



RIX, second four-month period

May – August

Payments Department

2019

Aim

The aim of this report is briefly to describe RIX, the Riksbank's system for the transfer of funds in accounts, and to report statistics concerning payments, collateral, incidents, changes in participants and other events affecting RIX. The report is primarily aimed at participants in the RIX system.

The report is published three times per year. Other information that may be relevant to the RIX system's participants will be regularly communicated via email and in meetings. Statistics on payments are also made available in weekly reports and in the Riksbank's annual report.

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Abbreviations

RIX	The Riksbank's system for the transfer of funds in accounts
QCMS	The Riksbank's system for the management of collateral for loans in RIX
LOM	Liquidity Optimization Mechanism
RTM	Real-Time Mechanism
SWIFT	Society for Worldwide Interbank Financial Telecommunications
FSPOS	Finansiella Sektorns Privat-Offentliga Samverkan (Group for private-public cooperation in the financial sector)
SCP	Scandinavian Cash Pool
REC	Receiver Code
IMM day	International Monetary Market day
CSD	Central Securities Depository

The four-month period in brief

- Technical availability for the period was 99.97 per cent
- Average turnover: SEK 572 billion
- Highest turnover: SEK 1,151 billion
- Lowest turnover: SEK 305 billion
- Average number of transfers: 22,888
- Highest number of transfers: 39,431 (highest ever number of transfers in RIX)
- Lowest number of transfers: 17,339
- Mean value of pledged assets: SEK 205 billion¹
- Accumulated cost coverage for first and second four-month periods of 2019: 107 per
- During the period, one new participant has joined RIX. There are currently 34 participants in RIX.

¹ Estimated as a mean value per day, calculated using the mean value every hour for each day respectively in August 2019.

Chapter 1 – The RIX payment system

General description

The RIX payment system is the Riksbank's system for the transfer of funds in accounts and is a central part of the Swedish financial system. RIX provides banks, clearing houses and several other market participants with the opportunity to make transfers to each other in a manner that does not entail credit or liquidity risks. The transfers may concern the participants' own financial transactions, transactions made on behalf of their customers or transactions to or from the Riksbank.

Almost all of the payments in Swedish kronor that are not made internally within an individual bank are handled in the RIX system in some form. In order to increase the efficiency of the payment system, the Riksbank adds liquidity by granting credit against collateral. This collateral mainly consists of securities but may also be foreign currency.

As RIX is of decisive importance to the financial system, its availability is highly important. The Riksbank has set, as a target, that the RIX system is to be available for at least 99.85 per cent of its opening hours.

RIX is entirely funded through fees from the participants. As the Riksbank is also a participant in RIX, the Riksbank itself pays a fee, according to the same principles that apply to the other participants.

Participants in RIX

An institution that fulfils the Riksbank's criteria for participation in RIX can apply to become a participant in RIX. A RIX participant can decide to act in two different roles, either as *Account Holder* or as *Agent*.

An *Account Holder* may choose between either sending funds settlement instructions and receiving information from the system itself or wholly or partly using an *Authorised Settlement Agent* that has been approved by the Riksbank for this function. During the period, Northern Trust Global Services has been added as RIX participant. In total, there are currently 34 RIX participants.

RIX participants at the end of the second four-month period, 2019

Avanza Bank
 Bankgirot
 BlueStep Bank
 BNP Paribas Fortis
 Citibank
 CLS Bank
 Cr dit Agricole
 Danske Bank
 DNB Bank
 EuroCCP
 Euroclear Sweden
 FOREX Bank
 JAK Medlemsbank
 Klarna Bank
 Kommuninvest
 Landshypotek
 LCH
 L nsf rs kringar Bank
 Marginalen Bank
 Nasdaq Clearing
 Nordea Bank
 Nordnet Bank
 Northern Trust Global Services
 Sveriges Riksbank
 Swedish National Debt Office
 SBAB Bank
 SEB
 Skandiabanken
 Sparbanken Syd
 Svea Bank
 Svenska Handelsbanken
 Swedbank
 VP Securities
  landsbanken

RIX terms and conditions

The relationship between the Riksbank and the RIX participants is regulated by the *Terms and Conditions for RIX and Monetary Policy Instruments (the Terms and Conditions)*. The *Terms and Conditions* are made up of both contractual conditions and provisions for monetary policy instruments.

