



RIX, first four-month period

January – April

Payments Department

2019

Aim

The aim of this report is to briefly 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 99.92 per cent
- Average turnover: SEK 608 billion
- Highest turnover: SEK 921 billion
- Lowest turnover: SEK 314 billion
- Average number of transfers 21,957 (increased every four-month period since the second period of 2010, with exception for second period of 2015)
- Highest number of transfers 33,761
- Lowest number of transfers 15,896
- Mean value of pledged assets: SEK 193 billion¹
- Cost coverage for first four-month period of 2019: 102 per cent
- During the first four-month period, the Riksbank decided to extend opening hours in RIX until 18.00. This will enter into force on 14 October 2019
- Over the period, one participant has terminated participation in RIX. There are currently 33 participants in RIX.

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

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* which has been approved by the Riksbank for this function. During the four-month period, Netfonds has chosen to terminate its participation in RIX. In total, there are currently 33 RIX participants.

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

Avanza Bank
 Bankgirot
 BlueStep Bank
 BNP Paribas Fortis
 Citibank
 CLS Bank
 Crédit Agricole
 Danske Bank
 DNB Bank
 EuroCCP
 Euroclear Sweden
 FOREX Bank
 JAK Medlemsbank
 Klarna Bank
 Kommuninvest
 Landshypotek
 LCH
 Länsförsäkringar Bank
 Marginalen Bank
 Nasdaq Clearing
 Nordea Bank
 Nordnet Bank
 Sveriges Riksbank
 Swedish National Debt Office
 SBAB Bank
 SEB
 Skandiabanken
 Sparbanken Syd
 Svea Bank
 Svenska Handelsbanken
 Swedbank
 VP Securities
 Ålandsbanken

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.

Several amendments to the terms and conditions have been managed in the first four-month period of 2019. The first amendment involves a clearer description of the monetary policy operational framework and adjusted requirements for RIX participants and Monetary Policy Counterparties. This amendment entered into force on 1 April 2019.

The Riksbank has also decided to extend opening hours in RIX by one hour, which is to say until 18.00. This amendment will enter into force on 14 October 2019.

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

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. In March, the year's first major exercise in manual contingency routines was held with the participation of all 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 exercise was assessed to have worked well.

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.

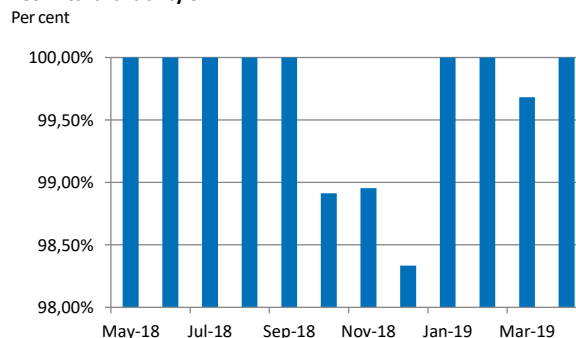
Technical availability of the RIX system during the first four-month period of 2019 was 99.92 per cent.

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.

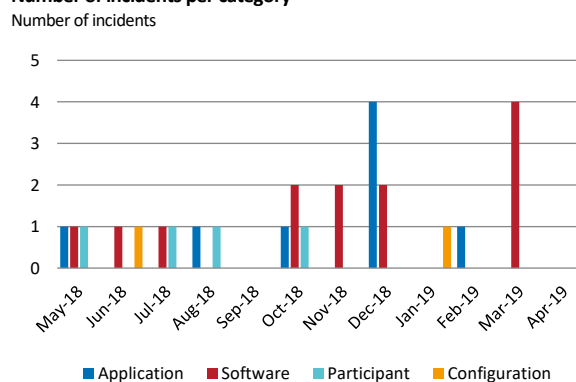
During the period, one incident occurred which was linked to the category application. The incident had an impact on the log-in to RIX Online for some participants. The remaining four incidents under the category software affected availability for some or all participants and meant that RIX could not execute payments for a total of 40 minutes. A more detailed summary of these incidents is provided to the participants separately by the Riksbank. No incidents occurred in the category of participants.

Technical availability of RIX



Source: Sveriges Riksbank

Number of incidents per category



Source: Sveriges 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 four-month period is 102 per cent.

