

# User study for retailers

October 2023

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# 1 The Riksbank's retailer study within the framework of the e-krona project

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The Riksbank is investigating the possibility of issuing a digital complement to cash, known as the e-krona. To investigate attitudes, behaviour and driving forces in the area of payments, a user study has been conducted. The study was divided into two sub-studies, one targeting individuals and one targeting retailers. This report describes the results of the sub-study targeting retailers, which is to say businesses that accept payments from the public.

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## **Several central banks are exploring the design of central bank digital currency**

An increasing number of central banks are exploring the possibility of issuing central bank digital currencies (CBDCs). A key question is how central bank digital currency should be designed to fulfil the needs of the public and retailers while taking into account technical and legal constraints.

The Riksbank has therefore conducted a user survey with the aim of identifying situations, known as user cases, in which a Swedish central bank digital currency (e-krona) could resolve problems or difficulties that private individuals and companies face on the payment market today. The study has been divided into two sub-studies. The first study focused on the general public and was conducted in autumn 2022. The second study was conducted in spring 2023 and targeted retailers, companies and trade associations in the retail sector. This report describes the results of the second sub-study.

## **User study to give the Riksbank a better understanding of potential users of e-krona**

Since 2017, the Riksbank has investigated the scope for issuing central bank digital currency, known as the e-krona. The work has mainly focused on testing different technical solutions.<sup>1</sup> In parallel with this, the Riksbank has analysed various legal aspects such as data protection, financial confidentiality and what kind of asset the e-krona could be.

But the design of the e-krona should not be based solely on what is technically or legally possible, but also on the needs it can meet for potential users. Our study therefore seeks to identify these needs by examining the problems faced by the public and retailers when it comes to payments. The study was based on three questions:

- *How do retailers experience that payments work today?*
- *What problems related to payments do retailers consider exist today?*

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<sup>1</sup> See the e-krona pilot reports on the Riksbank's website: [E-krona reports | Sveriges Riksbank](#)

- *What attributes needs to be considered when designing an e-krona?*

The study targeted both private individuals (mostly payers) and companies within retail (mostly payees). This report describes the work and results of the part of the study focusing on retailers.

The rest of the report is structured as follows: Section 1 presents the results of the study and summarises the insights, Section 2 presents conclusions and Section 3 describes the methodology and selection of participants for the study. A list of participants can be found in Appendix 1.

## Results

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The study shows that payments currently work well but that retailers want additional competition. For retailers, it is important that there is a choice of payment methods for the customer, the payment process is smooth and the number of steps is as few as possible to make payments quick. Retailers have back-up solutions for Internet connectivity and multiple payment methods that increase the security of payment systems. A new means of payment, such as an e-krona, first needs to be demanded by customers if it is to be widely accepted by retailers. An e-krona could increase competition and also serve as a good alternative to create redundancy in the payment market in the event of various disruptions.

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### Seven insights into how retailers consider payments are working

The results of the study are presented in the form of seven insights; see Table 1. The insights describe how retailers consider payments are working, the challenges they face in their daily work and what they think is missing from the payments market. Some insights also describe the factors that influence retailers' decisions when choosing which payment methods they accept and how they view a potential e-krona. The following sections describe each insight in more detail.

**Tabell 1. Insights**

	Insight
1	Customer demand determines which payment methods retailers accept
2	Retailers favour payment methods with few steps for the customer
3	Retailers demand simple and transparent pricing models
4	Retailers want the payment market to be more competitive
5	Instant payments are in demand but they are not suitable for all retailers
6	Retailers create redundancy by having many different payment options and ensuring Internet connectivity
7	Retailers do not think about the difference between central bank money and commercial bank money

Source: The Riksbank

## 1.1 Customer demand determines which payment methods retailers accept

### Customers should be able to pay the way they want

Retailers believe that customer demand is the most important factor when choosing which payment methods to accept in their stores. Several retailers point out that customers should be able to pay the way they want, regardless of which payment method is most favourable to the retailer. A majority of retailers would choose to adopt a new payment method even if it were more expensive than existing ones, as long as it was requested by customers. This is already happening today as Swish<sup>2</sup> and American Express are accepted by many retailers, even though they are often more expensive than other payment methods.