The *Terms and Conditions* apply to RIX as well as to the framework for the implementation of monetary policy because the systems interact in a number of ways. The Riksbank's ability to influence the overnight interest rate ultimately depends on the Riksbank being in a position to set the terms and the extent of overnight deposits and lending. Moreover, the requirements concerning collateral in RIX are partly the same as those for monetary policy instruments.

For further information, see:
<https://www.riksbank.se/en-gb/payments--cash/the-payment-system---rix/conditions-and-instructions/>

RIX timetable

The RIX system is open on all banking days. On half-days, the RIX system uses normal opening hours. RIX's opening hours follow a specific timetable. The timetable below shows how a day at RIX includes various events and is divided into various periods. Under special circumstances, the Riksbank can decide to extend opening hours.

RIX timetable	
06.30–07.00	Start of settlement day
07.00	Opening of settlement procedures
11.00	Cut-off time for bilateral limits
16.00	Closure of settlement procedures for PRT LOM
16.15	Closure of settlement procedures for other LOM
16.30	First final point for overnight loans
17.00	Closure of settlement day
17.10	Opening of new settlement day
18.00–06.30	Temporary closure of settlement day

In accordance with the previous decision, the Riksbank will extend opening hours in RIX by one hour, which is to say until 18.00. The amendment will enter into force on 14 October 2019.

RIX timetable as of 14 October:

RIX timetable	
06.30–07.00	Start of settlement day
07.00	Opening of settlement procedures
11.00	Cut-off time for bilateral limits
17.00	Closure of settlement procedures for all LOM
17.30	First final point for overnight loans
18.00	Closure of settlement day
18.10	Opening of new settlement day
19.00–06.30	Temporary closure of settlement day

Continuity

The Riksbank works to ensure that the RIX system is resilient. If a disruption occurs, the objective is for it to have the smallest impact possible. A number of different activities are therefore conducted each year such as: analysis of operational risks including cybersecurity; further development of contingency procedures; and the implementation of both internal exercises and exercises involving the RIX participants. The objective of the

exercises is to achieve a good ability to limit negative consequences, exercise cooperation with others and take the right decisions in a crisis.

The Riksbank also participates in FSPOS, a group for private-public cooperation in the financial sector. This is a voluntary forum with members from both the public and private segments of the Swedish financial sector. FSPOS's business idea is for FSPOS to collaborate, exercise, chart and share information in order to strengthen the financial sector's ability to cope with threats and manage crises, and thereby safeguard society.

Collateral in RIX

The Riksbank grants credit over the day and overnight. This lending takes place against collateral that has been approved by the Riksbank.

Eligible collateral

The criteria that collateral must fulfil to be approved as eligible for credit in RIX are specified in *Annex H4, Collateral Instructions* in the *Terms and Conditions*.

In general, eligible collateral consists of securities issued by a government, central bank, municipality, other public body, credit institution or company with a satisfactory credit rating. Furthermore, it is required that such securities are issued in an approved currency, that the registered office of the issuer is located in an approved state and that there is an established arrangement (link) between Sweden and the CSD in which the security is issued.

Certain foreign currencies may be used as collateral under the framework of the Scandinavian Cash Pool (SCP) or through payments via Deutsche Bundesbank.

The Riksbank regularly tests whether certain securities issued by the Swedish government, Swedish municipalities and county councils, as well as certain covered bonds, are eligible as collateral. For other securities, examination and approval by the Riksbank does not take place until a RIX participant has submitted an application.

A participant's credit limit is calculated as the sum of pledged collateral after haircut. Different types of security have different haircuts.

For further information, see:
<https://www.riksbank.se/globalassets/media/rix/engelska/2018/terms-and-conditions-for-rix-and-monetary-policy-instruments---annex-h4---collateral-instructions.pdf>

Chapter 2 – Operative goals, outcomes and administration

The RIX system is evaluated on the basis of two operative goals: technical availability and cost coverage.

Technical availability

The goal for technical availability is that the RIX system should be able to manage payments for 99.85 per cent of the time it is open.

