definitive decision on the day's value. In addition, Euroclear Sweden AB, the Swedish central securities depository, has stated that it requires definitive information regarding a reference rate no later than 13:00 CET, five business days before a payment flow linked to the interest rate.

⁹ Comments of this kind have been received from participants in the SWESTR Advisory Group, the Riksbank's Forum for Reference Rates, in bilateral discussions with other stakeholders and in connection with the survey conducted by the Riksbank in 2021. For more information on the SWESTR Advisory Group, the Riksbank's Forum for Reference Rates and the survey, see the [Riksbank's website](#).

International practice

Other central banks that administrate reference rates in their respective currencies publish the daily reference rate values earlier in the day than the Riksbank; see Table 4. Usually, ordinary publication takes place at around 09:00 local time or earlier. Any corrections are usually made shortly before lunchtime.

Table 4. Publication times for reference rates provided by central banks

Fully transaction-based reference rates administered by central banks

Country	Reference rate	Publication time	Correction time
Sweden	SWESTR	11:00	14:00
Denmark	DESTR	10:00	11:00
Euro area	€STR	08:00	09:00
Norway	NOWA	09:00	11:00
Canada	CORRA	09:00	11:00
UK	SONIA	09:00	12:00
United States	SOFR	08:00	14:30

Note. All times are local. Please note that the ECB's regulations for €STR state that €STR should be published *no later than* 09:00 CET (ordinary publication) and that any corrected value should be published *no later than* 11:00 CET. Normally, however, €STR is published at 08:00 CET, while any correction is published at 09:00 CET.

Source: Respective central banks

Working Group for Alternative Reference Rates

The Working Group for Alternative Reference Rates (AGAR) was a working group of the Swedish Bankers' Association in which the Riksbank participated as an observer. In its fourth consultation, AGAR recommended that the ordinary publication of an alternative reference rate should take place at 09:00 and that any correction should be published at 12:00.¹⁰

Time difference between ordinary publication time and time for corrections

If, going forward, it becomes necessary to publish a corrected SWESTR value, a likely cause is that a technical error has affected the process for determining SWESTR at the time of ordinary publication.¹¹ It is reasonable to assume that it may be relatively time-consuming to rectify such technical issues. This applies regardless of whether the issue was at the Riksbank or at one or more reporting agents.

The Riksbank therefore considers that there should continue to be a three-hour interval between the time of ordinary publication and that of any corrected SWESTR. This will increase the chances of collecting and checking a complete transaction dataset

¹⁰ See *Consultation 4: The fixing process*, AGAR, 18 November 2019, available on the Swedish Bankers' Association website.

¹¹ Since SWESTR became available for actual use as a reference rate in September 2021, no correction of SWESTR has been necessary. In spring 2021, during the test period, there was a correction to the test value for SWESTR due to late transaction reporting, which in turn was due to a technical issue at one of the reporting agents.

before a second SWESTR calculation is made. The publication time for any corrected SWESTR value will thus be 12:00 CET, which should not be too late in the day to meet the needs of the market.

Average rates and index

The Riksbank considers that the average rates and index based on SWESTR should continue to be published five minutes after the SWESTR value published on the same day. The same applies in the event of a correction of SWESTR. It is therefore proposed that these be published at 09:05 CET (ordinary time) and at 12:05 CET (possible corrections).

Questions to all consultation bodies

2.1.A: Do you support the proposal to bring forward the publication time of SWESTR to 09:00 and of the average rates and index to 09:05, and to bring forward the publication of any corrected values to 12:00 and 12:05 respectively? If no, please explain why you do not support the proposal.

2.1.B: Do you consider that the proposal to bring forward publication will facilitate the operational management of financial instruments and contracts referencing SWESTR, for example in relation to the settlement of payments?

2.2 Adjusted process for determining and publishing SWESTR

The Riksbank's proposal

The Riksbank proposes that the daily process for determining and publishing SWESTR and the average rates and index be adjusted in accordance with the information set out in Appendix 2.¹²

The adjusted process will be coordinated with the change in the publication times for SWESTR. It is therefore proposed to enter into force on 2 May 2023.

Considerations

The Riksbank deems it possible to bring forward the publication time for SWESTR to 09:00 on the day of publication while maintaining the quality of the process. This assumes that the stages of the process are adjusted and that the intermediate timetable is brought forward as proposed by the Riksbank; see Appendix 2.

The Riksbank attaches great importance to checking reported transaction data before SWESTR is calculated and determined. The proposed adjustments to the process for determining and publishing SWESTR do not involve any changes to *which* checks the Riksbank carries out on reported transaction data. However, the pair matching check (current validation stage 2) will in future be carried out *in parallel* with the extreme value check (validation stage 1). The Riksbank deems that this change will have a limited impact on the workload of the monetary policy counterparties, as the number of pair matching errors has been very small so far.

In addition to the Riksbank, the Riksbank's monetary policy counterparties (reporting agents) are involved in the process of determining and publishing SWESTR. To ensure the quality and reliability of this process, it is important that the reporting agents have good internal procedures and system support. The proposed timetable leaves less room than before to deal with any technical or operational deviations. Hence, the need for reporting agents to have good internal procedures and system support will be larger than before.

Question to the Riksbank's monetary policy counterparties

2.2.A: Do you consider that the adjusted process for determining and publishing SWESTR with adjusted intermediate times is reasonable? Can you meet the requirements for reporting agents in the adjusted process while maintaining the quality of

¹² This process is mainly an internal matter for the Riksbank as administrator of SWESTR, but also concerns the Riksbank's monetary policy counterparties, as they are involved in the process.

your participation? If no, please indicate what aspects you find problematic as well as the time frame within which you can meet the requirements.

3 Proposal for increased transparency regarding the SWESTR transaction dataset

The Riksbank proposes the daily publication of interest rates at the trimming boundaries for the transaction dataset for SWESTR.¹³ Furthermore, the Riksbank proposes to publish information on the composition of the transaction dataset on a regular basis.

Section 3.1 provides overall background information and considerations regarding the Riksbank's proposal to provide more information on the transaction dataset for SWESTR. The Riksbank's specific proposals follow in sections 3.2 and 3.3.

In addition to the proposals outlined in sections 3.2 and 3.3, the Riksbank also intends to provide an annual report for SWESTR in the future, which will be made available externally.

