



# RIX, second four- month period (T2)

May – August

Payments Department

2018



## **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: 100 per cent
- Average turnover: SEK 607 billion
- Highest turnover: SEK 1,163 billion
- Lowest turnover: SEK 352 billion
- Average number of transfers 21,431 (increased every four-month period since the second period of 2010, with exception for first period 2015)
- Highest number of transfers: 29,576
- Lowest number of transfers: 16,542
- Mean value of pledged assets: SEK 175 billion<sup>1</sup>
- Accumulated cost coverage for first and second four-month periods of 2018: 108 per cent
- One new RIX participant has joined. There are currently 33 participants in RIX

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<sup>1</sup> 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 one of the major hubs 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 must also match its clients' demands. Consequently, the target set by the Riksbank is that at least 80 per cent of participants are to be satisfied with RIX. This is measured through surveys.

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 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 joined as a new participant in RIX. In total, there are currently 33 RIX participants.

#### RIX participants at the end of the second four-month period, 2018

Avanza Bank  
 Bankgirot  
 BlueStep Bank  
 BNP Paribas Fortis  
 Citibank  
 CLS Bank  
 Crédit Agricole  
 Danske Bank  
 DNB Bank  
 EuroCCP  
 Euroclear Sweden  
 FOREX Bank  
 JAK Medlemsbank  
 Kommuninvest  
 Landshypotek  
 LCH  
 Länsförsäkringar Bank  
 Marginalen Bank  
 Nasdaq Clearing  
 Netfonds  
 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.

*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 May, the year's second major exercise in manual contingency routines will be held with the participation of all RIX participants.

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/svenska/2017/rb\\_rix\\_anvisningar\\_sakerheter\\_juli2017\\_eng.pdf](https://www.riksbank.se/globalassets/media/rix/svenska/2017/rb_rix_anvisningar_sakerheter_juli2017_eng.pdf)



## CHAPTER 2– Operative goals, outcomes and administration

The RIX system is evaluated on the basis of three operative goals: technical availability, cost coverage and customer satisfaction.

### 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.

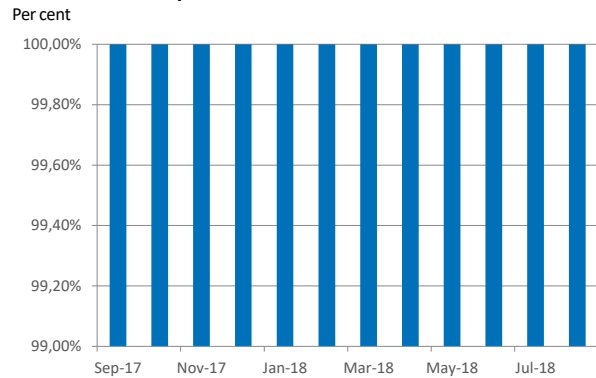
Technical availability of the RIX system during the second four-month period of 2018 was 100 per cent.

### 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.

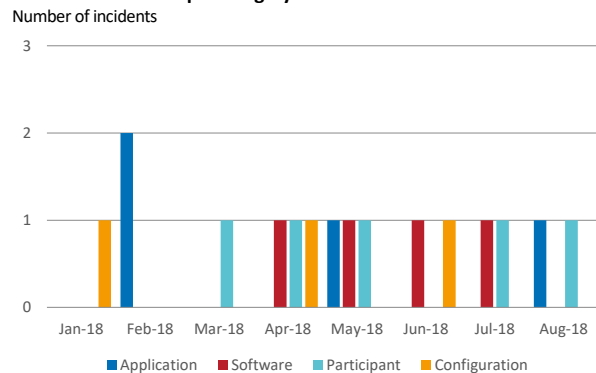
During the four-month period, two incidents linked to the category Application occurred, affecting RIX Online and the Riksbank’s collateral management system. Three participant incidents occurred. The first of these concerned SWIFT problems with a participant, the second concerned network problems with a participant and the third affected a participant’s settlement in RIX. Under the category configuration, one incident occurred which affected the Riksbank’s software for logging into the Riksbank’s internal systems. The incidents under software concerned the Riksbank’s email and telephony functions, as well as the Riksbank’s integration layer, i.e. the application that secures communication between RIX and QCMS, among others. This latter led to extended opening hours in RIX on 16 July.

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 2018, the fee per payment order was cut by SEK 0.5 and the fixed monthly fee per participant was cut by SEK 5,000.