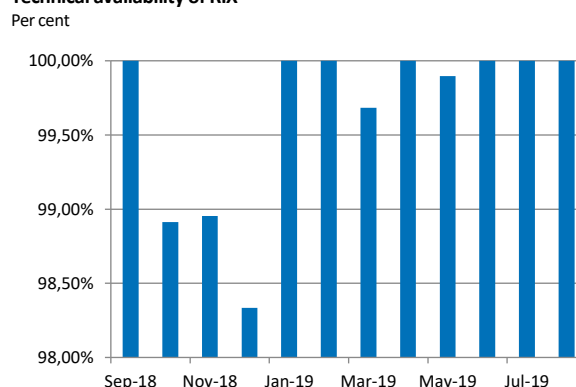
Technical availability of the RIX system during the second four-month period of 2019 was 99.97 per cent.

Incidents

Incidents are divided into four categories: Application, Software, Participant and Configuration. The Application category covers incidents that affects systems that have an interface that interacts with a user, for example RIX Online and RIX EMS. The Software category covers other software errors, such as the Riksbank’s log-in software. The Participant category covers incidents that occur at a RIX participant but in some way affect the Riksbank’s RIX system operations. The Configuration category covers incidents caused by changes or the lack of changes in applications.

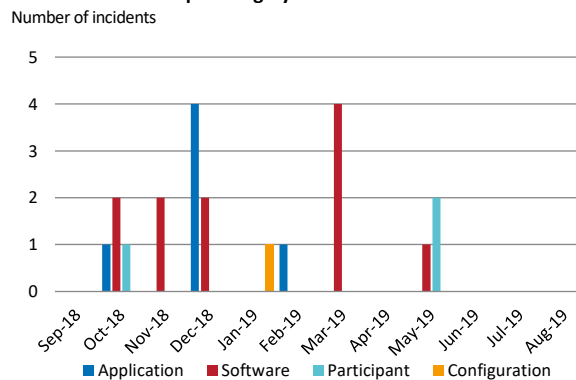
During the period, one incident occurred in the software category, meaning that RIX was unable to settle payments for a total of 13 minutes. The Riksbank provides a more detailed summary of this incident to the participants separately. Two incidents occurred in the participants category.

Technical availability of RIX



Source: The Riksbank

Number of incidents per category



Source: The Riksbank

Cost coverage

The Riksbank's provision of RIX is to take place according to the principle of full cost coverage. The requirement for full cost coverage is measured over a three year period, in which revenues are to correspond to 100 per cent of costs +/- 10 per cent. This means that the Riksbank charges the RIX participants fees to cover its costs. In addition to costs for personnel and systems, these also include allocated expenditure for premises, property management, security and surveillance etc. As the Riksbank itself is a participant in RIX, the Riksbank pays a fee according to the same principle of expenditure as applies to the other participants. As of 1 March 2019, the fixed monthly fee per participant was raised by SEK 10,000 and the monthly additional fee was raised by SEK 800,000. At the same time, the monthly fee for access rights administration was removed.

Cost coverage over the last two four-month periods is 107 per cent.

The RIX Division's revenue and allocated expenditure

Million SEK, accumulated 1st and 2nd four-month periods, 2019

	P1 and P2 2019
Revenue	SEK 63.8 million
Distributed costs	SEK 59.9 million
Cost coverage	107%

Source: The Riksbank

Fees applying from 1 March 2019

Fees in SEK

Fee per transfer notification	4.00
Fixed monthly fee per participant	65,000
Fixed monthly fee for participants able to utilise the right to credit through grant of pledge	20,000
Additional fee divided among participants with domestic turnover exceeding one billion kronor	3,800,000
Entry fee for new participants	125,000

Source: The Riksbank

Administration

RIX

RIX-RTGS: Work is under way on the upgrades of RIX and the business intelligence tool BI. The upgrades include both some new functionality and technical changes. Preparations are under way for migration to new IT operations supplier.

