



Annual report on SWESTR

The development of SWESTR in 2023

Markets Department

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Annual report on SWESTR (Swedish krona Short Term Rate)

About the report

Sveriges Riksbank started publishing values for the transaction-based reference rate SWESTR on 2 September 2021. The reference rate is based on transaction data from the banks' overnight deposits and is collected from the Riksbank's monetary policy counterparties. Transactions from nine banks are currently used for SWESTR.

As the administrator of SWESTR, the Riksbank is responsible for monitoring, evaluating and ensuring compliance of SWESTR with the IOSCO Principles for Financial Benchmarks. The publication of this report is also part of safeguarding transparency in the calculation of SWESTR. The report refers to the calendar year 2023.

The report is divided into three parts.

The *first part* examines whether SWESTR is reliable in relation to the development of the Riksbank's policy rate and in relation to market rates. It also illustrates and comments on the transaction dataset and its representativeness.

The *second part* highlights the development of the underlying data for SWESTR. For example, it takes into account differences in the interest rates faced by different sectors and whether the current transaction dataset captures the entire relevant overnight market for unsecured loans.

The *third part* evaluates the criteria set to maintain a robust SWESTR at the time of calculation. The criteria are trimming levels and robustness criteria.

Summary

The design of SWESTR and the attached framework is judged to present a true overnight deposit rate for lending without collateral. SWESTR's transaction dataset is also judged to be representative for this type of lending. Further, the transaction dataset shows that reporters borrow Swedish kronor at an interest rate close to the Riksbank's deposit rate. The parameters set up for a reliable SWESTR, i.e. trimming levels and robustness criteria, are still judged to be adequate.

1 Methodology

This part of the report focuses on how well the methodology used to derive SWESTR works to produce a reference rate that reflects the overnight rate. This means following the Riksbank's policy rate and deposit rate and being representative in relation to market rates. It is important that SWESTR is representative so that confidence in it as a reference rate can be maintained.

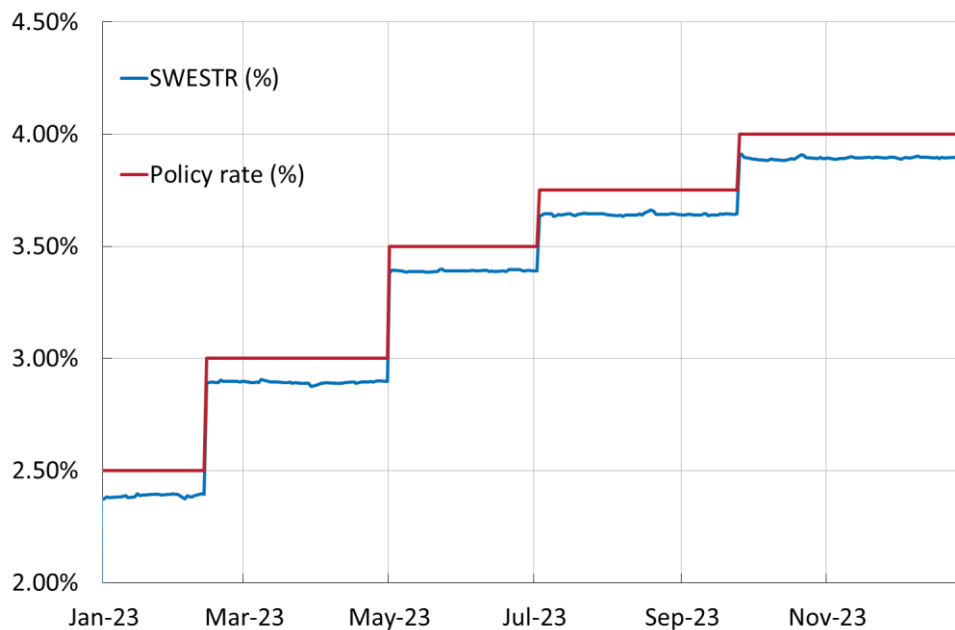
To summarise, the reliability of SWESTR is considered good and the conditions are right for it to remain so. The volumes in the SWESTR transaction dataset remain stable, indicating that market liquidity remains favourable. Deposits mainly come from the financial sector in the broad sense, which means that the level of SWESTR is mainly determined by large transactions. However, transactions with the non-financial sector have increased.

1.1 Reliability of published data

During 2023, the Riksbank increased the policy rate by 50 basis points on two occasions and by 25 basis points on two occasions. SWESTR closely followed the Riksbank's policy rate, averaging 10.8 basis points below the policy rate if the last day of the year is disregarded. This corresponds to a level just below the Riksbank's deposit rate. If the last day of the year is included, the average deviation from the policy rate was -14.5 basis points. On the last banking day of 2023, SWESTR recorded a clear, temporary, deviation due to the banks' pricing behaviour on that day. This deviation is referred to as the year-end effect. The explanation for the decrease is that banks tend to offer their customers lower interest rates over year-end, as a way of compensating themselves for costs related to bank resolution fees and bank taxes.

Diagram 1. SWESTR and the Riksbank's policy rate

Per cent.



Note. The value for SWESTR on 29 December 2023 was -5.413 per cent.

Source: The Riksbank

The pass-through to SWESTR of the Riksbank's policy rate changes (increases only) over the period was distinct and was generally fully realised (see 0, Column E). Moreover, there was no significant or systematic difference in pass-through when comparing different groups of counterparties to the reporters. Although non-financial corporations generally faced lower and more volatile deposit rates, the pass-through of policy rate changes was also stable for this group of counterparties.

Table 1. Changes in policy rates and SWESTR, 2022–2023, and pass-through.