In the study, retailers were presented with a scenario in which a new payment method is significantly *cheaper* than current options but customer demand for it is *low*. The majority of retailers were opposed to accepting the new payment method. One of the retailers said, among other things:

*“A means of payment that no customer wants can be as cheap as you like but we still don’t want it.”*

Some of the retailers were particularly sceptical as they have previously tried accepting new payment methods such as BART<sup>3</sup> and SEQR<sup>4</sup> and attempted to push these onto the market. This was unsuccessful due to a lack of public interest. They argue that habitual payment patterns are extremely strong and difficult to break.

However, a few retailers were cautiously in favour of testing a payment method that is cheaper than existing ones. This is under the condition that it is equivalent to existing payment methods in terms of functionality, quality and ease of use and that several market players help to spread it.

### New payment methods need to add value for consumers

For retailers, it is thus the demand for new payment methods that is of interest, not the supply. Consequently, for a new payment instrument or payment method (such as an e-krona) to become widespread, the added value for consumers and the willingness to use it is more important than the potential added value for retailers. The launch of a new payment method that is *not* demanded by consumers but offers significant added value to retailers, for example in terms of new functionalities or lower costs, runs the risk of failure.

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<sup>2</sup> Swish application enables transactions restricted to bank customers with Bankid in Sweden; the application enables instant payments account to account by connection via phone number.

<sup>3</sup> Bart is a payment service launched in 2013 by Swedbank, the application enabled payments via the mobile in stores.

<sup>4</sup> SEQR is a payment application that enabled payments via the mobile phone by generating a QR code.

## 1.2 Retailers favour payment methods with few steps for the customer

### **A change of a tenth of a second makes a difference in a physical store**

Retailers prefer payments that are easy and quick to initiate. This is for two reasons. One reason is that fast and smooth payments provide a better customer experience. Retailers say that customers demand these payment methods, preferably with only a few steps. This is why retailers appreciate new types of payment solutions and innovations, such as mobile phone payments and Near Field Communication (NFC), which have helped to speed up the process of making a payment.

Another reason is that quick and easy payments reduce queues in physical stores, which means more profit for the retailer. One retailer says:

*“The important thing is that the checkout lines are fast and there are no queues. But it is also easy for the customer to use it since there are few steps”.*

Another retailer explains that they measure queues at the semi second level and that changes of tenths of seconds have consequences:

*“We made an adjustment in our terminal where we reduced the response time by 0.4 seconds and this did not go unnoticed at checkout. These steps are ingrained in the minds of cashiers. Speed is incredibly important.”*

### **It must be possible for the back office to handle payments quickly and smoothly**

Retailers also want payments to be easy to manage in the back office. They want easy reconciliation with the bank accounts where payments are received and easy integration of transaction data with accounting. In addition, retailers want the money to arrive in the account quickly; see also the insight on instant payments.

## 1.3 Retailers demand simple and transparent pricing models

### **Most have a mix of fixed and variable fees**

Pricing models for payment services can vary widely between retailers. Some have a fixed fee for each transaction, others have a variable percentage fee per transaction. However, the most common model is a mix of both fixed and variable fees. The type of pricing model preferred by retailers depends on the type of business they operate. Retailers with large average purchases prefer fixed fees and vice versa. For example, one retailer says:

*“It’s good to have a fixed fee. This means you always know how much of the margin is lost and it’s cheaper for us to pay a fixed fee given that our purchases are measured in thousands of kronor.”*

### **Current pricing models are complicated**

Retailers feel that pricing models are complicated and that fees are often increased without clear communication from payment service providers. For example, one retailer says:

*“We want to keep the fees down, but there are increases almost everywhere.”*

Retailers therefore desire more transparency in how card networks and other payment service providers set their prices:

*“We want pricing of the models to be simple and transparent. We understand that there has to be a margin but we want it to be transparent.”*

## **1.4 Retailers want the payment market to be more competitive**

### **Card networks have a strong position in the payments market**

Most retailers believe that the card networks have a too strong position in the payment market. The strong position of the networks makes it difficult for retailers to influence pricing and conditions:

*“Mastercard and Visa set all the rules of the game”*

Competition is also weak among services offering instant ‘account-to-account’ payments. Today, Swish, which is relatively expensive for many of the retailers, is one of the few alternatives. Overall, the weak competition is contributing to the high cost of charging customers. A retailer summarises retailers’ situation:

*“Payments are quite simply expensive”*

Retailers therefore welcome new entrants to the payment market that can increase competition and drive down the prices of payment services. Some highlight the e-krona as an example:

*“If the e-krona creates competition, that would be good”*



## 1.5 Instant payments are in demand but they are not suitable for all retailers

### **Retailers want the money on the same day the payment is made**

Every retailer wants the money to be in their bank account the second the customer presses “pay”. Today, only Swish can offer this possibility. Retailers therefore want more instant payment services.

### **Instant payments are not suitable for reservation purchases**

However, instant payments are not suitable for purchases that do not have a fixed final price. This applies to fuel and hotels for example. In these cases, the customer’s money is reserved and then deducted when the final price is set. With instant payments, such as Swish, the retailer cannot make a reservation but must adjust the price afterwards by issuing a refund. This affects the customer experience and adds to the administrative burden on retailers. Because of this, many retailers have ruled out Swish as an option for this type of payment. One retailer requests a technical solution to the problem:

*“The second the customer presses the payment button, we would like to see it deposited in our account. But there must be some kind of new technology that would make it work on petrol pumps, as today it works like a reserve amount that is adjusted afterwards.”*

## 1.6 Retailers create redundancy by offering many different payment options and ensuring Internet connectivity

### **Retailers are well aware of the risk of disruption to their systems**

Awareness of the potential for disruption to checkouts or individual payment methods has increased following the cyberattack on Coop’s checkout system in the summer of 2021.<sup>5</sup> For most of the larger retailers, efforts to offer alternative payment methods to create redundancy have intensified following Russia’s invasion of Ukraine in February 2022.

### **Different types of back-up solutions to ensure payments can always be accepted**

Large retailers have digital point-of-sale (POS) systems and a high proportion of digital payments. They are therefore dependent on a functioning Internet connection.<sup>6</sup> To

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<sup>5</sup> In the summer of 2021, disruptions occurred with a supplier of Coop’s point-of-sale system, forcing many of Coop’s stores to close for several days.

<sup>6</sup> POS systems and payment terminals also depend on electricity to operate. However, retailers say that, in the event of a long power outage, there will be more serious problems than not being able to accept payments, such as refrigerated counters not working and automatic doors not opening. The questions asked in

minimise the risk of not being able to take payments due to Internet disruptions, retailers have backup solutions for both offline payments and Internet connections.<sup>7</sup>

If retailers want to be able to accept payments offline, card payments are the most common solution. The card networks have incorporated an offline function into their cards, allowing retailers to accept card payments if the Internet is down for a short period.<sup>8</sup> Many retailers also have copies of price data stored locally and parallel business systems in case their POS system should crash. Some retailers have chosen not to integrate Swish into the POS system in order to have it as a backup solution if the connection to the cash register does not work. However, this requires customers to have an Internet connection.

### **Back-up Internet access solutions prioritised over offline payments**

Although many of the large retailers have ready-made solutions for offline payments, it is clear that they prioritise backup Internet connectivity solutions over offline payment solutions. For example, they often have parallel Internet solutions and, in addition to having access to the Internet via fibre cables, they are often connected to several different mobile phone masts for 4G networks. This allows the cash register and terminals to operate via 4G in the event of a breakdown of the fibre-optic Internet. Several retailers argue that it is better to ensure that the Internet cannot be shut down than to find solutions to mitigate the effects.