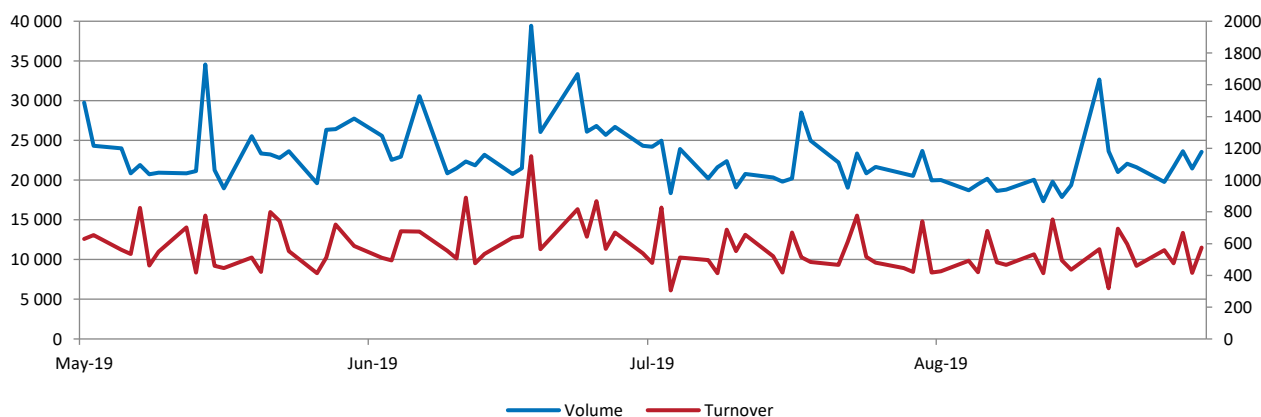
QCMS

A number of updates are planned for QCMS in 2019. These include adjustments ahead of amendments to Euroclear Sweden's CSDR. RIX participants will be informed by mail if they are affected by this.

Chapter 3 – Statistics on payments in RIX

Number of transfers and turnover

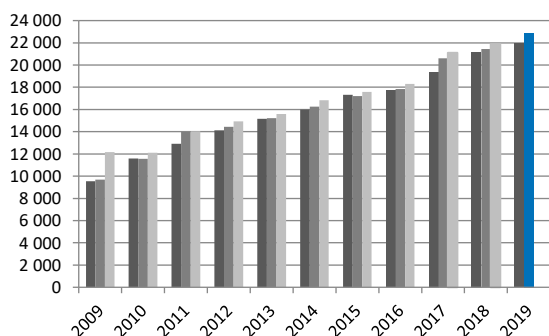
Number of transfers and SEK billion



Source: The Riksbank

Average number of transfers per day

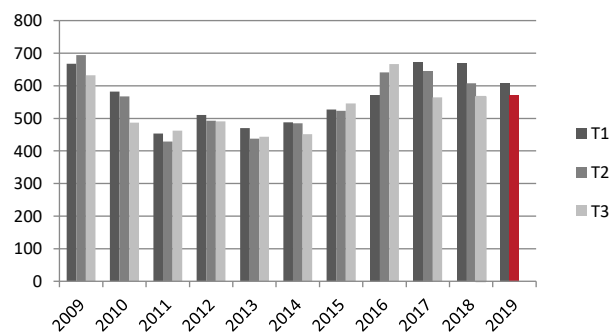
Number of transfers



Source: The Riksbank

Average daily turnover

SEK billion



Source: The Riksbank

Key data

SEK billion and number of transfers

	Turnover		Number of transfers	
	Second four-month period 2019	Previous four-month period	Second four-month period 2019	Previous four-month period
Average	572	608	22,888	21,957
Highest value	1,151	921	39,431	33,761
Lowest value	305	314	17,339	15,826
IMM day	1,151 ¹	830 ²	39,431 ¹	27,419 ²

Key data on daily turnover and number of transfers.

Source: The Riksbank

¹ Occurred 19 June 2019

² Occurred 20 March 2019

Chapter 4 – Allocation of settlement procedures and transaction codes

RIX consists of eight settlement procedures: RTM, and seven other procedures, LOM, for various purposes. Transfers in RTM are implemented immediately, while settlement procedures for LOM provide functions for liquidity management, prioritisation of transfers and optimisation. Optimisation means that RIX simultaneously executes several transfers by offsetting outgoing transfers

against incoming transfers. Simultaneous transfers can be executed bilaterally and multilaterally. The LOM that manages most of the transfers in RIX is named RIX-LOM and the processes that manage transfers connected with participating clearing organisations are named after the relevant clearing organisations. Transaction codes (REC) are used to mark payments of different types.