3.1 Background information and general considerations

Background

Information published today about the transaction dataset

The Riksbank's *Policy for transaction-based reference rate SWESTR*¹⁴ states that “[t]o maintain confidence in SWESTR and facilitate its external evaluation, transparency over working methods shall be high” and that this shall be achieved by publishing:

- SWESTR on the Riksbank website every Swedish banking day
- information on methodology and relevant processes linked to SWESTR on the Riksbank's website
- summary information on the transactions forming the basis for the current SWESTR rate every banking day, and
- with a lag, information on any revisions of the transaction dataset and how these revisions would have affected SWESTR.

¹³ Trimming refers to the exclusion ('trimming') of symmetrical shares of the total volume of transactions from the transaction dataset before calculation. The Riksbank trims a total of 25 per cent of the transaction volume before SWESTR is calculated. The transactions are ordered according to their respective interest-rate levels, after which 12.5 per cent of the transaction volume with the lowest interest rates and 12.5 per cent with the highest interest rates are excluded from further calculations. SWESTR is thus calculated on the basis of the middle 75 per cent of the transaction volume. Interest-rate levels at the boundaries for trimming thus refer to the lowest and highest interest rates included in the SWESTR transaction dataset *after* trimming.

¹⁴ *Policy for transaction-based reference rate SWESTR* is available on the [Riksbank's website](#).

In addition to the SWESTR value itself, the Riksbank currently provides limited information on the transaction dataset for each SWESTR value; see Table 5 below. The information corresponds to what AGAR recommended an administrator to provide.¹⁵

The information on SWESTR that the Riksbank has published on a regular basis in 2022 is presented in Appendix 3.

Table 5. Information on the transaction dataset is published daily

Information on the transaction dataset before trimming

Information on the transaction dataset
Number of transactions
Total transaction volume
Number of reporting agents that have contributed at least one transaction

Source: The Riksbank

The *Report on the transaction dataset for SWESTR* is published quarterly with some lag.¹⁶ This report provides information on how changes in the transaction dataset that have occurred subsequently, for example due to late reporting of transaction data, would have affected the determined SWESTR values if the changed information had been known at the time SWESTR was determined.¹⁷ Otherwise, the report does not at present contain any information on the composition of the transaction dataset.

The IOSCO Principles

The Riksbank, like many central banks that are administrators of transaction-based reference rates, is committed to complying with the 19 principles for financial benchmarks developed by the International Organization of Securities Commissions (the IOSCO Principles), where applicable and relevant.¹⁸ These principles represent the best international practice for benchmark administrators.

The issue of transparency of the transaction dataset is addressed in the ninth principle. This principle aims to enable relevant stakeholders to understand how a value for a financial benchmark has been reached. The main focus of the principle is to make available information regarding the type of data and calculation methodology used, as well as whether the administrator has used any form of expert judgement. In the case

¹⁵ *Proposal for fixing process*, AGAR, 25 May 2020, available on the Swedish Bankers' Association website.

¹⁶ The *report on transaction dataset* is published on the Riksbank's [website](#). The report has a record date at the end of the month following the calendar quarter to which it relates, and is published five business days after the record date.

¹⁷ This report includes cases where the transaction dataset has changed between the first and second calculation times, for example due to late reporting or validation, but where the change was not large enough for the Riksbank to determine a corrected SWESTR rate. The report also includes cases where the transaction dataset has changed after the second calculation time, for example because a submitter has subsequently adjusted the reported data. Changes in the transaction dataset due to errors by the Riksbank are also included in the report. The report includes all cases where the absolute value of the difference between the determined SWESTR value and the value calculated on the basis of the changed transaction dataset exceeds 0.1 basis points (i.e. 0.001 of a percentage point). For each case covered by the report, summary information is provided as to why the transaction dataset has changed.

¹⁸ See *Principles for Financial Benchmarks*, International Organization of Securities Commissions, July 2013.

of SWESTR, this principle is satisfied by the definition of the reference rate being based on only one type of data, by expert judgement not being applied and by the Riksbank indicating the calculation method used on a daily basis.

The principle also states that the administrator must provide information on the transaction dataset and/or the underlying market for the reference value. This means that the number of transactions and the total volume of transactions underlying a value should be disclosed. The principle also states that the administrator should provide information on *range and average volume* and *range and average of price*.

A limited market¹⁹

Although the robustness requirements set by the Riksbank have been met every single value date since SWESTR started to be provided, the size of the unsecured overnight market in Swedish kronor is relatively limited and the number of large participants relatively few.²⁰ This needs to be taken into account when making assessments related to confidentiality and the impact on competition.

Table 6. Transaction dataset for corresponding reference rates in 2022

Fully transaction-based reference rates administered by central banks

Country	Reference rate	Average total volume (MSEK)	Average number of transactions	Average number of reporting agents
Sweden	SWESTR	53,803	56	5
Denmark	DESTR	6,599	<i>Not published</i>	<i>Not published</i>
Euro area	€STR	623,751	576	30
Norway	NOWA	24,139	14	14
Canada	CORRA	151,726	<i>Not published</i>	14
UK	SONIA	815,584	<i>Not published</i>	<i>Not published</i>
United States	SOFR	10,105,207	<i>Not published</i>	<i>Not published</i>

Note. The table shows simple averages for the information provided on each transaction dataset. Exchange rates as of 30 December 2022 have been used to convert volumes into approximate equivalent value in SEK. Data for DESTR refer to April-December 2022 only. For average number of reporting agents, the number of active banks for €STR, the sum of the number of lending banks and the number of borrowing banks for NOWA, and the number of unique reporting agents for CORRA have been used.

Source: Respective central banks

¹⁹ From 1 January 2023, a number of additional monetary policy counterparties of the Riksbank will be subject to the requirement for daily reporting of money market transactions. They shall be up and running with daily reporting by no later than 1 March 2023. Transactions from them will also be included in the SWESTR transaction dataset from a future, as yet undecided, date. These reporting agents have previously reported the equivalent data on an aggregated annual basis.

²⁰ The Riksbank considers the transaction dataset to be sufficiently robust, and that the normal calculation method therefore shall be used, when the total transaction volume is at least 6 billion Swedish krona, at least three reporting agents have contributed transactions and that the largest reporting agent on the day has not contributed more than 75 percent of the total transaction volume.

The underlying market for SWESTR is also smaller than the underlying markets for some other well-established transaction-based reference rates, such as SONIA, €STR and SOFR, see Table 6 above. This needs to be taken into account in the interpretation of the practice of these other reference rates.