Per cent and basis points respectively

	Policy rate	Δ Policy rate	SWESTR	Δ SWESTR	Pass-through
	(A)	(B)	(C)	(D)	(E)
4 May 2022	0.25	0.25	0.14	0.249	100%
6 July 2022	0.75	0.50	0.643	0.496	99%
21 September 2022	1.75	1.00	1.640	0.998	100%
30 November 2022	2.50	0.75	2.378	0.735	98%
15 February 2023	3.00	0.50	2.891	0.498	100%
3 May 2023	3.50	0.50	3.383	0.486	97%
5 July 2023	3.75	0.25	3.637	0.248	99%
27 September 2023	4.00	0.25	3.908	0.264	106%

Source: The Riksbank

The spread of interest rates, measured as the difference between the two trimming limits, narrowed marginally between 2022 and 2023, from 9 to 8 basis points on average. Despite the fact that non-financial corporations received lower interest rates over the course of the year, the difference between the trimming levels of the transaction dataset was unaffected, as lower interest rates were excluded in the trimming process.

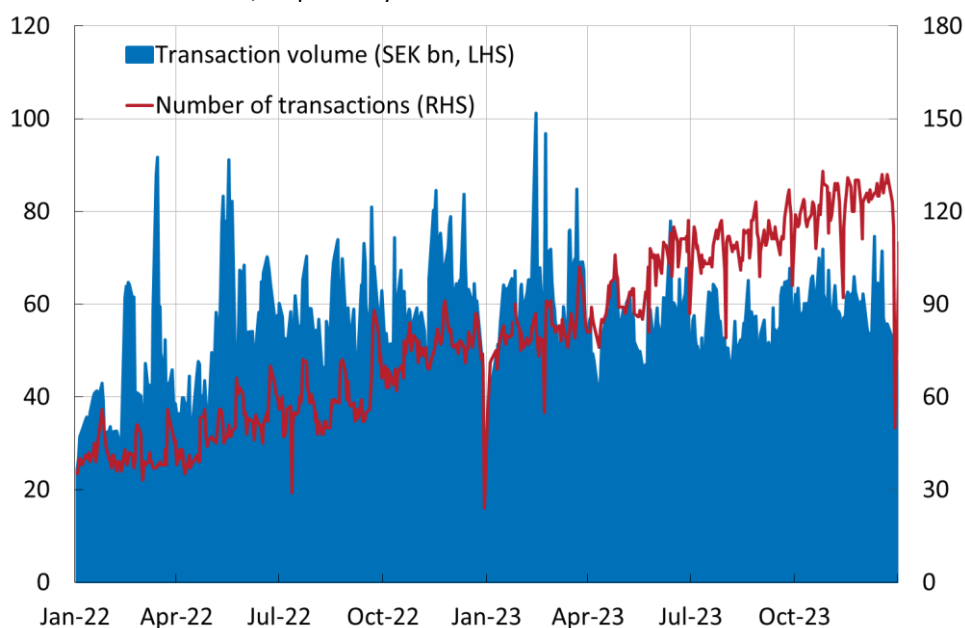
SWESTR is considered to be a stable reference rate with a high degree of reliability when it comes to deciding the interest rate for an overnight loan without collateral.

1.2 Transaction dataset

The transaction volumes on which SWESTR is based increased from SEK 53 billion to SEK 58 billion on average per day between 2022 and 2023. However, during the period analysed, there is no evidence of a trend change. On the other hand, the number of transactions steadily increased over the period (Diagram 2). Consequently, the number of smaller transactions increased, reflecting the growing interest of financial and non-financial corporations in depositing funds with banks relative to interbank deposits.

Diagram 2. Transaction volume and number of reporters (daily data)

SEK billion and number, respectively.

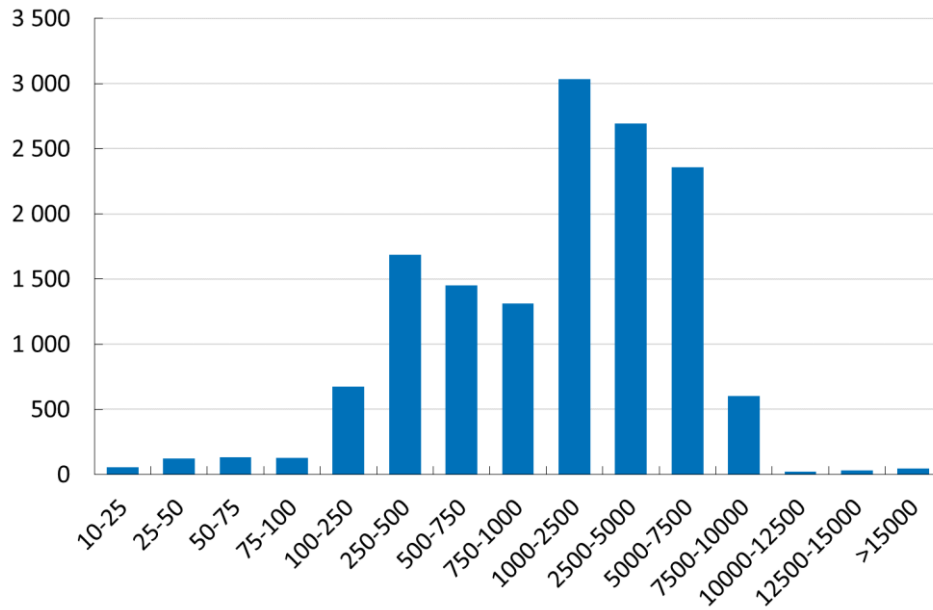


Source: The Riksbank

However, the transaction dataset continued to be dominated by a smaller number of transactions involving large amounts, mainly from banks. Transactions of amounts between SEK 1,000 and 7,500 million weighed heavily in the calculation of SWESTR. At the same time, transactions of SEK 100 million or less accounted for a negligible share, which therefore had little impact on the published SWESTR (Diagram 3).