Allocation of settlement procedures

SEK billion and number of transfers

LOM	Turnover				Number of transfers			
	Second four-month period 2019		Previous four-month period		Second four-month period 2019		Previous four-month period	
	Total	% of total	Total	% of total	Total	% of total	Total	% of total
RTM	8,208	17.1%	10,806	21.4%	4,238	0.2%	4,175	0.2%
RIX	25,533	53.1%	24,966	49.5%	1,701,041	88.5%	1,604,984	88.1%
BGC	4,660	9.7%	4,764	9.4%	197,478	10.3%	193,779	10.6%
CLS	2,483	5.2%	2,301	4.6%	10,610	0.6%	10,264	0.6%
VPC	6,930	14.4%	7,365	14.6%	2,456	0.1%	2,678	0.1%
OMX	89	0.2%	122	0.2%	1,601	0.1%	1,720	0.1%
PRT	57	0.1%	62	0.1%	4,041	0.2%	3,684	0.2%
ACH	91	0.2%	70	0.1%	1,117	0.1%	1,118	0.1%
Total	48,051	100.0%	50,456	100.0%	1,922,582	100.0%	1,822,402	100.0%

Source: The Riksbank

Allocation of transaction codes in RIX LOM

SEK billion and number of transfers

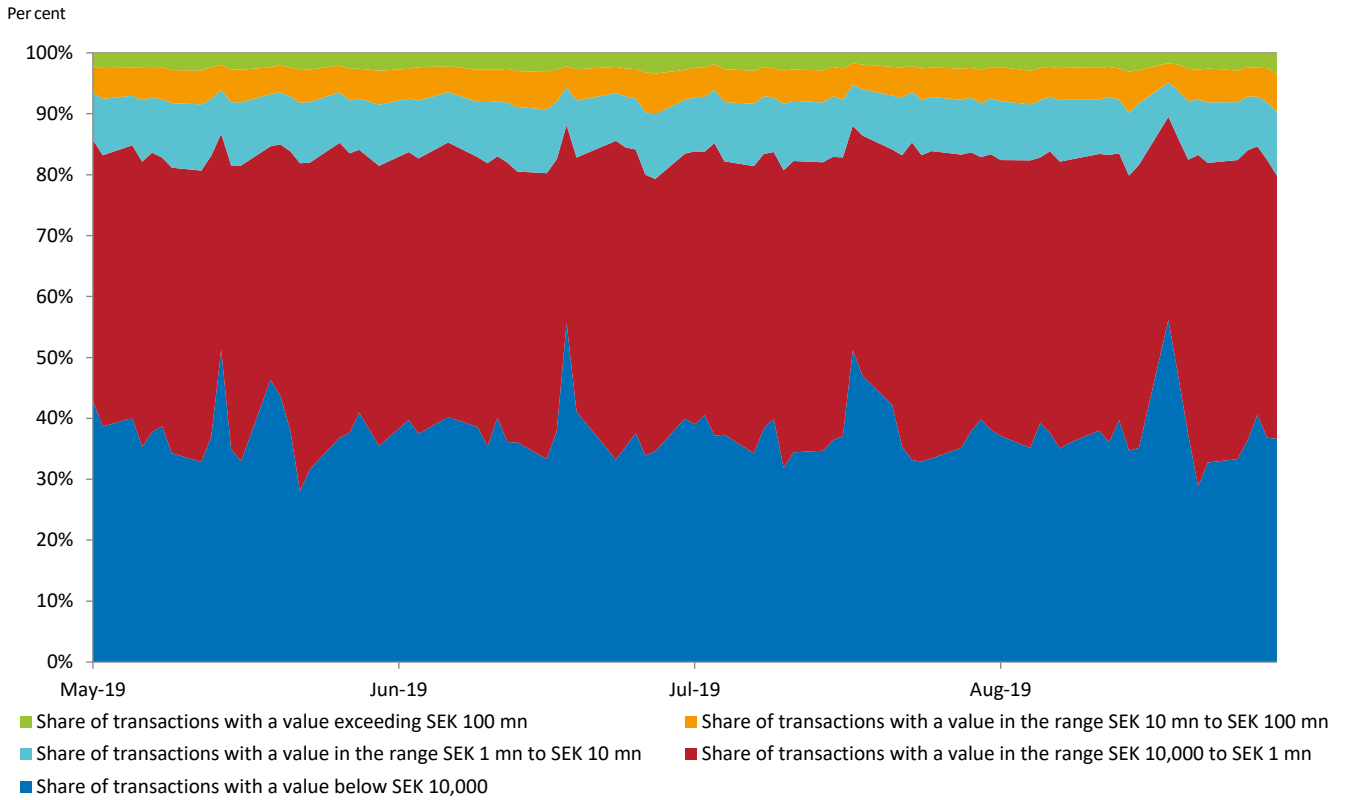
REC	Turnover				Number of transfers			
	Second four-month period 2019		Previous four-month period		Second four-month period 2019		Previous four-month period	
	Total	% of total	Total	% of total	Total	% of total	Total	% of total
ADG	4,475,461	15.8%	5,790	19.8%	1,389	0.1%	1,354	0.1%
ARB	1,623,300	5.7%	1,476	5.0%	5,673	0.3%	5,669	0.5%
DOK	74	0.0%	0	0.0%	132	0.0%	229	0.0%
DOM	5,644,766	19.9%	5,813	19.9%	149,424	8.8%	152,362	9.5%
ITB	468,266	1.7%	497	1.7%	291	0.0%	292	0.0%
RBK	4,725	0.0%	6	0.0%	193	0.0%	175	0.0%
RTA	0	0.0%	0	0.0%	8	0.0%	7	0.0%
UTG	0	0.0%	0	0.0%	0	0.0%	3	0.0%
UTL	16,082,512	56.8%	15,685	53.6%	1,544,745	90.8%	1,445,741	90.0%
Total	28,299,105	100.0%	29,268	100.0%	1,701,855	100.0%	1,605,832	100.0%