Confidentiality

The data source for SWESTR is data on executed transactions in the unsecured overnight market retrieved from the Riksbank's monetary policy counterparties. This data is subject to confidentiality pursuant to Chapter 24 Section 8 of the Swedish Public Access to Information and Secrecy Act (2009:400). This means that the Riksbank may not publish information relating to an individual's personal or financial circumstances and which can be attributed to the individual.

This applies also if the data published by the Riksbank does not in itself reveal anything, but combining the data with other sources may lead to the disclosure of confidential information.

Competition in the underlying market

According to Chapter 1, Section 9 of the Swedish Instrument of Government (1974:152), public authorities must take account of the equality of all persons before the law and observe objectivity and impartiality in their activities (*principle of objectivity and equal treatment*). This means that the Riksbank must treat all actors equally and must not contribute to giving any actor an advantage over others. Against this background, the Riksbank considers how the published information about the transaction dataset could be used by any agent to gain an undue advantage in the short-term money market.

Considerations

Transparency builds confidence

Increased transparency about the transaction dataset of SWESTR would increase the understanding among external stakeholders of the factors influencing the development of the SWESTR rate.²¹ In turn, a better understanding could build confidence in SWESTR and thus support the use of SWESTR in financial contracts.

Comments from stakeholders

In line with the purpose of the SWESTR Advisory Group, participants were given the opportunity to comment on an early draft of the two proposals for increased transparency with regard to the SWESTR transaction dataset in this consultation.²² There was broad support for the Riksbank to provide more information on the transaction

²¹ This has been pointed out by stakeholders within the framework of both the SWESTR Advisory Group and the Riksbank's Forum on Reference Rates, but also in bilateral discussions.

²² The draft proposal was presented at the September 2022 meeting of the SWESTR Advisory Group. The issue was also raised at the Riksbank's Forum for Reference Rates in October 2022. The material presented then is available on the Riksbank's [website](#). Minutes from the meetings are also published there.

dataset. The Riksbank has taken into account the comments received in the context of the analytical work leading to the proposals presented in this consultation.

The IOSCO Principles

The Riksbank's assessment is that the information currently provided by the Riksbank on how SWESTR has been determined - in the form of the data on the transaction dataset published daily and the provisions contained in the methodology - complies in applicable and relevant parts with the ninth IOSCO Principle. It is also in line with the principle to increase the information provided by the Riksbank on the transaction dataset.

Confidentiality

The transaction data on which SWESTR is based is subject to confidentiality under Chapter 24 Section 8 of the Swedish Public Access to Information and Secrecy Act (2009:400). The Riksbank can therefore not publish information that could contribute to the disclosure of information about individual reporting agents, or their counterparties, transactions or transaction patterns.

As the Riksbank intends to provide parts of the increased information on the transaction dataset in an automated manner on a daily basis, the Riksbank will not be able to make a separate confidentiality assessment of the published information on each occasion. Therefore, the Riksbank has instead had to make an *ex-ante* assessment of whether there is a risk of confidential information being disclosed. Given the conditions in the Swedish unsecured overnight market, the Riksbank needs to exercise great caution in the type of information provided.

The need for caution also characterises the Riksbank's assessment of the data that is proposed to be published regularly but less frequently. As far as possible, the Riksbank wishes to enable comparisons over time, which requires that the same data can be provided consistently without confidential information being disclosed.

Competition in the unsecured overnight market

In addition to the prerequisites set out above, there are further reasons for the Riksbank to consider whether increased information on the transaction dataset for SWESTR could have a negative impact on competition in the unsecured overnight market. It is important for the long-term quality of SWESTR that the underlying market functions satisfactorily. The overnight market is also central to the Riksbank's implementation of monetary policy.

3.2 Increased daily information on the transaction dataset

The Riksbank's proposal

The Riksbank proposes to provide additional information on the transaction dataset for each SWESTR value, see Table 7 below. The Riksbank intends to publish daily information on the interest rates at the trimming boundaries for SWESTR. This corresponds to the interest rates at the volume-weighted percentiles 12.5 and 87.5 of the transaction dataset before trimming; see Figure 1 below. The interest rates are intended to be presented as percentages to two decimal places.

The Riksbank estimates that the daily publication of this information can start on 1 June 2023.

The Riksbank also intends to provide time series data on interest-rate levels at the SWESTR trimming boundaries for all value days since 1 September 2021. This data is illustrated in Chart 1 below. The data series are intended to be published in conjunction with the Riksbank's commencement of the daily publication of the corresponding information.

Table 7. Information that is intended to be provided after the proposed increase

Information on the transaction dataset before trimming

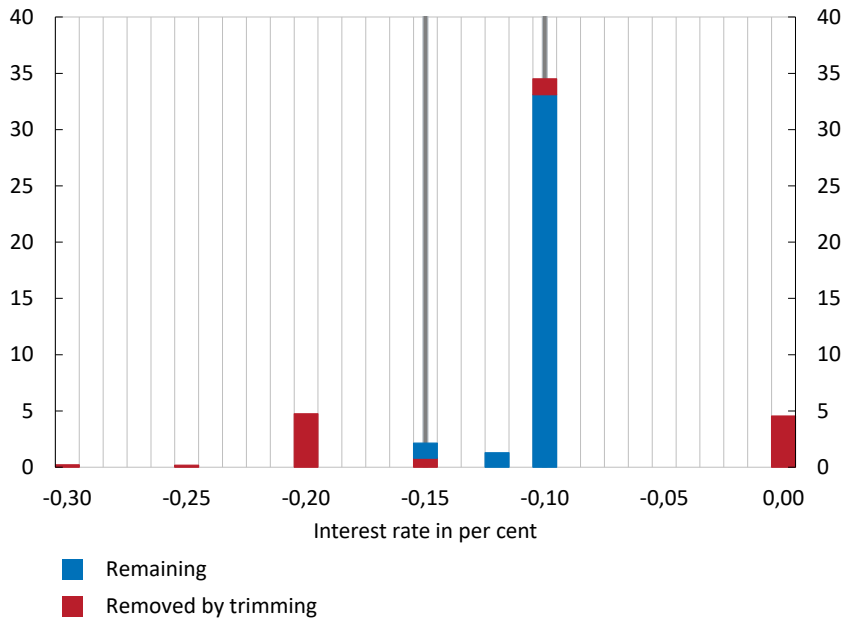
Information on the transaction dataset
Number of transactions
Total transaction volume (MSEK)
Number of reporting agencies that have contributed at least one transaction
<i>Interest rate at lower trimming boundary (%)</i>
<i>Interest rate at upper trimming boundary (%)</i>