The RIX Division's revenue and allocated expenditure

Million SEK, 1st four-month period (P1) 2019

	P1 2019
Revenue	SEK 30.2 million
Distributed costs	SEK 29.6 million
Cost coverage	102%

Source: Sveriges 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: Sveriges 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 upgrades.

RIX-EMS: Installation of EMS version 3 is completed. V3 includes improved functionality in accordance with earlier wishes: read receipts, replies to messages, mail groups and so on. The functions for mail and text messages have been activated in production.

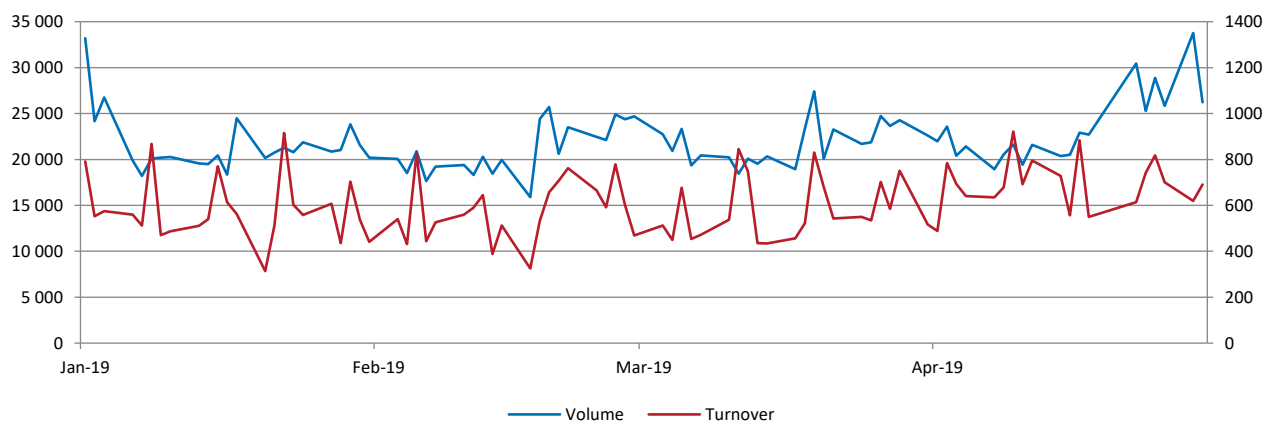
QCMS

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

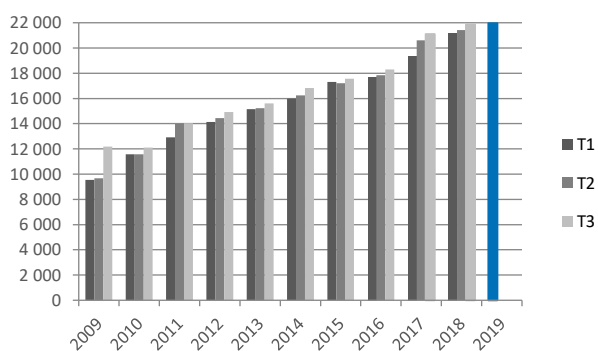
Number of transfers and SEK billion



Source: Sveriges Riksbank

Average number of transfers per day

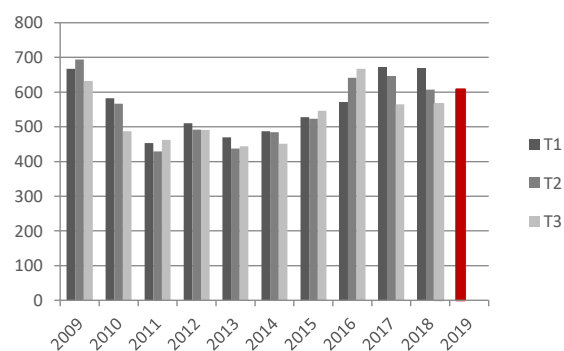
Number of transfers



Source: Sveriges Riksbank

Average daily turnover

SEK billion



Source: Sveriges Riksbank

Key data

SEK billion and number of transfers

	Turnover		Number of transfers	
	First four-month period 2019	Previous four-month period	First four-month period 2019	Previous four-month period
Average	608	566	21,957	21,864
Highest value	921	975	33,761	33,310
Lowest value	314	351	15,896	15,826
IMM day	830 ²	913 ³ , 975 ⁴	27 419 ²	25 561 ² , 30 311 ³

Key data on daily turnover and number of transfers.