ADG = repayment overnight loan, ARB = FX payments, DOK = aggregate document clearing, DOM = domestic payments, ITB = interbank payments, RBK = Riksbank's payments of cash, RTA = interest compensation, UTG = aggregate international payments, UTL = international payments

Source: The Riksbank

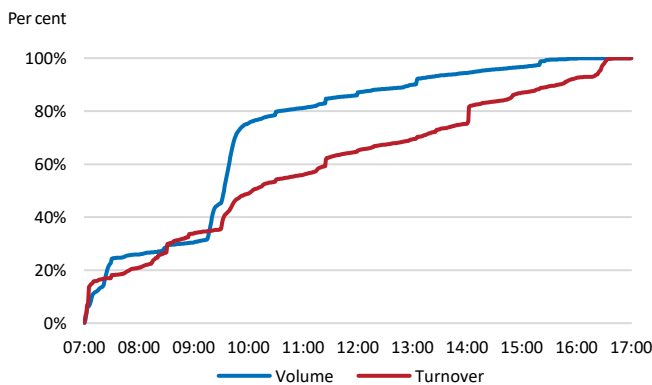
Chapter 5 – Other statistics from RIX

Number of transfers by transaction interval



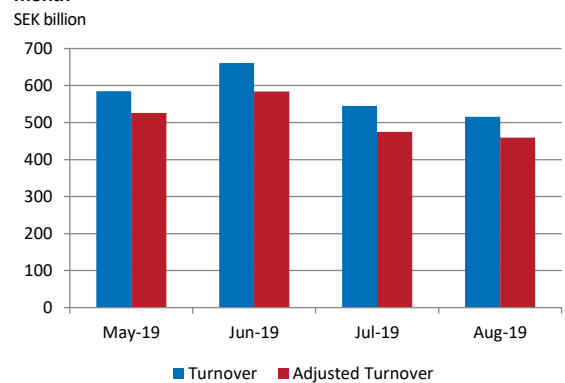
The diagram shows the proportion of transfers for each amount range.
Source: The Riksbank

Aggregate turnover and volume for an average day in RIX



The graph shows the times of day at which transfers in RIX are usually made. The graph is based on transaction data for two months of the four-month period.
Source: The Riksbank

Average daily turnover and adjusted average daily turnover per month



Adjusted turnover comprises the RIX system's total turnover after transactions relating to the Riksbank's own operations have been deducted.
Source: The Riksbank

Chapter 6 – Statistics on collateral

Number of securities and value of pledged collateral

Number of securities at end of period and value in SEK billions. The value is estimated as a mean value per day, calculated using the mean value every hour for each day respectively in August 2019.