Cost coverage over the last two four-month periods is 108 per cent.

### The RIX Division's revenue and allocated expenditure

Million SEK, accumulated 1st and 2nd four-month periods, 2018

	T1 and T2 2018
Revenue	SEK 57.3 million
Distributed costs	SEK 52.9 million
Cost coverage	108%

Source: Sveriges Riksbank

### Fees applying from 1 March 2018

Fees in SEK

Fee per transfer notification	4.0
Fixed monthly fee per participant	55,000
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	3,000,000
Entry fee for new participants	125,000
The monthly fee for provision of central administration of access rights (participants with 1-10 users)	1,000
The monthly fee for provision of central administration of access rights (participants with more than 10 users)	3,000

Source: Sveriges Riksbank

## Customer satisfaction

The target for customer satisfaction is that at least 80 per cent of the participants, representing at least 70 per cent of the payment volume, are satisfied or very satisfied with the RIX system. This is measured by a survey that assesses how users perceive the Riksbank's services.

In the latest customer survey, conducted during the first four-month period of 2017, the customer satisfaction target was achieved. As a general assessment of RIX, 100% of the 51 respondents (26 of 28 participants) said that they were satisfied or very satisfied with the system.

## Administration

### RIX

RIX: The operative systems on the RIX technical platform are in the process of being updated. This work is in its final test phase and is expected to go live in October 2018.

EMS: Continued tests of the new version are under way. It is now expected to go live in October 2018.

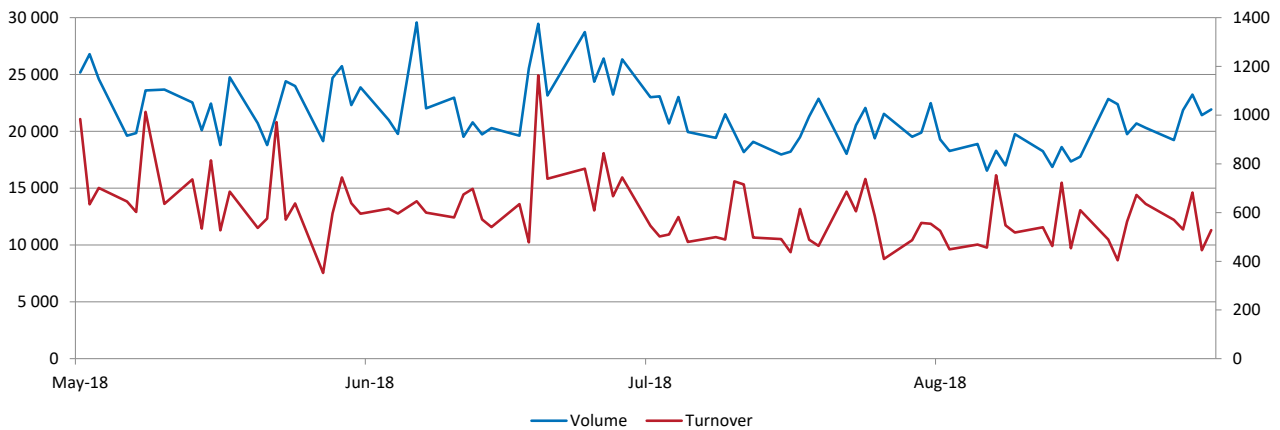
### QCMS

A number of minor patches are planned during 2018 and RIX participants will be informed about these as and when necessary.