Diagram 3. Transaction dataset broken down by transaction size in intervals

SEK million (2023)

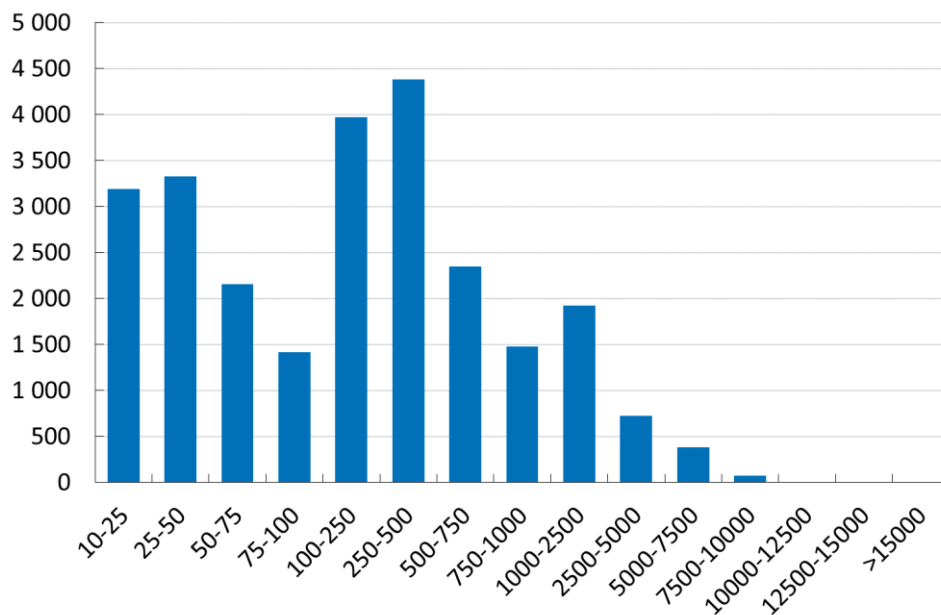


Source: The Riksbank

However, looking at the *number* of transactions gives a different picture. About a quarter of the *number* of transactions in the dataset were in the range of SEK 10–50 million, while almost half of the transactions were in the range of SEK 50–500 million (Diagram 4).

Diagram 4. Transaction dataset broken down by number of transactions in each interval

SEK million (2023)

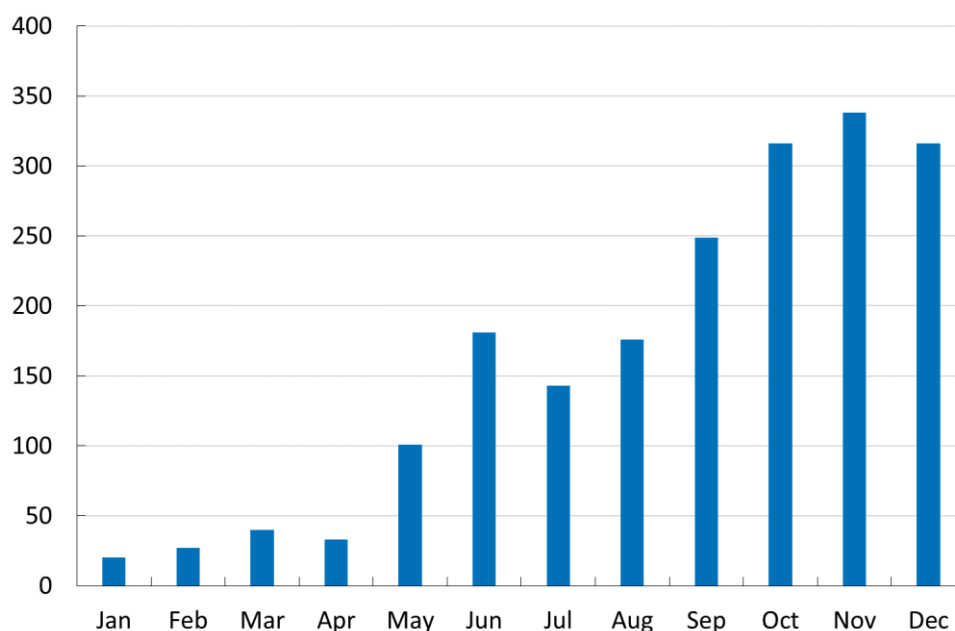


Source: The Riksbank

Transactions of SEK 1,000 million or more accounted for only 12 per cent of the number of transactions during the period. However, as SWESTR is volume-weighted, they still contributed significantly to the level at which SWESTR was quoted.

The categories of counterparties from which reporters receive deposits are still clearly distinct. It can also be noted that a small number of transactions lacked counterparty classification as they had no LEI. Although few in number, this type of transaction increased in 2023 (Diagram 5). However, transactions without an LEI did not affect the level of SWESTR, as they accounted for less than 0.6 per cent of the total transaction dataset in 2023.

Diagram 5. Number of transactions per month not defined by an LEI (2023)



Note. For confidentiality reasons, these data are summarised by month.

Source: The Riksbank

Overall, the transaction dataset is considered stable.