	Second four-month period 2019	Previous four-month period
Number of securities eligible for credit	931	958
Value of pledged collateral (SEK billion)	205	193

Source: The Riksbank

Average collateral transactions

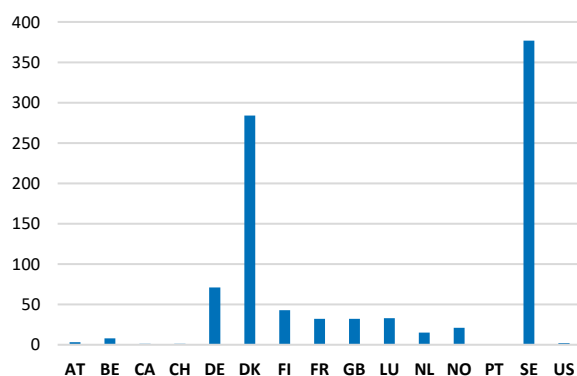
Average per day of the number of collateral transactions and amount in SEK billion (excluding collateral for CBK).

	Second four-month period 2019	Previous four-month period
Amount of transactions per day	93.7	85.3
Amount of deposits per day	39.7	37.4
Amount of withdrawals per day	54.1	47.9
Number of transactions per day	16.2	19.5
Number of deposits per day	6.7	8.2
Number of withdrawals per day	9.5	11.3

Source: The Riksbank

Number of eligible assets by issuer's domicile

Number of collateral assets

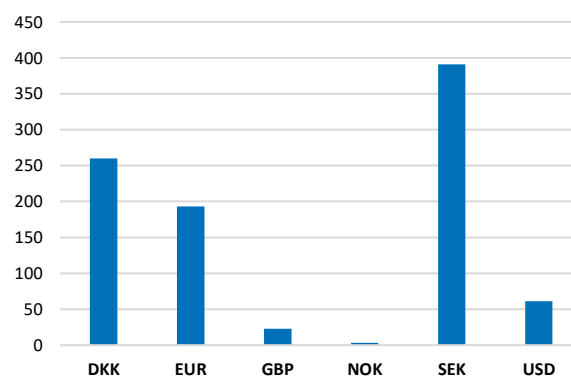


At closure on 30 August 2019.

Source: The Riksbank

Number of eligible assets per currency

Number of collateral assets

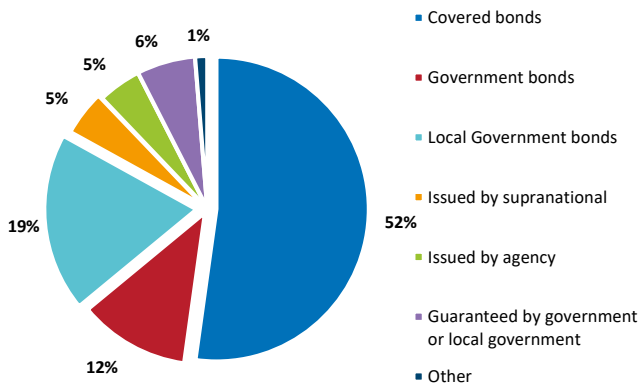


closure on 30 August 2019.

Source: The Riksbank

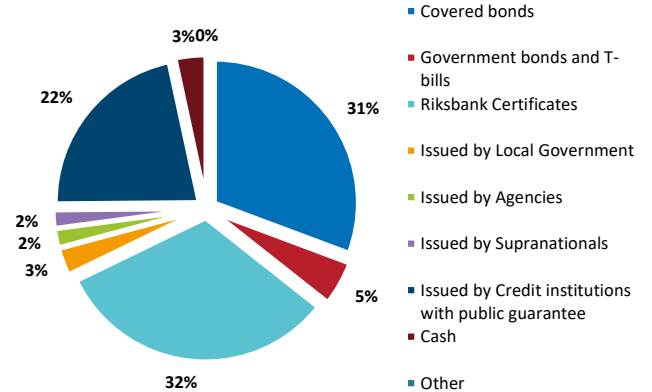
At

Number of eligible assets
Per cent per security type



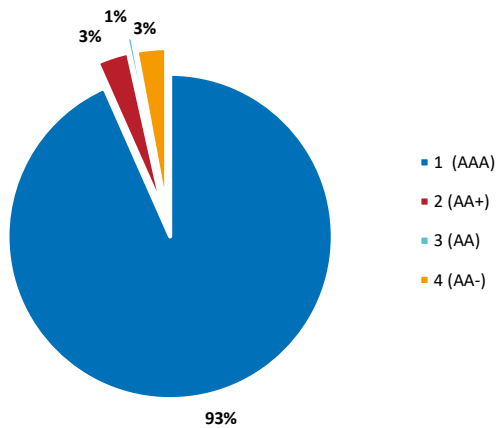
At closure on 30 August 2019.
Source: The Riksbank