## CHAPTER 3– Statistics on payments in RIX

### Number of transfers and turnover

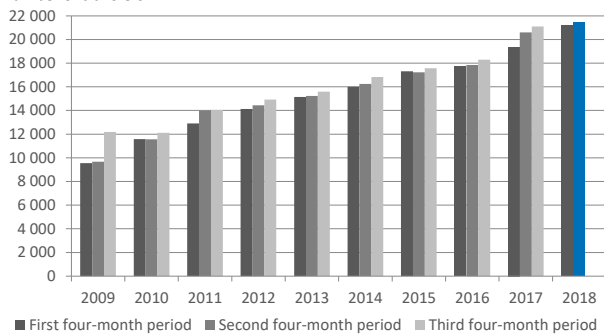
Number of transfers and SEK billion



Source: Sveriges Riksbank

### Average number of transfers per day

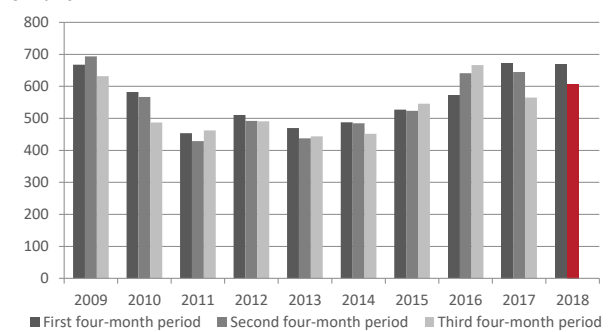
Number of transfers



Source: Sveriges Riksbank

### Average daily turnover

SEK billion



Source: Sveriges Riksbank

### Key data

SEK billion and number of transfers

	Turnover		Number of transfers	
	Second four-month period 2018	Previous four-month period	Second four-month period 2018	Previous four-month period
Average	607	669	21,431	21,176
Highest value	1,163	1,001	29,576	30,344
Lowest value	352	371	16,542	15,798
IMM day	1,163 <sup>2</sup>	866 <sup>3</sup>	29,462 <sup>2</sup>	21,520 <sup>3</sup>

Key data on daily turnover and number of transfers.

Source: Sveriges Riksbank

<sup>2</sup> Occurred 20 June 2018

<sup>3</sup> Occurred 21 March 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			
	Second four-month period 2018		Previous four-month period		Second four-month period 2018		Previous four-month period	
	Total	% of total	Total	% of total	Total	% of total	Total	% of total
RTM	12,217	23.7%	17,331	31.2%	4,036	0.2%	3,957	0.2%
RIX	25,339	49.1%	24,237	43.7%	1,599,605	87.8%	1,538,210	87.5%
BGC	4,677	9.1%	4,520	8.1%	198,071	10.9%	194,534	11.1%
CLS	2,628	5.1%	2,795	5.0%	11,122	0.6%	12,360	0.7%
VPC	6,555	12.7%	6,437	11.6%	2,620	0.1%	2,677	0.2%
OMX	85	0.2%	106	0.2%	1,460	0.1%	1,546	0.1%
PRT	41	0.1%	36	0.1%	3,750	0.2%	3,443	0.2%
ACH	65	0.1%	31	0.1%	984	0.1%	844	0.0%
Total	51,606	100.0%	55,493	100.0%	1,821,648	100.0%	1,757,571	100.0%

Source: Sveriges Riksbank

### Allocation of transaction codes in RIX LOM

SEK billion and number of transfers

REC	Turnover				Number of transfers			
	Second four-month period 2018		Previous four-month period		Second four-month period 2018		Previous four-month period	
	Total	% of total	Total	% of total	Total	% of total	Total	% of total
ADG	6,679	21.9%	8,819	27.9%	1,321	0.1%	1,262	0.1%
ARB	2,102	6.9%	1,837	5.8%	7,576	0.5%	8,563	0.6%
DOK	0 <sup>4</sup>	0.0%	0 <sup>4</sup>	0.0%	239	0.0%	286	0.0%
DOM	6,235	20.4%	6,219	19.6%	149,613	9.3%	145,497	9.5%
ITB	667	2.2%	18	0.1%	334	0.0%	231	0.0%
RBK	4	0.0%	7	0.0%	163	0.0%	170	0.0%
RTA	0 <sup>5</sup>	0.0%	0 <sup>5</sup>	0.0%	6	0.0%	12	0.0%
UTG	0 <sup>6</sup>	0.0%	0 <sup>6</sup>	0.0%	5	0.0%	1	0.0%
UTL	14,804	48.6%	14,753	46.6%	1,441,182	90.0%	1,382,986	89.9%
Total	30,492	100.0%	31,653	100.0%	1,600,439	100.0%	1,539,008	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