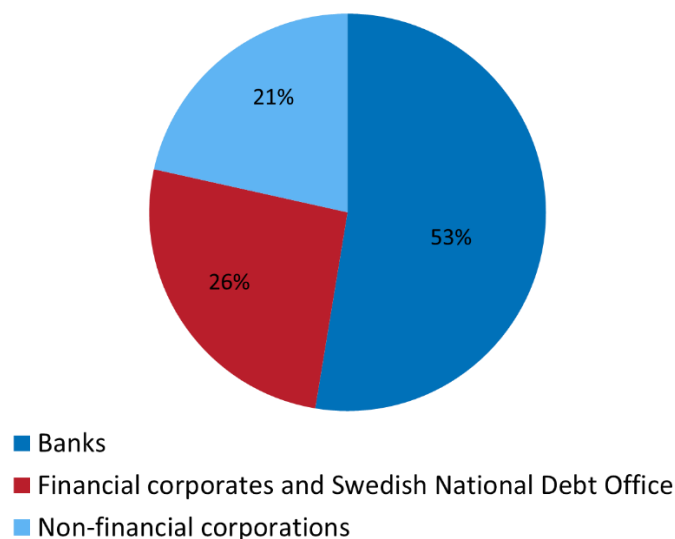
1.3 Representativeness

This is the breakdown of the transactions forming the transaction dataset for SWESTR.

- Transactions from banks and financial corporations, including the Swedish National Debt Office, account for 79 per cent of total transactions.
- Transactions from non-financial corporations account for 21 per cent of total transactions

The breakdown of transactions is shown in Diagram 6.

Diagram 6. Volume of transaction dataset by type of counterparty (percentage share, 2023)



2 Underlying data

This part of the report highlights how representative the transaction dataset is for the overnight market for unsecured deposits.

To summarise, the overnight market continues to be the most liquid part of the unsecured deposit market. Banks and financial corporations deposit kronor at an interest rate that is stable at a level close to the Riksbank's deposit rate. Non-financial corporations invest funds in kronor at a lower interest rate but relatively close to the interest rates banks and financial corporations receive. Non-financial corporations represent an increasing share of the transaction dataset for SWESTR.

2.1 Maturity analysis

Almost all unsecured deposits (97.3 per cent) were placed in the overnight market, while a very small share was placed in the market for deposits from *tomorrow to next business day* (T/N) or up to one week. Furthermore, the transaction dataset on which SWESTR is based had a very good coverage of the overnight market for unsecured loans in Swedish kronor. If SWESTR's transaction data is compared with data from the

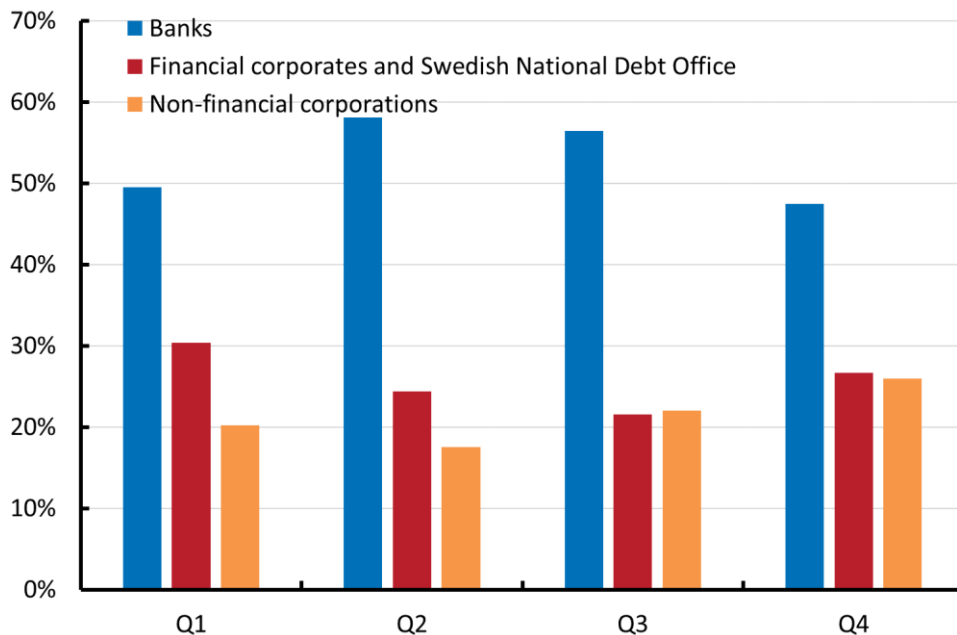
financial market statistics¹, these statistics indicate that SWESTR was based on overnight transactions, which represented around 98 per cent of the underlying market in 2023.

2.2 Sectoral analysis

Almost 55 per cent of reporters' unsecured overnight deposits were from other banks in 2023, which is slightly lower than in 2022 (53 per cent). Investments by non-bank entities have thus become more important than before.

In the second half of the year, the share of deposits from other banks declined both in terms of share and volume, in favour of a larger share of deposits from mainly non-financial corporations (Diagram 7). Overall, investments by financial and non-financial corporations accounted, on average, for a quarter and a fifth of overnight market deposits respectively in 2023.