Source: Sveriges Riksbank

² Occurred 20 March 2019

³ Occurred 19 Sept 2018

⁴ Occurred 19 Dec 2018

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			
	First four-month period 2019		Previous four-month period		First four-month period 2019		Previous four-month period	
	Total	% of total	Total	% of total	Total	% of total	Total	% of total
RTM	10,806	21.4%	9,495	20.5%	4,175	0.2%	4,086	0.2%
RIX	24,966	49.5%	23,760	51.2%	1,604,984	88.1%	1,577,187	88.0%
BGC	4,764	9.4%	4,734	10.2%	193,779	10.6%	190,978	10.7%
CLS	2,301	4.6%	1,987	4.3%	10,264	0.6%	11,731	0.7%
VPC	7,365	14.6%	6,186	13.3%	2,678	0.1%	2,639	0.1%
OMX	122	0.2%	101	0.2%	1,720	0.1%	1,600	0.1%
PRT	62	0.1%	56	0.1%	3,684	0.2%	3,636	0.2%
ACH	70	0.1%	74	0.2%	1,118	0.1%	1,003	0.1%
Total	50,456	100.0%	46,392	100.0%	1,822,402	100.0%	1,792,860	100.0%

Source: Sveriges Riksbank

Allocation of transaction codes in RIX LOM

SEK billion and number of transfers

REC	Turnover				Number of transfers			
	First four-month period 2019		Previous four-month period		First four-month period 2019		Previous four-month period	
	Total	% of total	Total	% of total	Total	% of total	Total	% of total
ADG	5,790	19.8%	5,158	18.9%	1,354	0.1%	1,330	0.1%
ARB	1,476	5.0%	1,469	5.4%	5,669	0.5%	6,381	0.4%
DOK	0 ⁵	0.0%	0 ⁵	0.0%	229	0.0%	195	0.0%
DOM	5,813	19.9%	5,974	21.9%	152,362	9.5%	151,254	9.6%
ITB	497	1.7%	420	1.5%	292	0.0%	317	0.0%
RBK	6	0.0%	6	0.0%	175	0.0%	159	0.0%
RTA	0 ⁶	0.0%	0 ⁶	0.0%	7	0.0%	7	0.0%
UTG	0 ⁷	0.0%	0 ⁷	0.0%	3	0.0%	0	0.0%
UTL	15,685	53.6%	14,240	52.2%	1,445,741	90.0%	1,418,034	89.9%
Total	29,268	100.0%	27,267	100.0%	1,605,832	100.0%	1,577,677	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: Sveriges Riksbank

⁵ For transaction code DOK, turnover was SEK 26,348,427 in the first four-month period 2019 and SEK 3,980,019 in the previous four-month period.