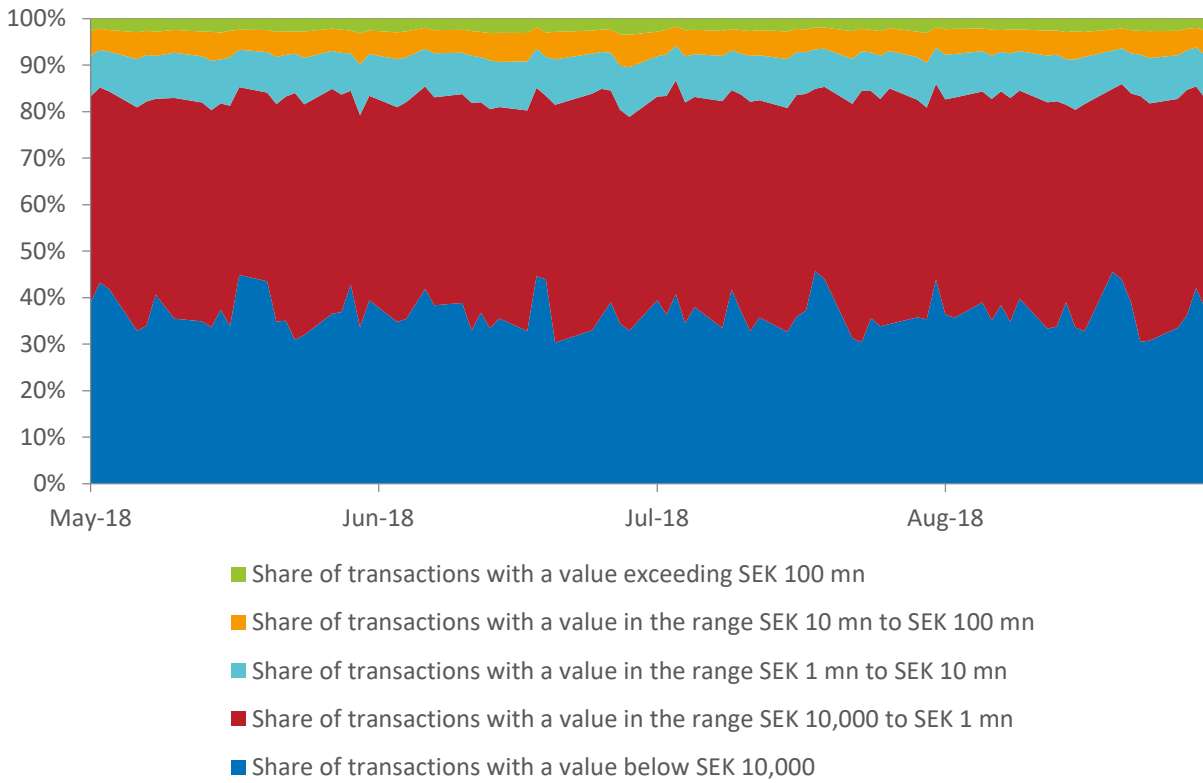
<sup>4</sup> For transaction code DOK, turnover was SEK 22,836,316 in the second four-month period 2018 and SEK 9,108,228 in the previous four-month period.

<sup>5</sup> For transaction code RTA, turnover was SEK 11,389 in the second four-month period 2018 and SEK 14,842 in the previous four-month period.

<sup>6</sup> For transaction code UTG, turnover was SEK 55,362,523 in the second four-month period 2018 and SEK 9,988,212 in the previous four-month period.

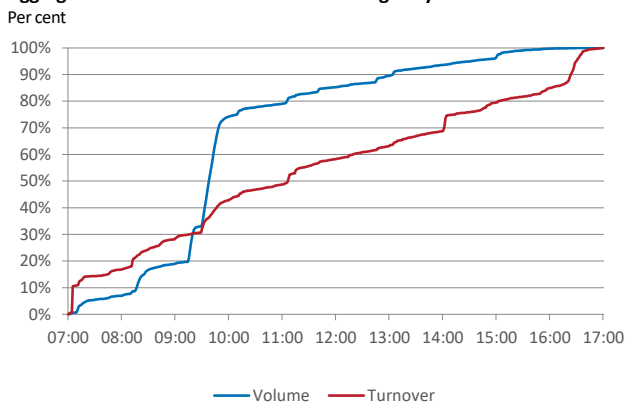
## CHAPTER 5– Other statistics from RIX

**Number of transfers by transaction interval**  
Per cent



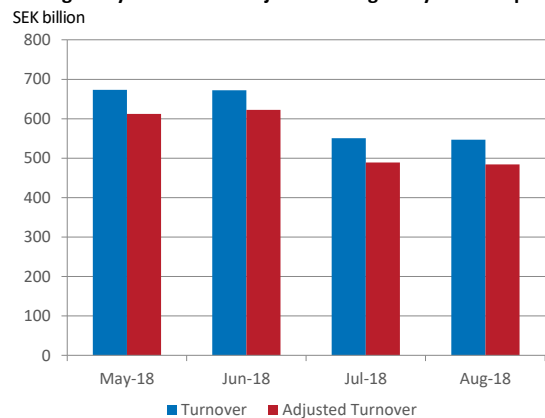
The diagram shows the proportion of transfers for each amount range.  
Source: Sveriges Riksbank

**Aggregate turnover and volume for an average day in RIX**



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**



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.