Diagram 7. Share of total transaction dataset from different counterparty categories (per cent of total deposits). Average per quarter, 2023



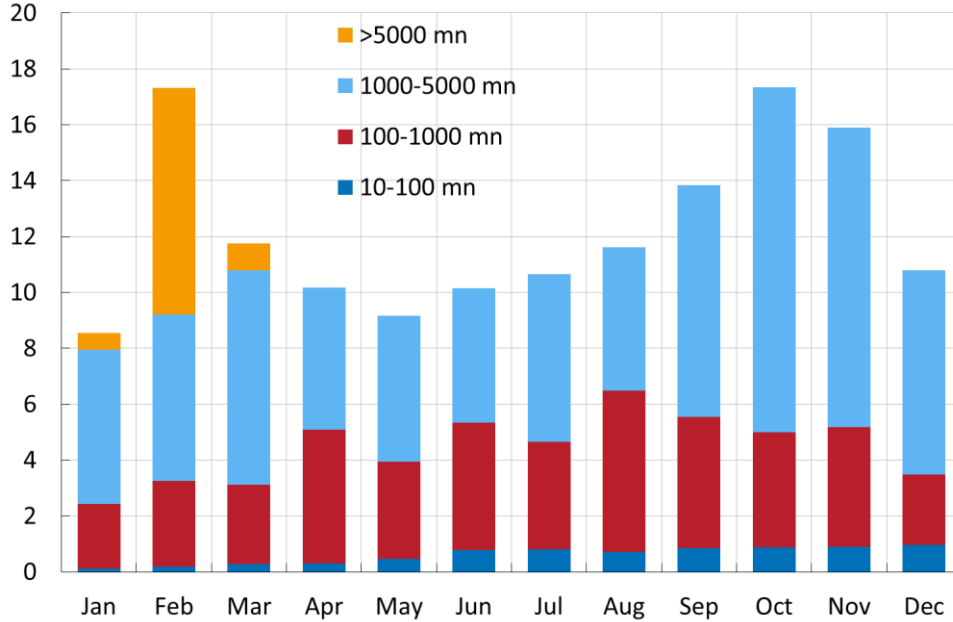
Source: The Riksbank

Increased non-bank deposits are probably explained by higher interest rates on the market for deposits with very short maturity, as the Riksbank raised its policy rate during the year. Large non-financial corporations and financial corporations thus noticed a better return on the overnight market. For non-financial corporations, investments with a transaction volume of between SEK 1 billion and SEK 5 billion increased in particular in the latter part of the year (Diagram 8, light blue bar).

¹ Statistics Sweden collects balance sheet statistics from monetary financial institutions (MFIs) on a monthly, quarterly and annual basis, on behalf of the Riksbank.

Diagram 8. Development of transactions of different sizes for non-financial corporations.

Total transaction volume in 2023 within different intervals of transaction size in SEK billion and on a daily average basis each month.



Source: The Riksbank

At the same time, the overall volume of the smallest transactions with non-financial corporations (SEK 10–100 million) increased significantly over the year, albeit from a very low level (Diagram 8, dark blue bar).

For non-financial corporations, this type of small-scale investment (<SEK 100 million) has increased from 5 per cent to 57 per cent of the number of transactions in this group, indicating a new dynamic (Tabell 1). However, as a share of transaction volumes, such small transactions still accounted for a limited share of the dataset, 3 per cent of the total transaction dataset and 5 per cent of the transaction dataset for non-financial corporations.

Tabell 1. Transactions with a volume of less than SEK 100 million, 2023

Per cent and SEK million in 2023, 2022 in brackets

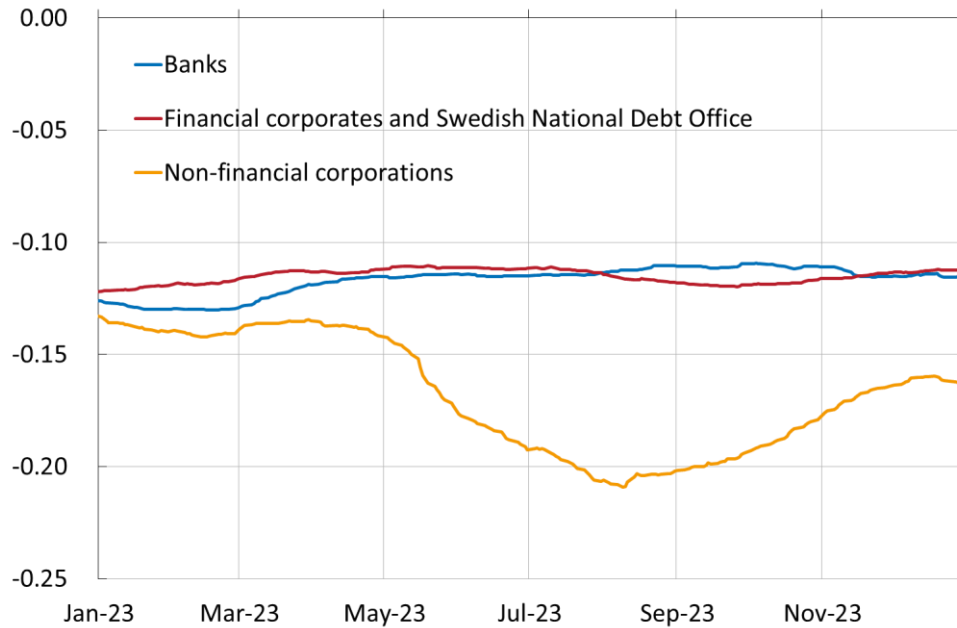
	Entire dataset	Banks	Financial corporations and Swedish National Debt Office	Non-financial corporations
Share of transaction volume derived from transactions < SEK 100 million	3% (1%)	2% (2%)	2% (1%)	5% (0%)
Share of the number of transactions originating from transactions < SEK 100 million	38% (29%)	28% (31%)	42% (31%)	57% (5%)
Average size of individual transactions	566 (955)	522 (729)	1,055 (1,574)	418 (1,433)
Median size of individual transactions	193 (300)	295 (250)	139 (359)	62 (687)

Source: The Riksbank

As the overall volume of slightly larger transactions increased among non-financial corporations, they received, on average, a slightly more competitive interest rate from the banks. From September onwards, the average rate received by these corporations approached the average rate received by other counterparties (Diagram 9).