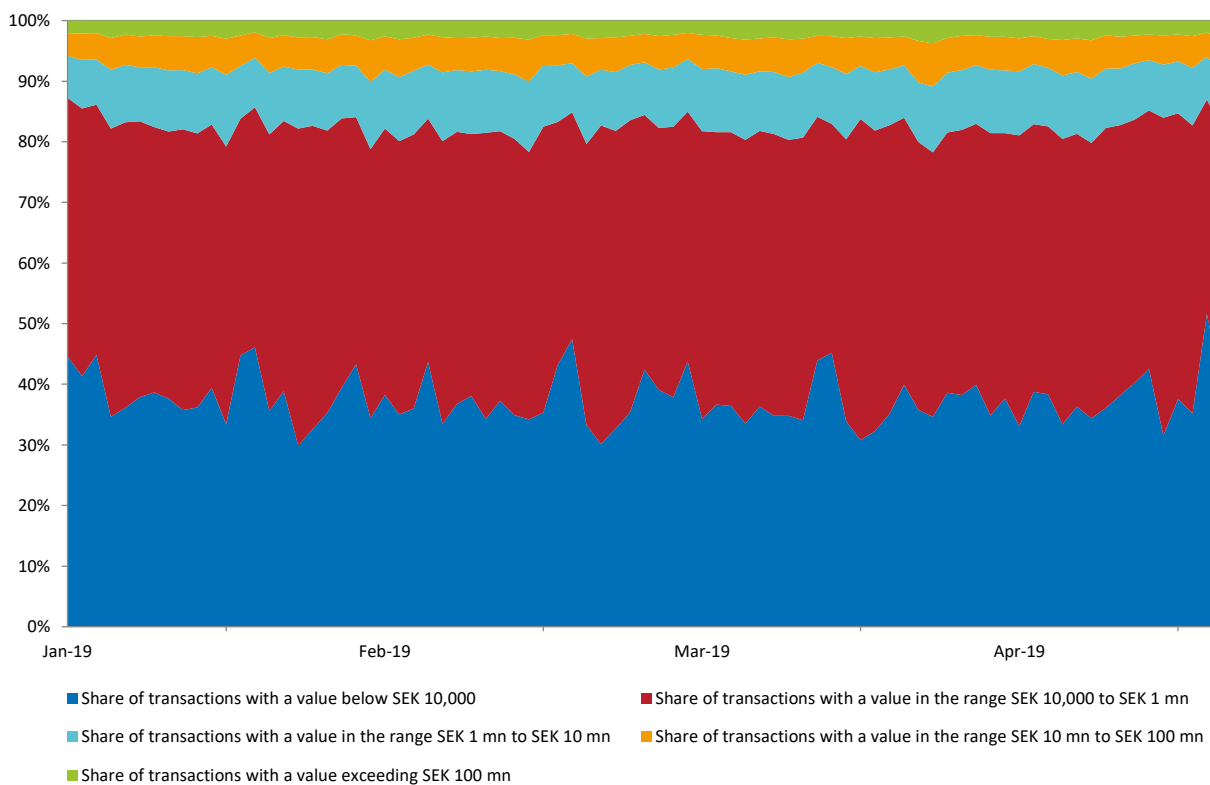
⁶ For transaction code RTA, turnover was SEK 44,822 in the first four-month period 2019 and SEK 9,041 in the previous four-month period.

⁷ For transaction code UTG, turnover was SEK 343,470 in the first four-month period 2019 and SEK 0 in the previous four-month period.

CHAPTER 5 – Other statistics from RIX

Number of transfers by transaction interval

Per cent

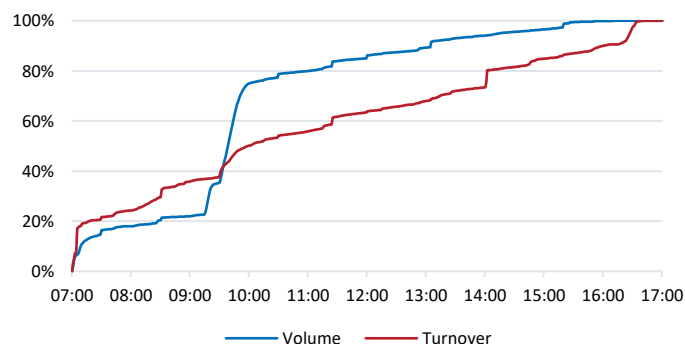


The diagram shows the proportion of transfers for each amount range.

Source: Sveriges Riksbank

Aggregate turnover and volume for an average day in RIX

Per cent

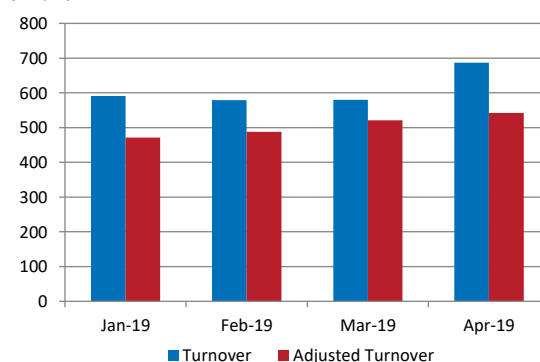


The graph shows the times of day at which transfers in RIX are usually made. The graph is based on transaction data for two months of the four-month period.

Source: Sveriges Riksbank

Average daily turnover and adjusted average daily turnover per month

SEK billion



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

Source: Sveriges Riksbank

CHAPTER 6 – Statistics on collateral

Number of securities and value of pledged collateral

Number of securities and value in SEK billion. From T2 2017, the value is estimated as a mean value per day, calculated using the mean value every hour for each day respectively.