	Second four-month period 2018	Previous four-month period
Number of securities eligible for credit	1,013	1,048
Value of pledged collateral (SEK billion)	175	159

Source: Sveriges Riksbank

### Average collateral transactions

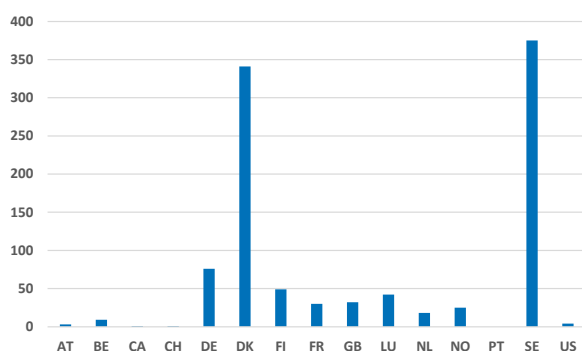
Average per day of the number of collateral transactions and amount in SEK billion (excluding collateral for CBK).

	Second four-month period 2018	Previous four-month period
Amount of transactions per day	71.2	69.5
Amount of deposits per day	32.1	32.4
Amount of withdrawals per day	39.0	37.1
Number of transactions per day	17.6	18.0
Number of deposits per day	7.0	7.7
Number of withdrawals per day	10.6	10.3

Source: Sveriges Riksbank

### Number of eligible assets per country code

Number of collateral assets

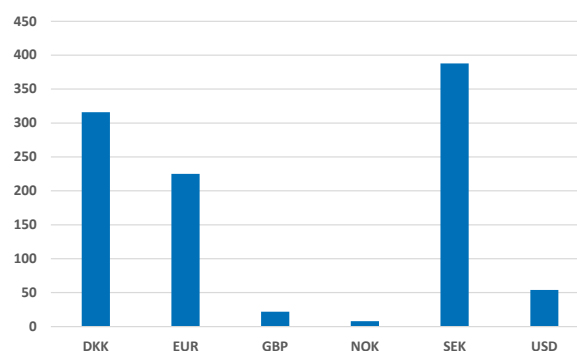


At closure on 31 August 2018.

Source: Sveriges Riksbank

### Number of eligible assets per currency

Number of collateral assets

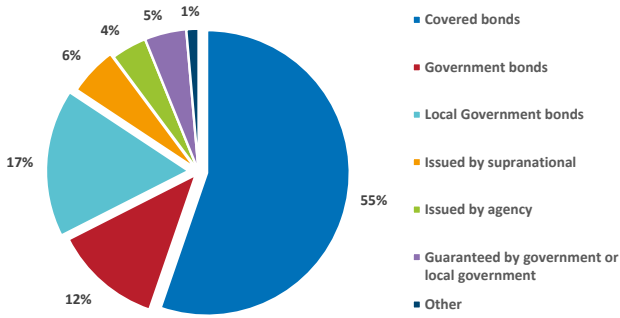


At closure on 31 August 2018.

Source: Sveriges Riksbank

**Number of eligible assets**

Per cent per security type

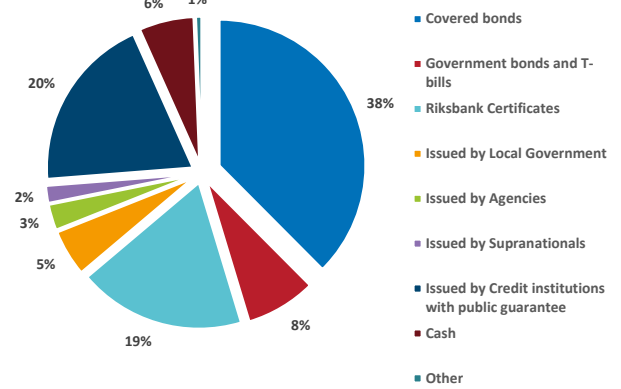


At closure on 31 August 2018.