Note: Italics indicate additional information after proposed increase

Source: The Riksbank

Figure 1. Schematic diagram of the interest rates at the trimming boundaries

Volume in billion SEK and marked trimming boundaries

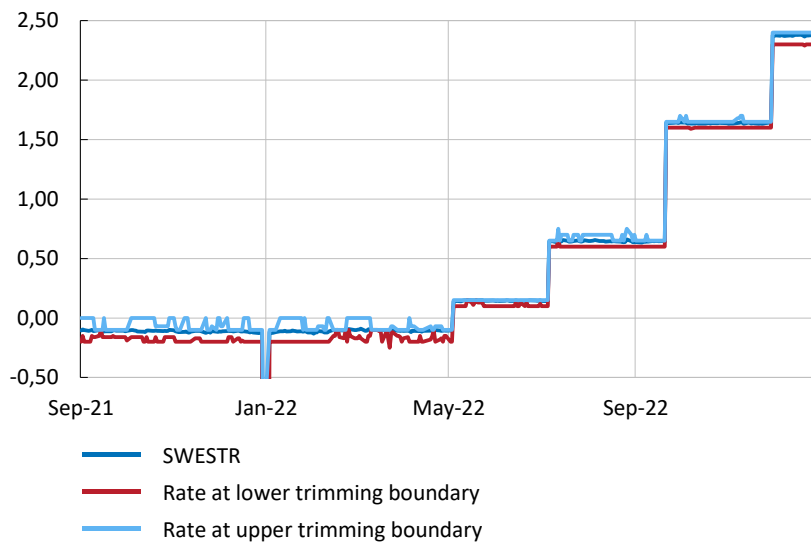


Note. The grey lines mark the trimming boundaries. The corresponding interest rate levels can be read on the x axis. The chart is based on the actual SWESTR transaction dataset for one day in the first half of 2022.

Source: The Riksbank

Chart 1. SWESTR and the interest-rate levels at the trimming boundaries

Interest rate levels in per cent



Source: The Riksbank

Specific considerations with regard to this proposal

International practice

It is relatively common for central banks that are administrators of reference rates to provide information on interest-rate levels at certain volume-weighted percentiles of the transaction dataset, see Table 8. However, there is no established uniform practice as to which percentiles they report or whether the percentiles refer to the transaction dataset before or after trimming.

Table 8. Publication of interest-rate levels at volume weighted percentiles

Fully transaction-based reference rates administered by central banks

Country	Reference rate	Type	Percentiles at which interest-rate level is published		Comments
Sweden	SWESTR	Unsecured	-	-	-
Denmark	DESTR	Unsecured	-	-	-
Euro area	€STR	Unsecured	25, 75 (two decimal places)	Before trimming	A total of 50 per cent of the transaction dataset is trimmed away in a symmetrical way. The percentiles correspond to the trimming boundaries.
United States	SOFR	Secured	1, 25, 75, 99 (two decimal places)	After trimming	Only limited trimming of the transaction dataset. For one segment, some filtering is done to exclude so-called <i>specials</i> . Otherwise no trimming is done. Published percentiles are based on the trimmed transaction dataset.
UK	SONIA	Unsecured	10, 25, 75, 90 (two decimal places)	Before trimming	A total of 50 per cent of the transaction dataset is trimmed away in a symmetrical way. The middle percentiles correspond to the trimming boundaries.
Norway	NOWA	Unsecured	-	-	-
Canada	CORRA	Secured	5, 25, 75, 95 and the interest rate at the trimming boundary (four decimal places)	After trimming	25 per cent of the transaction volume with the lowest interest rates is trimmed away asymmetrically in order to exclude so-called <i>specials</i> . The percentiles are based on the trimmed transaction dataset. The interest rate at the trimming boundary is also published.

Source: Respective central banks

Among the administrators of reference rates which provide information on the dispersion of the interest rates in the transaction dataset, the Riksbank considers that

the practice of the Bank of England and the ECB, respectively, regarding SONIA and €STR, constitutes the most relevant practice for the Riksbank and SWESTR.²³ The Bank of England and the ECB provide information on interest-rate levels at symmetric percentiles of the untrimmed transaction dataset. In both cases, the interest-rate level is published at the trimming boundary that are applicable to these reference rates.²⁴ The Bank of Canada, which is the administrator of the CORRA reference rate, also publishes the interest rate level at the trimming boundary.

In contrast, Danmarks Nationalbank and Norges Bank do not provide information on the dispersion of interest rates in the transaction dataset for their respective transaction-based reference rates, DESTR and NOWA.

Confidentiality and impact on competition

The Riksbank considers that there is no risk of confidential information on the transactions of reporting agents or their counterparties being disclosed if information about the transaction dataset is provided in accordance with the Riksbank's proposal.

Furthermore, the Riksbank considers that publication according to the proposal will not adversely affect competition in the unsecured overnight market, which is the underlying market for SWESTR.

Questions to all consultation bodies

3.2.A: Do you support the proposal to publish daily information on the interest rate levels at the boundary for the trimming of the SWESTR transaction dataset? If no, please explain why you do not support the proposal.

3.2.B: Do you consider that making the proposed information available will facilitate the understanding of the factors influencing the development of the level of SWESTR?

²³ SONIA and €STR, like SWESTR, are based on unsecured transactions. Moreover, like SWESTR, they are determined as a volume-weighted mean after symmetric trimming of the transaction dataset.

²⁴ The Riksbank considers that it is the fact that these levels (percentiles 25 and 75) constitute the trimming boundaries for €STR and SONIA that is key, not the levels as such.