	First four-month period 2019	Previous four-month period
Number of securities eligible for credit	958	996
Value of pledged collateral (SEK billion)	193	181

Source: Sveriges Riksbank

Average collateral transactions

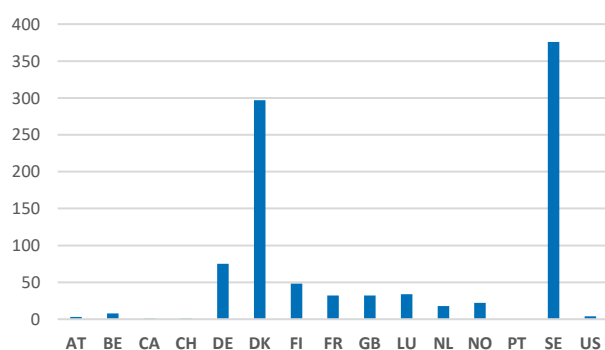
Average per day of the number of collateral transactions and amount in SEK billion (excluding collateral for CBK).

	First four-month period 2019	Previous four-month period
Amount of transactions per day	85.3	83.3
Amount of deposits per day	37.4	36.9
Amount of withdrawals per day	47.9	46.4
Number of transactions per day	19.5	21.3
Number of deposits per day	8.2	8.8
Number of withdrawals per day	11.3	12.6

Source: Sveriges Riksbank

Number of eligible assets per country code

Number of collateral assets

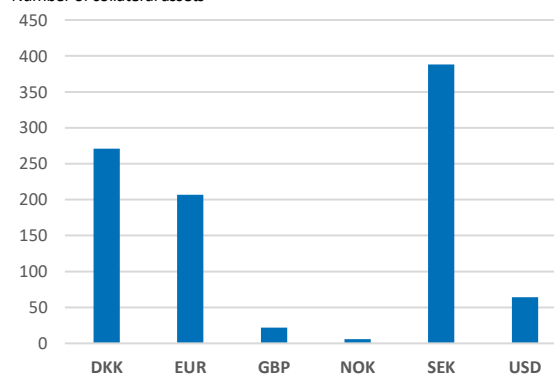


At closure on 30 April 2019.

Source: Sveriges Riksbank

Number of eligible assets per currency

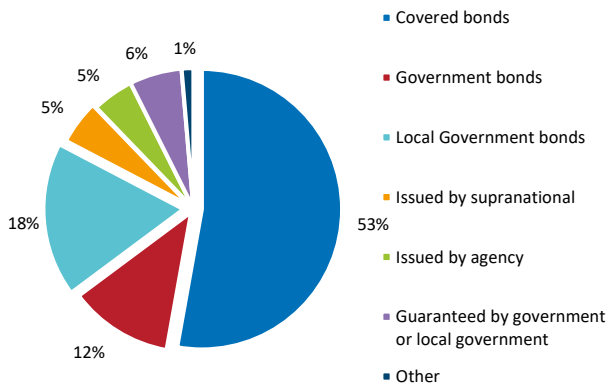
Number of collateral assets



At closure on 30 April 2019.

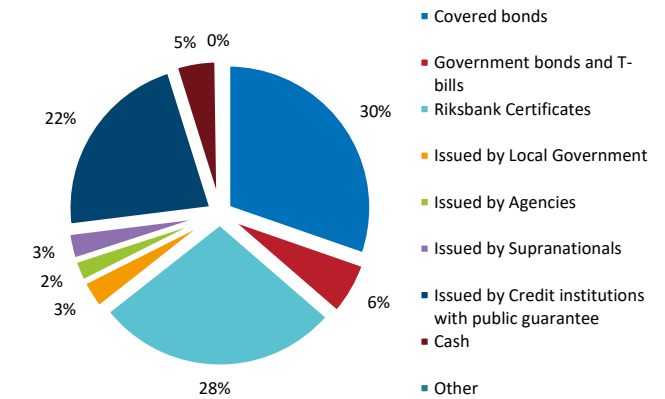
Source: Sveriges Riksbank

Number of eligible assets
Per cent per security type



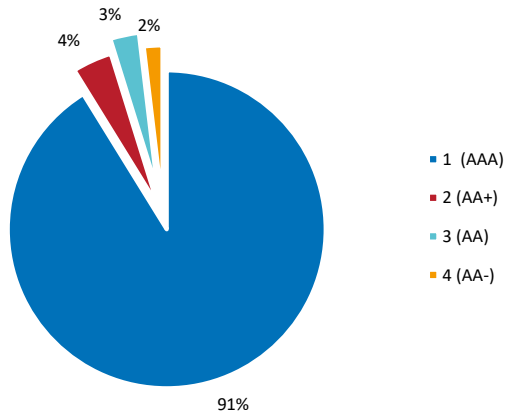
At closure on 30 April 2019.
Source: Sveriges Riksbank