Diagram 9. Interest rate differential against the Riksbank's policy rate for different counterparty categories

Percentage points. Rolling average 60 banking days.



Source: The Riksbank

Note. Year-end values are excluded from the calculations.

Over a longer period, however, the reporters have been slower to adjust their deposit rates for non-financial corporations than for other counterparties. When the Riksbank's policy rate was negative, there was a tendency for non-financial corporations to receive a higher interest rate than others. When the Riksbank raised its policy rate, the banks were not as quick to adjust deposit rates upwards for these companies as for others, which meant that these companies temporarily received a lower interest rate in relation to the Riksbank's policy rate.

3 Parameters for the calculation of SWESTR

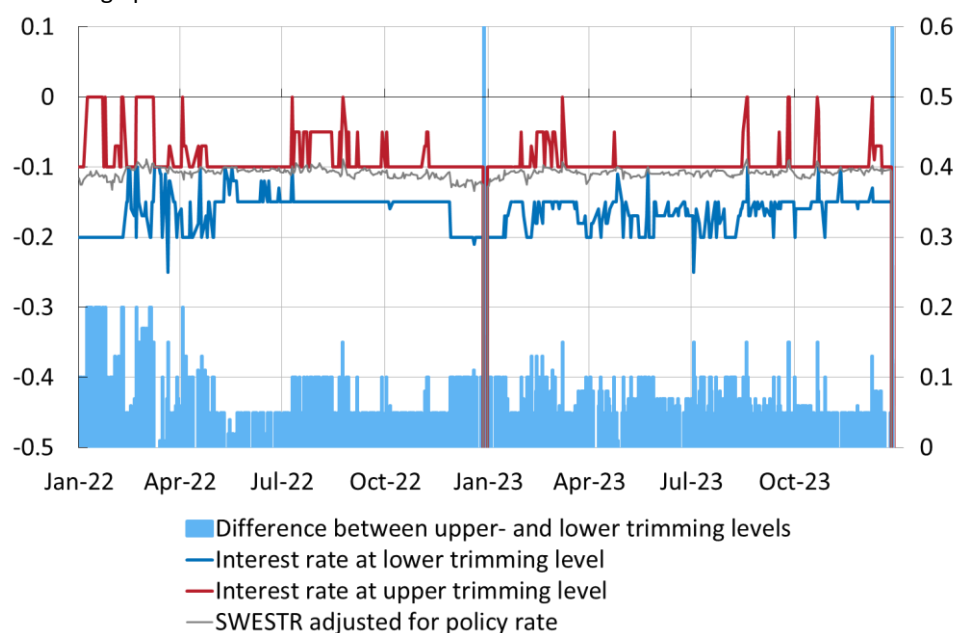
This part of the report evaluates the criteria for calculating SWESTR. This includes evaluating the trimming level and robustness criteria. If the transaction dataset does not fulfil the robustness criteria, an alternative calculation method is used. The parameters set to maintain a robust SWESTR are still deemed to be adequate, while developments in the overnight market have reinforced the conditions for a high level of confidence in SWESTR.

3.1 Trimming level

SWESTR is determined as a volume-weighted average rate after the transaction dataset has been trimmed by 25 per cent of the total volume. Trimming means excluding 12.5 per cent of the transactions with the highest interest rate and 12.5 per cent of the transactions with the lowest interest rate. The purpose of trimming is to obtain a more homogeneous and stable transaction base, which is not affected by possible outliers. Consequently, transactions with unusually high or unusually low interest rates, which may therefore not be determined on a market basis, are excluded. From the transactional evidence, it appears that the data are biased towards *low* extremes (Diagram 10).

Diagram 10. Difference between SWESTR and policy rate, plus trimming limits

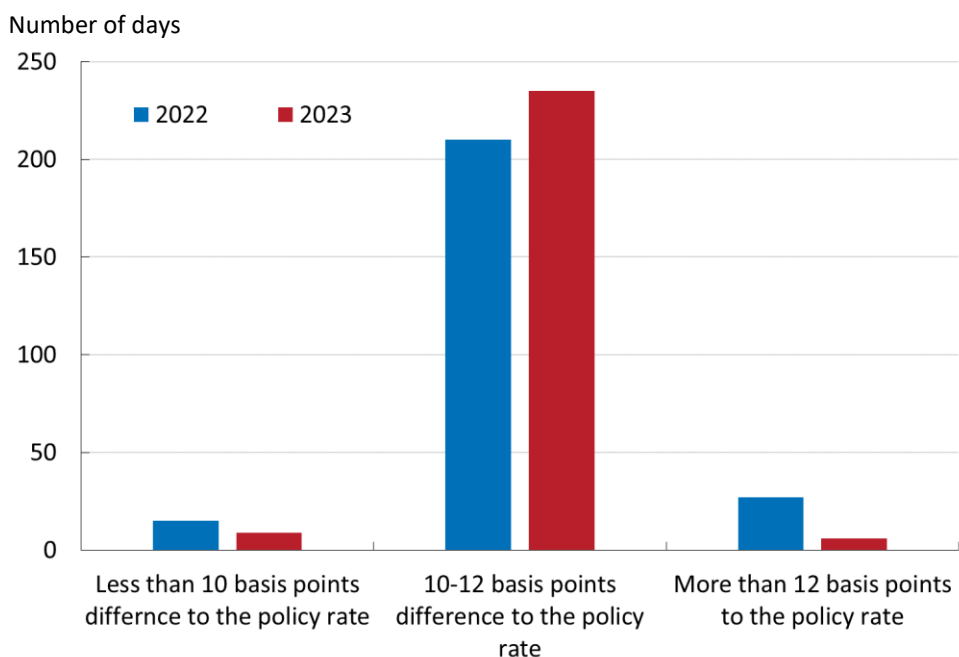
Percentage points.