3.3 Regular information on the composition of the transaction dataset

The Riksbank's proposal

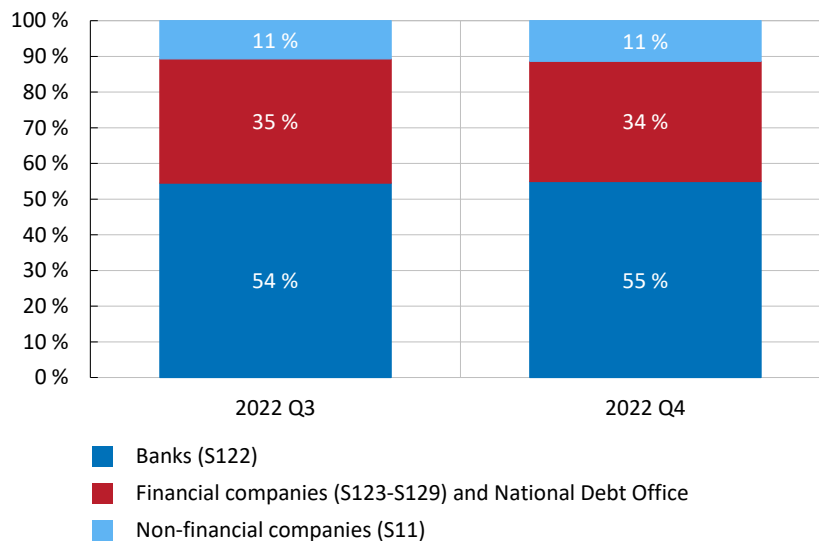
The Riksbank proposes to expand the *Report on the transaction dataset for SWESTR* with information on the composition of the transaction dataset. This report is published quarterly with a lag of just over a month.

The first *Report on the transaction dataset for SWESTR* with the extended content will relate to the first calendar quarter of 2023 and be published on 8 May 2023.

The information that will be reported is the breakdown of the total transaction dataset over the last four calendar quarters, i.e. in aggregate over the quarter to which the report relates and the three preceding quarters. The breakdown is presented by counterparty category and by the volume of underlying transactions; see Charts 2 and 3 and Tables 9 and 10 below. Percentages are rounded to the nearest whole number.

Chart 2. Breakdown of transaction dataset by counterparty category

Percentage breakdown of total transaction volume by counterparty category

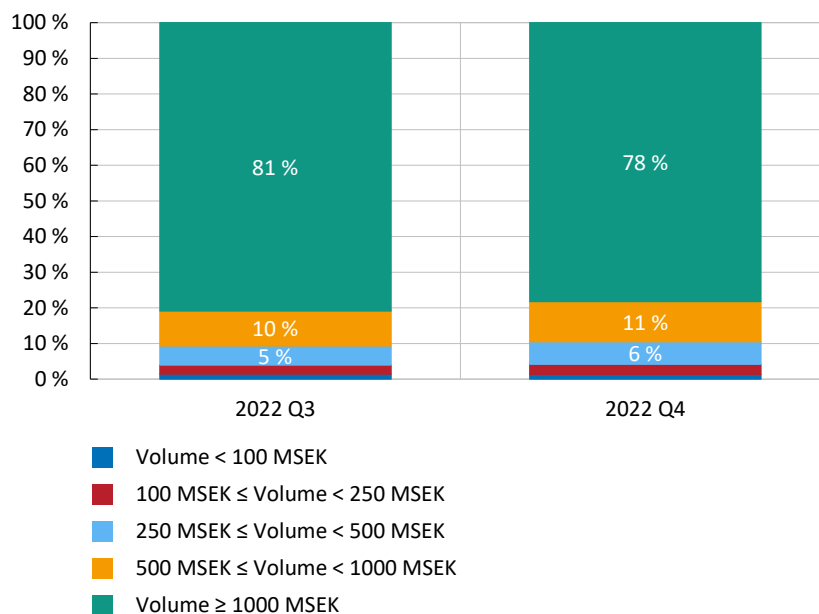


Note: Refers to the composition of the aggregate transaction dataset over a period of four calendar quarters ending with the quarter indicated on the x-axis.

Source: The Riksbank

Chart 3. Breakdown of the transaction dataset by size category

Percentage breakdown of total transaction volume by size category



Note: Refers to the composition of the aggregate transaction dataset over a period of four calendar quarters ending with the quarter indicated on the x-axis.

Source: The Riksbank

Table 9. Composition of the transaction dataset – counterparty categories

Percentage breakdown of the total transaction dataset

First quarter	Last quarter	Banks (\$122)	Financial companies (\$123-\$129) + NDO	Non-financial companies (\$11)
Q4, 2021	Q3, 2022	54	35	11
Q1, 2022	Q4, 2022	55	34	11

Note: Refers to the breakdown of the aggregate transaction dataset over the respective four calendar quarter periods.

Source: The Riksbank

Table 10. Composition of the transaction dataset – transaction size

Percentage breakdown of the total transaction dataset

First quarter	Last quarter	Volume < 100 MSEK	100 MSEK ≤ Volume < 250 MSEK	250 MSEK ≤ Volume < 500 MSEK	500 MSEK ≤ Volume < 1000 MSEK	Volume ≥ 1000 MSEK
Q4, 2021	Q3, 2022	1	3	5	10	81
Q1, 2022	Q4, 2022	1	3	6	11	78

Note: Refers to the breakdown of the aggregate transaction dataset over the respective four calendar quarter periods.

Source: The Riksbank

Specific considerations with regard to this proposal

International practice

Among the central banks that publish reference rates corresponding to SWESTR, there is - as far as the Riksbank is aware - no one that publishes the corresponding information that the Riksbank intends to provide on a regular basis. However, it is relatively common for corresponding information to be provided on an *ad hoc* basis, for example in connection with presentations and speeches in various contexts.

Confidentiality and impact on competition

The Riksbank will carry out a confidentiality assessment of the content of each *Report on the transaction dataset* before it is published. This means that the Riksbank will not publish information that could contribute to the disclosure of confidential information on the transactions or transaction patterns of reporting agents or their counterparties. However, the Riksbank considers that there is little risk that it will not be possible to publish the information on the composition of the transaction dataset referred to in the proposal. Should publication be deemed incompatible with applicable confidentiality rules, the Riksbank will modify the information provided.

Furthermore, the Riksbank considers that publication according to the proposal should not affect competition in the unsecured overnight market, which is the underlying market for SWESTR.

Questions to all consultation bodies

3.3.A: Do you support the proposal to increase the information in the quarterly *Report on the transaction dataset for SWESTR* as proposed by the Riksbank? If no, please explain why you do not support the proposal.

3.3.B: Do you consider that making the proposed information available will facilitate the understanding of the factors influencing the development of the level of SWESTR?

APPENDIX 1 - Questions from the Riksbank

A summary of the questions to which the Riksbank wishes to receive answers in this consultation is presented below. Note that the numbering of the questions refers to the section of the consultation paper in which more information on each question is available.