Collateral value pledged for credit in RIX
Per cent per security type



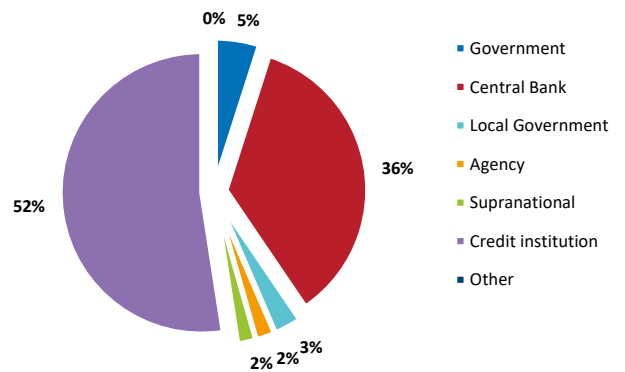
Mean value per day, calculated using the mean value every hour for each day respectively in August 2019.
Source: The Riksbank

Distribution of holdings per rating level
Percentage per rating level



Mean value per day, calculated using the mean value every hour for each day respectively in August 2019.
Source: The Riksbank

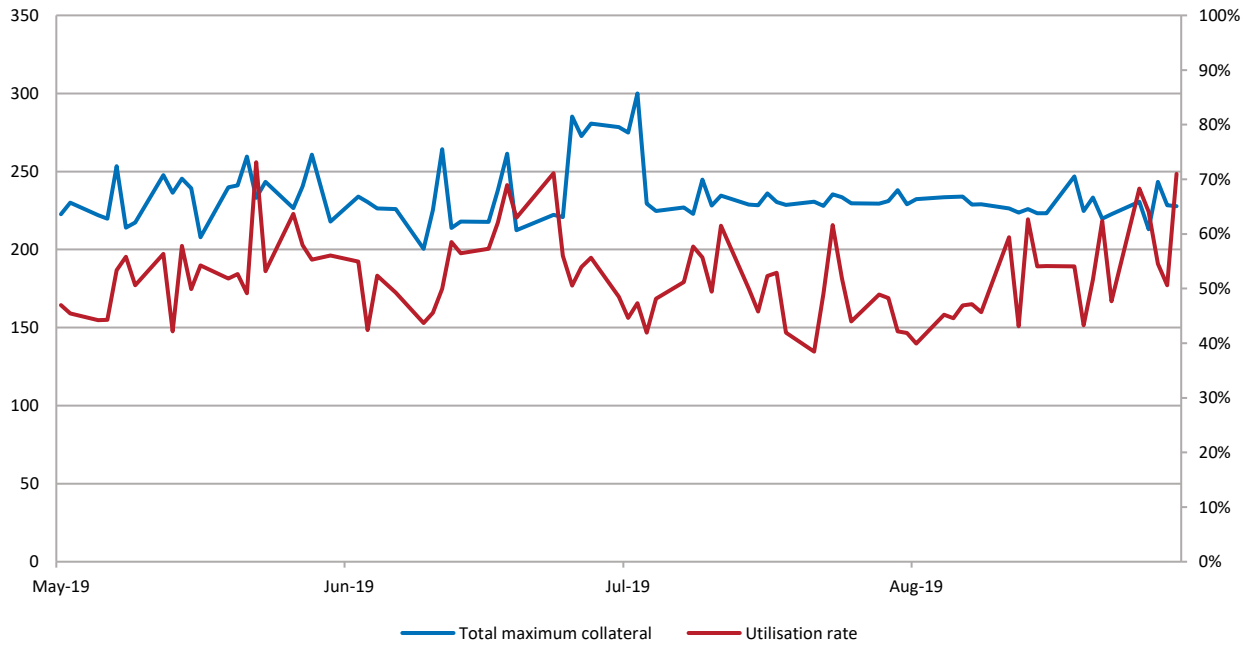
Distribution of holdings per issuer type
Per cent per issuer type



Mean value per day, calculated using the mean value every hour for each day respectively in August 2019.
Source: The Riksbank

Total maximum collateral and utilisation rate

SEK billion and per cent



The total maximum collateral is calculated as the total of the highest value of each institution's pledged collateral. The utilisation rate is calculated as the sum of the maximum utilised credits for each institution as a proportion of the total maximum collateral.

Source: The Riksbank



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