Source: The Riksbank

According to international practice, there are examples of different levels of trimming. However, previous analyses show that more extensive trimming would result in a marginally higher SWESTR and slightly lower volatility (Pettersson/Wallin-Johansson 2023). Volatility is already low with the current level of trimming. Diagram 11 shows that the overwhelming majority of SWESTR values are between 10 and 12 basis points below the Riksbank's policy rate. This was more the case in 2023 than in 2022. A trimming level of 25 per cent is therefore still considered adequate.

Diagram 11. Deviation of SWESTR from the policy rate number of days in 2022 and 2023



Source: The Riksbank

3.2 Robustness criteria

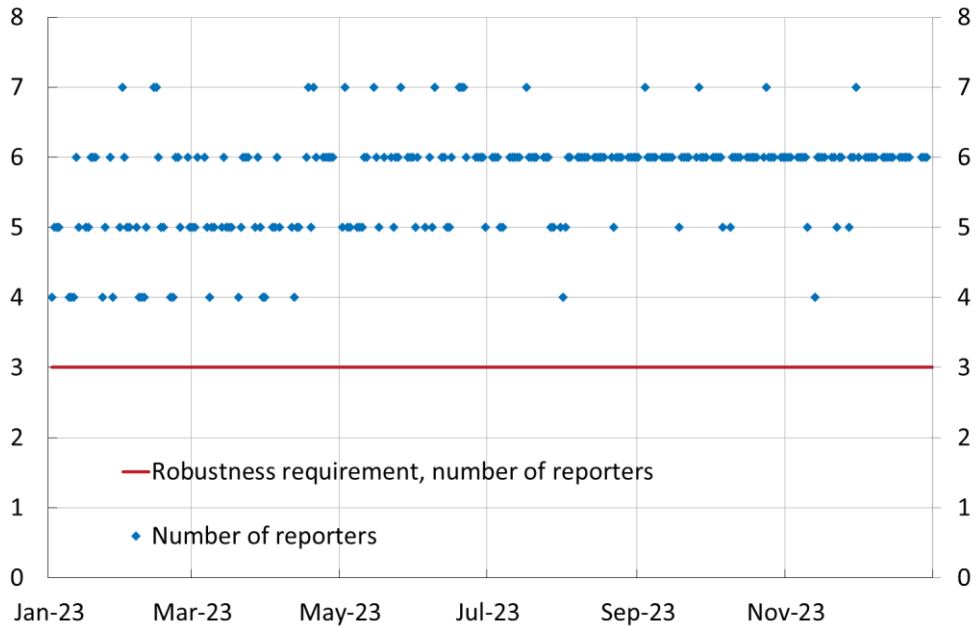
The Riksbank's regulatory framework for SWESTR includes continuity measures, meaning that a SWESTR listing can be published even if one or more of the so-called robustness requirements for the transaction dataset are violated. In 2023, the robustness criteria meant that the transaction dataset could be considered robust as long as

1. at least three banks report transactions
2. the total transaction dataset from all banks amounts to at least SEK 6 billion, and
3. a single reporter accounts for no more than 75 per cent of the reported transactions.

An alternative calculation method is used in case of violation of one or more criteria and in case of technical failure. In 2023, the robustness criteria were not violated on any occasion but the alternative calculation method was used for the 25 January value due to a technical error.

The number of reporters was typically six out of a possible nine in 2023, and there were never as few as three reporters. On 17 occasions, only four banks reported transactions, primarily in early 2023 (Diagram 12).

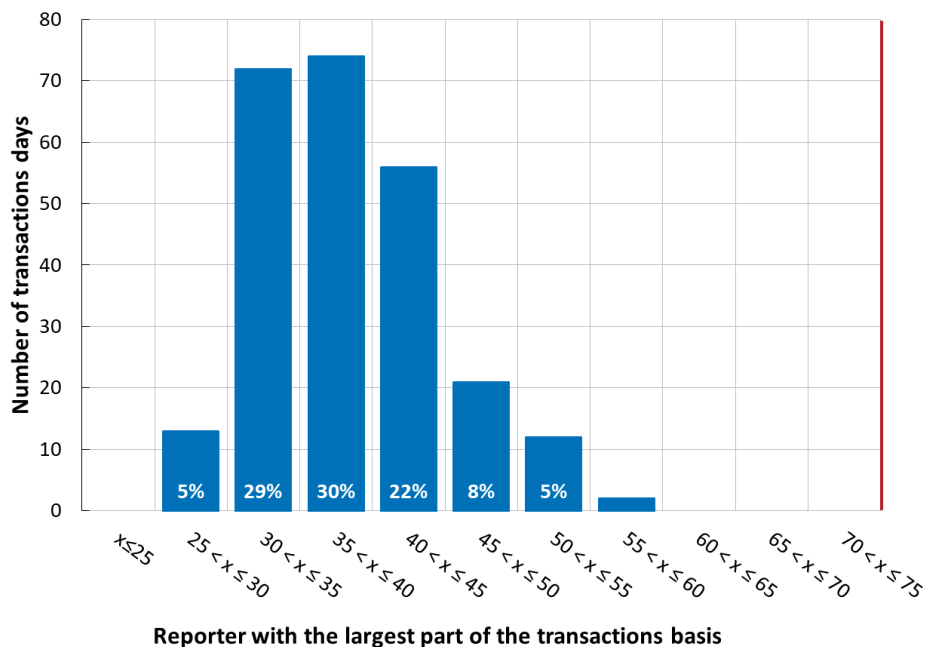
Diagram 12. Robustness requirements for SWESTR. Number of reporters



Source: The Riksbank

Of the nine banks that reported to SWESTR, the four largest still account for just over 99 per cent of transactions, which is deemed sufficient. This is because the concentration of transactions from *individual* reporters fluctuated around 40 per cent, well below the tolerance value of 75 per cent (Diagram 13). In this context, it is worth noting that concentration was lower in the last months of the year, when the share of transactions with financial and non-financial corporations increased. The number of reporters also remained more stable at a higher level in the second half of the year.