Early publication

2.1.A: Do you support the proposal to bring forward the publication time of SWESTR to 09:00 and of the average rates and index to 09:05, and to bring forward the publication of any corrected values to 12:00 and 12:05 respectively? If no, please explain why you do not support the proposal.

2.1.B: Do you consider that the proposal to bring forward publication will facilitate the operational management of financial instruments and contracts referencing SWESTR, for example in relation to the settlement of payments?

2.2.A: Do you consider that the adjusted process for determining and publishing SWESTR with adjusted intermediate times is reasonable? Can you meet the requirements for reporting agents in the adjusted process while maintaining the quality of your participation? If no, please indicate what aspects you find problematic as well as the time frame within which you can meet the requirements.

[Question to the Riksbank's monetary policy counterparties].

Increased transparency regarding the transaction dataset

3.2.A: Do you support the proposal to publish daily information on the interest rate levels at the boundary for the trimming of the SWESTR transaction dataset? If no, please explain why you do not support the proposal.

3.2.B: Do you consider that making the proposed information available will facilitate the understanding of the factors influencing the development of the level of SWESTR? *[Question on increased daily information regarding the transaction dataset.]*

3.3.A: Do you support the proposal to increase the information in the quarterly *Report on the transaction dataset for SWESTR* as proposed by the Riksbank? If no, please explain why you do not support the proposal.

3.3.B: Do you consider that making the proposed information available will facilitate the understanding of the factors influencing the development of the level of SWESTR? *[Question on increased information in Report on the transaction dataset for SWESTR.]*

APPENDIX 2 – Process for determining and publishing SWESTR

The Riksbank's proposal on how the process for determining and publishing SWESTR should be adjusted to allow for an earlier publication time.

Table A1.1. Process for determining and publishing SWESTR (ordinary publication)

Proposal for adjusted process for determining and publishing SWESTR

	The Riksbank	Reporting agents
No later than 07:00	In direct connection with transaction reporting, transaction data are also checked to detect anomalous transactions in the form of extreme values. The results are communicated directly to the respective reporting agents, who must follow up any flagged transactions.	Reporting agents must report transaction data for all short-term money market transactions executed on the previous day by 07:00 at the latest.
After 07:00 (no later than 07:30)	The Riksbank carries out pair matching checks on transactions. ²⁵ The Riksbank will carry out this check both when all reporting agents have submitted their reports and as scheduled at 07:30.	If reported data for transactions between reporting agents do not match, the reporting agents should resolve the situation and submit corrections.
No later than 08:00		By 08:00 at the latest, reporting agents shall have reported the status of the extreme value check <u>and</u> the pair matching check, and, where appropriate, shall have made updates to reported transaction data.
08:30	Calculation of SWESTR is carried out at 08:30. This includes trimming the transaction dataset and checking that robustness requirements have been met.	
08:45	Calculation of average rates and index based on SWESTR are carried out at 08:45.	
09:00	Publication of SWESTR.	
09:05	Publication of average rates and index based on SWESTR.	

Source: The Riksbank

²⁵ Pair matching checks refer to the Riksbank's checks that transactions between reporting agents have been identically reported, except for the direction of trade and the counterparty, by both reporting agents.

Table A1.2. Process for determining and publishing SWESTR (possible correction)

Proposal for adjusted process for determining and publishing SWESTR

	The Riksbank	Reporting agents
<i>Ongoing since the morning</i>	In direct connection with transaction reporting, transaction data are also checked to detect anomalous transactions in the form of extreme values. The results are communicated directly to the respective reporting agents, who must follow up any flagged transactions.	Reporting agents take measures to report delayed transactions and/or provide feedback on delayed validations.
<i>When new transaction data has been received by the Riksbank</i>	The Riksbank carries out a new pair matching check as soon as new transaction data are received. ²⁶	If reported data for transactions between reporting agencies do not match, the reporting agent should resolve the situation and submit corrections.
11:30	<p>Calculation of SWESTR is carried out at 11:30. This includes trimming the transaction dataset and checking that robustness requirements have been met.</p> <p>If the new calculation differs by more than 2 basis points (0.02 percentage points) from the determined SWESTR value, a new corrected value for SWESTR shall be determined.</p>	
11:45	<p>Calculation of average rates and index based on SWESTR are carried out at 11:45.</p> <p>Corrected values are determined only if a corrected value for SWESTR has been determined and/or in the event of an error in a previous calculation.</p>	
12:00	Possible publication of corrected SWESTR.	
12:05	Possible publication of corrected values for average rates and index based on SWESTR.	

Source: The Riksbank

²⁶ Pair matching checks refer to the Riksbank's checks that transactions between reporting agents have been identically reported, except for the direction of trade and the counterparty, by both reporting agents.

APPENDIX 3 - SWESTR in 2022

This is a summary of the public information regarding SWESTR and its transaction dataset for the year 2022.

The normal calculation method has been used every day in 2022

All robustness requirements have been met on all value days in 2022. In other words, the total transaction volume has been at least SEK 6 billion each day, at least three reporting agents have contributed transactions each day, and the most dominant reporting agent for the day has not contributed more than 75 per cent of the total transaction volume on any day. Neither has there been any technical failure preventing calculation using the normal calculation method.

The Riksbank has therefore used the normal calculation method for all SWESTR value days throughout the year. The normal calculation method is a volume-weighted mean of the interest rates in the trimmed transaction dataset.

SWESTR has corresponded well with the Riksbank's policy rate²⁷

The transaction-based reference rate SWESTR has continued to correspond well with the Riksbank's policy rate in 2022; see Chart A3.1 below.

A simple mean of the determined SWESTR values in 2022 was 0.614 per cent. If the anomalous SWESTR value on the last business day of 2022, i.e. on 30 December 2022 when SWESTR was -9.038 per cent, is excluded, the average was instead 0.652 per cent. For more information on the anomalous value on the last business day of the year, see below.