Source: Sveriges Riksbank

**Collateral value pledged for credit in RIX**

Per cent per security type

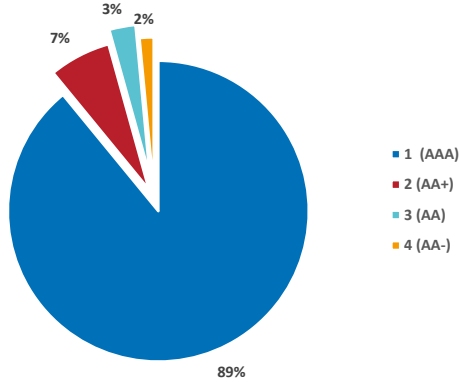


Mean value per day, calculated using the mean value every hour for each day respectively.

Source: Sveriges Riksbank

**Distribution of holdings per rating level**

Percentage per rating level

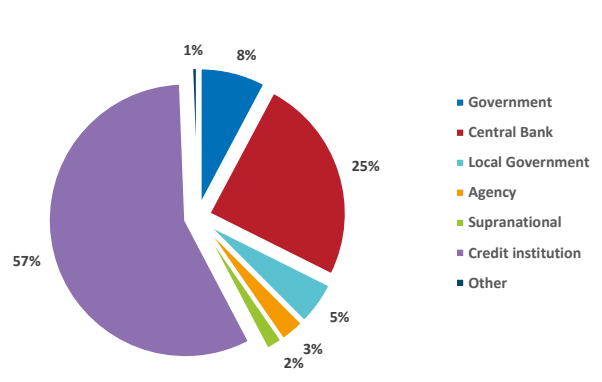


Mean value per day, calculated using the mean value every hour for each day respectively.

Source: Sveriges Riksbank

**Distribution of holdings per issuer type**

Percentage per rating level

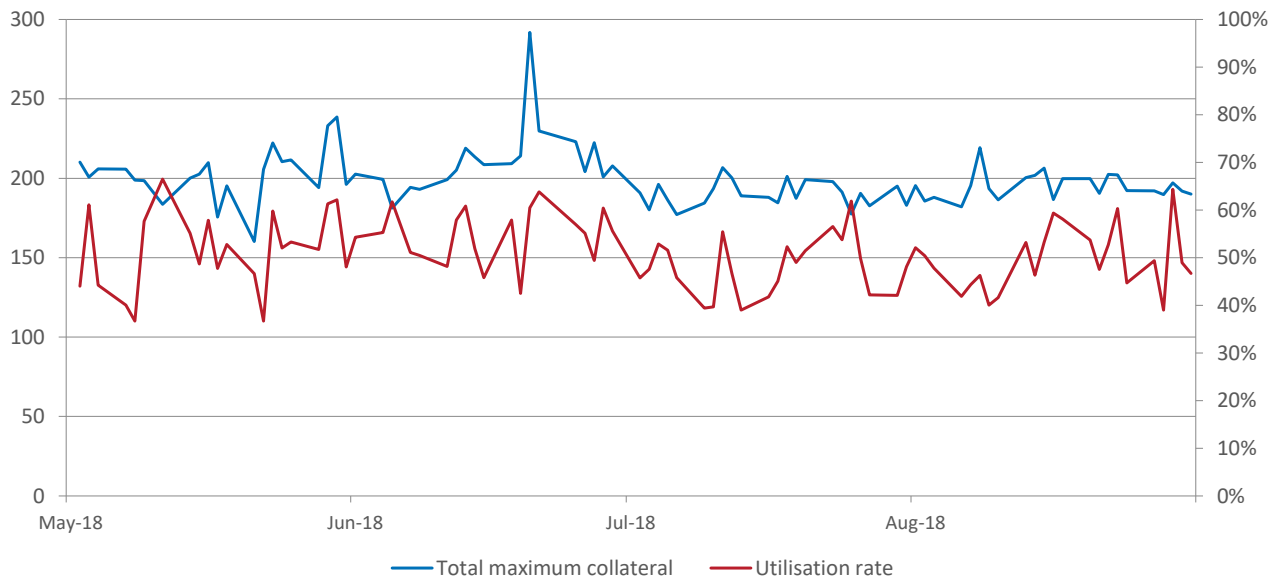


Mean value per day, calculated using the mean value every hour for each day respectively.

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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