Diagram 13. Robustness requirements for SWESTR. Concentration on the counterparty with the highest transaction volume and concentration requirements (> 75 per cent). 2023.

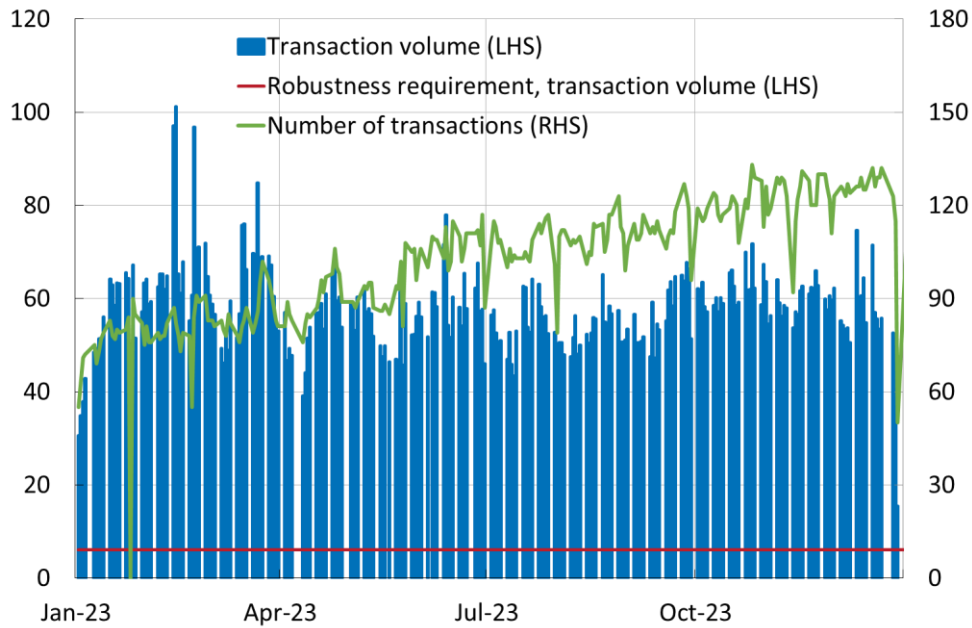


Note. Due to confidentiality reasons, this figure is presented with bars representing concentration ranges.

Source: The Riksbank

The volume of transactions on an average day was SEK 58 billion. On the last day of the year, the transaction volume was around SEK 15 billion, which was the lowest of the year but still far from the robustness requirement of SEK 6 billion (Diagram 14). The second smallest transaction volume of the year was just over SEK 30 billion on another occasion. The number of transactions trended upwards over the year, with an average of 100 transactions reported per day (average in 2022: 56 transactions).

Diagram 14. Robustness requirements for SWESTR, total transaction volume (SEK million) and number of transactions.



Source: The Riksbank

Based on historical data, there is no reason to question any of the current robustness requirements. The data show a robust transaction dataset, which improved in 2023. However, on 27 May 2024, the Executive Board of the Riksbank decided on changes to the Riksbank's regulatory framework, partly meaning that the limit for an acceptable transaction volume was lowered from SEK 6 billion to SEK 2 billion with effect from 23 September 2024. The regulatory framework was changed to reduce the risk of violating the robustness requirement on the last day of the year. If the robustness requirement were to be violated, the Riksbank would have to use the alternative calculation method.

Glossary

Overnight rate: The interest earned on overnight investments or deposits.

Financial company: This includes insurance companies, asset managers and fund management companies.

Non-financial company: Companies whose main activity is not financial, such as companies in the manufacturing industry.

IOSCO: International Organization of Securities Commissions, an organisation whose members regulate and supervise securities markets. Among its other activities, the organisation has published a framework of principles for the development and administration of financial benchmarks (Principles for Financial Benchmarks, July 2013). This framework is important for how the Riksbank administers SWESTR.

Counterparty: Agent from which the reporter receives deposits at a given interest rate and transaction size. The counterparty in this case may be another bank, the Swedish National Debt Office, a financial company or a non-financial company.

Transaction dataset: The sum of transactions between reporters and counterparties that forms the basis for the calculation of SWESTR.

Reporter: A bank reporting interest rate, transaction size and counterparty to the Riksbank's TORA system.

Reference rate: Interest rate used to price other financial instruments or as interest in other forms of contract.

Robustness criterion: Requirement for the transaction dataset established at a level that ensures that SWESTR is a stable and representative reference rate. The three robustness criteria are total transaction volume over one day (at least 6 billion), number of reporters (at least 3) and a maximum level for the share of the transaction base that a single reporter may account for (the concentration requirement, maximum 75 per cent).

Trimming level: The Riksbank excludes transactions with the highest and lowest interest levels. This exclusion involves 12.5 per cent of the transaction volume with the highest interest rates and 12.5 per cent of transactions for the lowest interest rates.



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