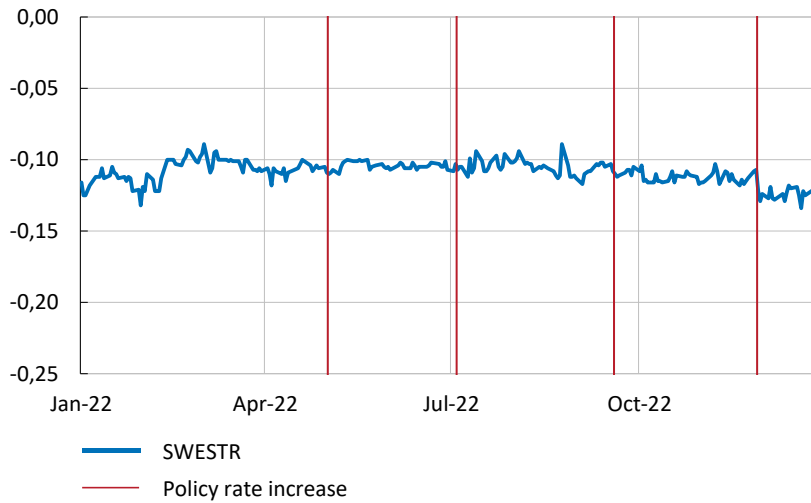
Over the year, the Riksbank raised the policy rate by a total of 2.5 percentage points on four occasions. The policy rate rises have had the expected impact on SWESTR. Adjusted for the policy rate applicable at the time, SWESTR averaged -0.154 per cent. If the anomalous SWESTR value on 30 December 2022 is excluded, this average instead becomes -0.109 per cent. A tendency towards a marginally larger difference between the policy rate and SWESTR can be observed after the policy rate rise that was effective on 30 November 2022.

In other words, SWESTR has tended to be just below the interest rate that the Riksbank's monetary policy counterparties face on the funds they place in the Riksbank's deposit facility, which is the policy rate less 0.1 percentage points. Only the Riksbank's monetary policy counterparties have access to the Riksbank's deposit facility. SWESTR, on the other hand, is based on transactions in which the reporting agents, who are all monetary policy counterparties, have borrowed funds from a broader customer base.

²⁷ The Riksbank's policy rate is the interest rate previously referred to as the Riksbank's repo rate.

Chart A3.1. Difference between SWESTR and the policy rate

Difference from Riksbank policy rate, percentage points

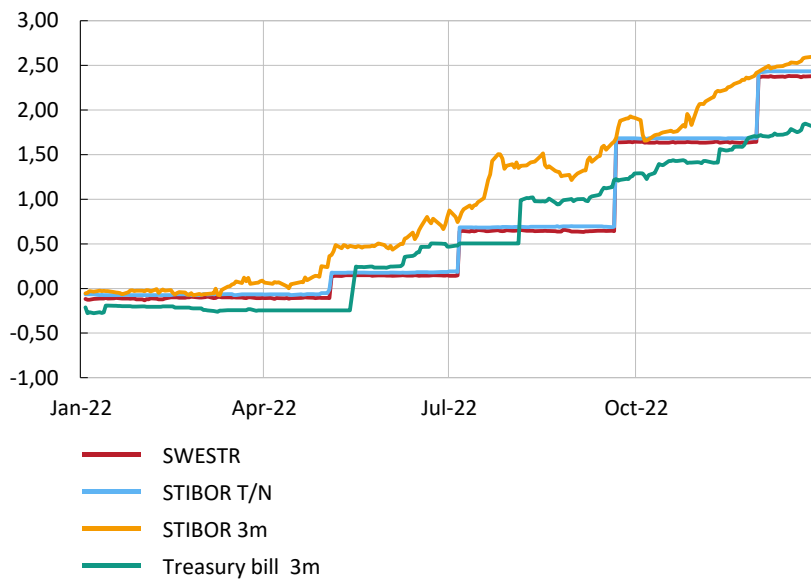


Note. In order to adjust for the Riksbank’s policy rate rises, the data series shows the difference between the Riksbank’s policy rate and SWESTR.

Source: The Riksbank

Chart A3.2. SWESTR and short-term market rates

Actual levels, per cent



Note. On 30 December 2022, SWESTR was valued at -9.038 per cent.

Source: The Riksbank, Bloomberg, Swedish Financial Benchmark Facility

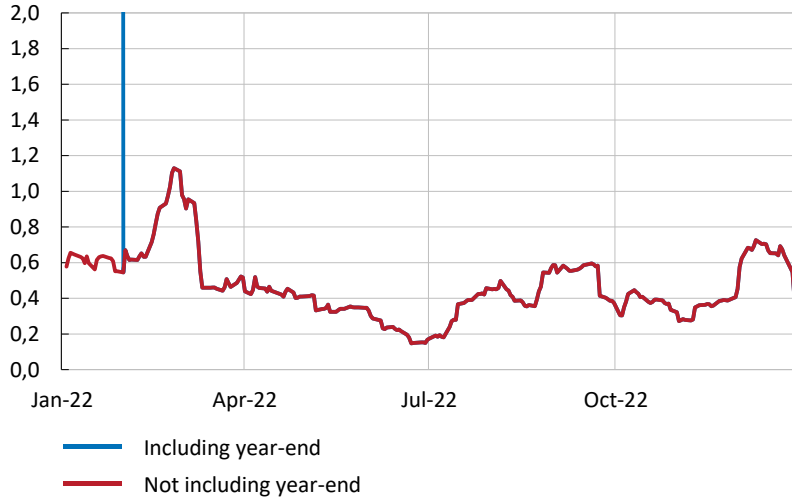
SWESTR has shown covariation with short-term market rates

As Chart A3.2 shows, over the year SWESTR has also corresponded well with other short-term money market rates, in particular those, like SWESTR, with a very short maturity. Apart from the anomalous value on 30 December 2022, the spread between

the two reference rates SWESTR and STIBOR T/N has remained stable at around 0.04 percentage points.

Chart A3.3. Volatility of SWESTR - standard deviation

Standard deviation in basis points based on a rolling window of 20 value days

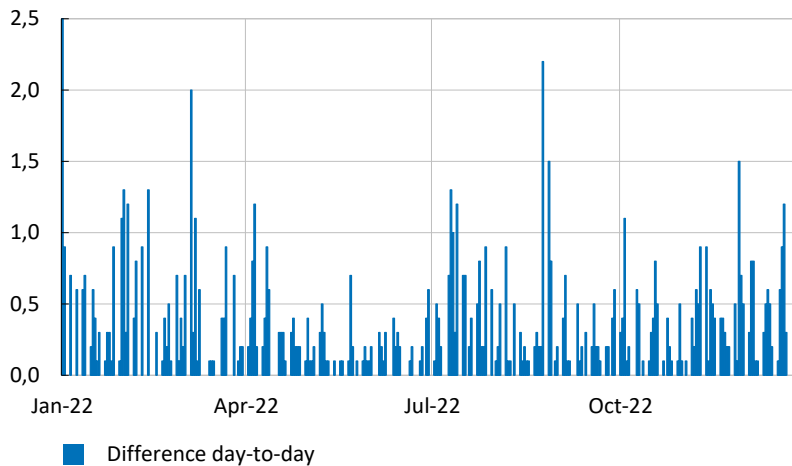


Note. In order to adjust for the Riksbank’s policy rate rises, the data series show the standard deviation of the difference between the Riksbank’s policy rate and SWESTR, with or without the year-end. Due to the value on 30 December 2021, the standard deviation was close to 62 basis points between 3 and 28 January 2022. On 30 December 2022, the standard deviation was 249 basis points.