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



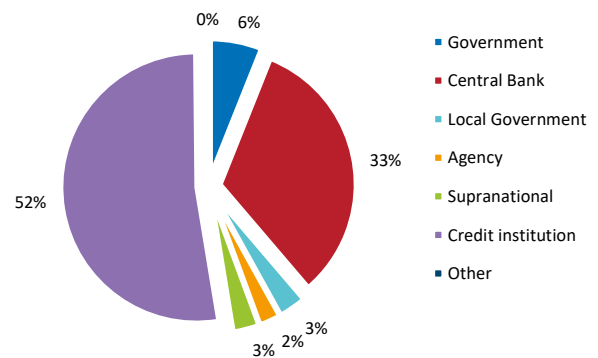
Mean value per day, calculated using the mean value every hour for each day respectively.
Source: Sveriges Riksbank

Distribution of holdings per rating level
Percentage per rating level



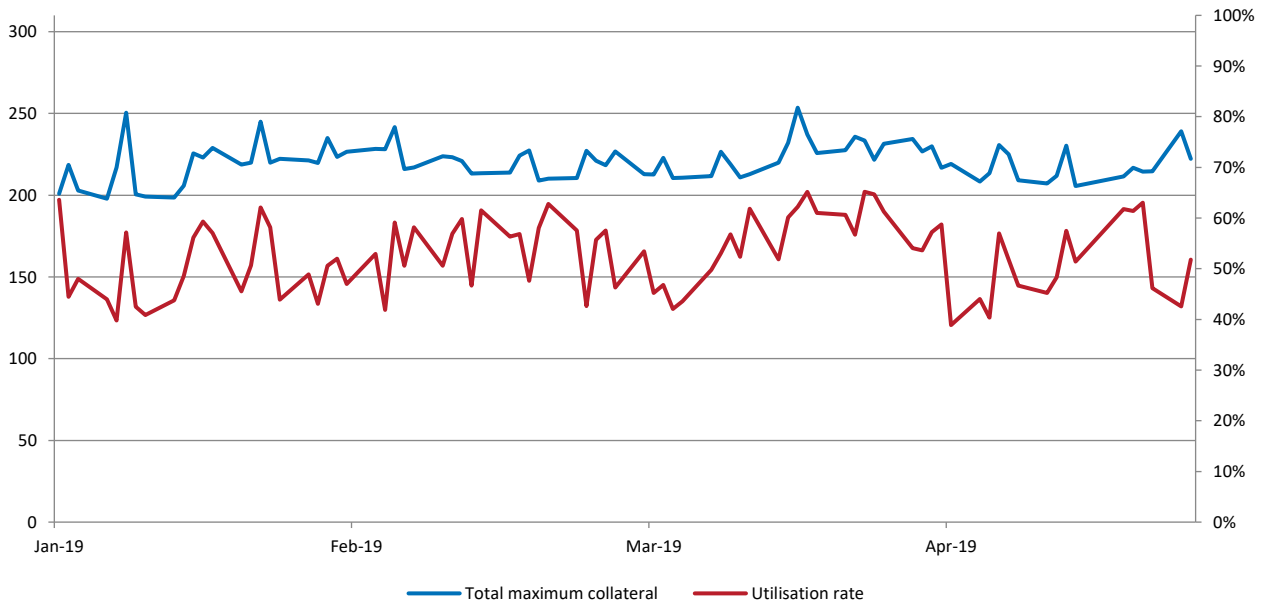
Mean value per day, calculated using the mean value every hour for each day respectively.
Source: Sveriges Riksbank

Distribution of holdings per issuer type
Per cent per issuer type



Estimated as a mean value per day, calculated using the mean value every hour for each day respectively.
Source: Sveriges 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: Sveriges Riksbank



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