Source: The Riksbank

Chart A3.4. Volatility of SWESTR – day-to-day change

Absolute change in basis points compared to the previous value date value for SWESTR



Note. In order to adjust for the Riksbank’s policy rate rises, the data series shows the day-to-day difference in the spread between the Riksbank’s policy rate and SWESTR. The absolute value of the day-to-day difference on 3 January 2022 was 285 basis points. On 30 December 2022, the corresponding absolute difference was 1141 basis points.

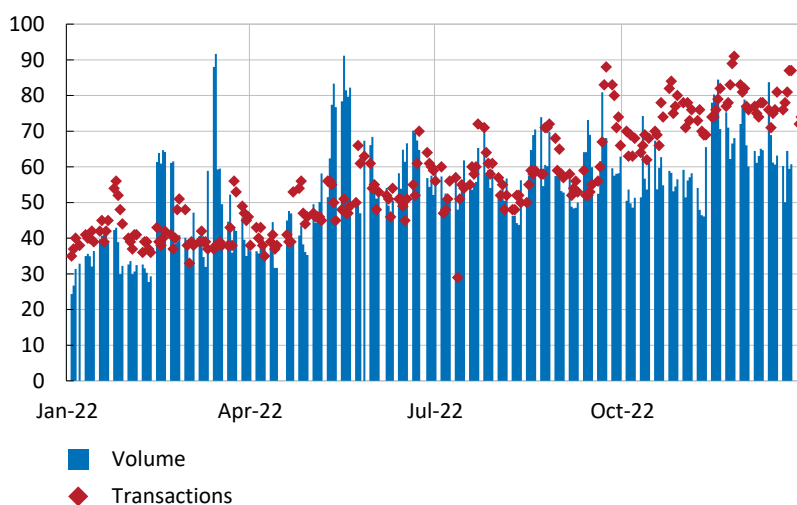
Source: The Riksbank

Limited volatility in SWESTR

The good correspondence to the policy rate is also reflected in the fact that, adjusted for the policy rate, SWESTR has shown limited volatility over the year, as illustrated in Chart A3.3 above. Moreover, except for policy rate rises and at the turn of the year, the absolute day-to-day difference in the level of SWESTR has only exceeded 0.02 percentage points on one occasion during the year; see Chart A3.4 above.

Chart A3.5. Transaction dataset for SWESTR - total volume and number of transactions

SEK billion and number of transactions



Source: The Riksbank

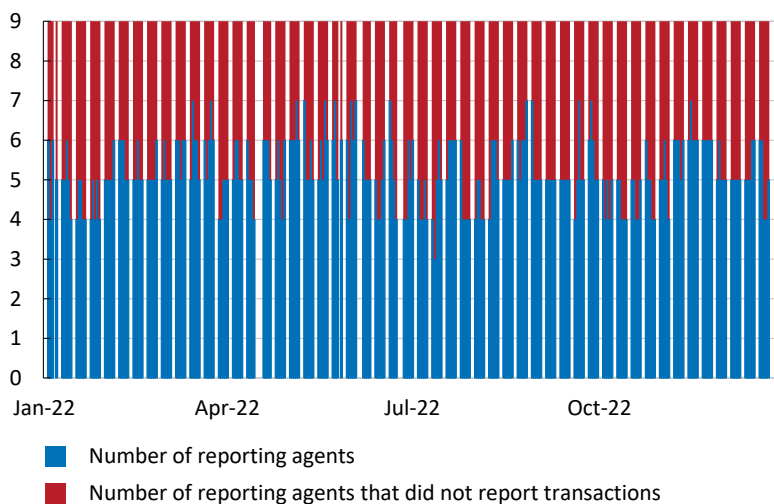
Gradually increasing transaction volume in 2022

In 2022, the total transaction volume underlying SWESTR averaged around SEK 54 billion before trimming. An upward trend can also be observed during the year; see Chart A3.5 above. The number of transactions also increased during the year, averaging 56. Two value days in 2022 stand out compared to the rising trend in the number of transactions in the SWESTR dataset. One major reporting agent had technical problems and missed the first calculation of SWESTR for value day 12 July 2022. On 30 December 2022, the number of transactions was lower ahead of the year-end, see below.

Typically, five reporting agents per day contributed transactions to the SWESTR dataset; see Chart A3.6 below.

Chart A3.6. Transaction dataset for SWESTR - number of reporting agents

Number of reporting agents that have contributed at least one transaction to the transaction dataset



Source: The Riksbank

Clear year-end effect for SWESTR 30 December 2022

The money market is significantly affected by banks, including reporting agents to SWESTR, trying to reduce the size of their balance sheets for the year-end. One of the reasons for doing this is that they on the margin want to minimise the resolution fee and the risk tax they have to pay based on the size of certain balance sheet items at the year-end.^{28,29}

This is visible in the data for SWESTR through notably fewer transactions and a lower total volume on 30 December 2022, see Chart A3.5. It is also visible in the fact that the number of reporting agents that had SWESTR transactions was lower on 30 December 2022, see Chart A3.6. In general, the transactions were also done at significantly lower interest rates on the day in question. Therefore, SWESTR was -9.038 per cent on 30 December 2022, which is around 11.4 percentage points lower than the previous value day.

²⁸ The above description of the basis for the resolution fee and the risk tax has been simplified considerably. For further details, see for instance the [National Debt Office's website](#) regarding the resolution fee and the [lag \(2021:1256\) om riskskatt för kreditinstitut](#) regarding the risk tax.

²⁹ Transactions of the type used for SWESTR increase the basis for the resolution fee and the risk tax. The banks therefore often offer notably lower deposit rates over the year-end, compared with the other days of the year, and they also try to re-route customers' excess liquidity to other investments that are not on the banks' balance sheets, for instance, money market instruments such as treasury bills.



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