### **Retailers are reluctant to invest in new offline payment solutions**

In the study, retailers were presented with a scenario in which they were given the choice of investing in new hardware or software that made it easier to accept payments offline. None of the large retailers would choose to make such an investment. One explanation is that this function already exists for card payments. Moreover, some retailers argue that it is unlikely that the Internet would be down for long periods. Consequently they do not find it necessary to develop new solutions for offline payments:

*“Offline feels old-fashioned and the scenario is incredibly unlikely to happen - even in Ukraine the Internet has barely been down.”*

### **Accepting multiple payment methods creates redundancy**

Several retailers emphasise the importance of not locking themselves into a separate payment method or system as this increases vulnerability:

*“Being able to offer multiple payment methods provides better redundancy than locking your solution into dependency on one payment method.”*

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these interviews therefore focused on what happens if the Internet or individual payment methods are unavailable.

<sup>7</sup> In this context, offline payment means a payment that does not require an Internet connection.

<sup>8</sup> However, card networks and card issuers, usually banks, can set parameters in the card's chip that limit the ability to pay offline for certain cards.

### **An e-krona may help increase resilience to disruption**

Taken together, this shows that an e-krona could increase resilience to disruptions, not necessarily by being able to work offline but rather by being an additional option if other payment methods do not work.

## **1.7 Retailers do not think about the difference between central bank money and commercial bank money**

### **All forms of money work with each other in an ecosystem**

The study presented retailers with the concepts of *central bank money* and *commercial bank money*. Some of the retailers were familiar with the concepts and were aware that the public has access to Swedish kronor in two forms – government-issued money in the form of cash and digital currency issued by private actors, usually through deposits with banks. However, the majority of retailers do not think about the difference between these forms of money. They argue that they do not need to understand the difference either because all forms of money work with each other in an ecosystem. Some do not understand the concept of different forms of money either:

*“Government money and commercial bank money... Is that really necessary? What’s that supposed to be good for?”*

### **Retailers do not understand how an e-krona would work**

As most of the retailers have not reflected on the difference between central bank money and commercial bank money, it is unclear to them what an e-krona should be. Some believe that the e-krona may be managed as a separate currency, although they recognise that its value is one-to-one with commercial bank money.

*“I don’t see the difference between money I already have in my account and money that would be in the form of an e-krona”*

### **To understand what the e-krona is, clearer communication is needed**

The retailers also had some questions related to the e-krona as a concept. Some wondered how to convert the e-krona into “normal money”. Other retailers asked whether it would be possible to “redeem” the e-krona at the Riksbank. Overall, retailers asked for clearer communication about what an e-krona would be and how it might work.

## 2 Conclusions

### **Payments work well but retailers want competition**

The user study shows that retailers believe that payments in Sweden generally work well. New types of payment solutions and innovations, such as mobile payments and NFC, are helping retailers' customers to make payments more quickly. This is positive for retailers as it improves the customer experience and reduces queuing times in physical stores.

But retailers also recognise that there are challenges to overcome. The biggest of these is that it is expensive to receive payments. Pricing models for payment services are complex and there are often hidden charges. In addition, competition among payment service providers is weak, especially for card services, making it difficult for retailers to impose requirements and influence pricing. From the retailers' perspective, it is therefore important that a potential e-krona is designed in such a way that it increases competition in the payment market.

### **Backup solutions for Internet access and multiple payment methods increase the robustness**

Many retailers rely on an Internet connection and power supply to operate cash registers and payment terminals. In order to be able to charge during disruptions, many retailers have developed different types of backup solutions for Internet access. They also make sure they can accept several different payment methods to have alternatives if one of the payment methods fails. Retailers would not invest in new solutions for offline payments, partly because they have created backup solutions for Internet access and partly because card payments can already be made offline.

An e-krona would increase resilience to disruptions, not necessarily by being able to work offline but rather by being an additional option if other payment methods do not work.

### **The e-krona must be demanded by customers to be widely accepted by retailers**

For an e-krona to be accepted by retailers, it should offer at least the same functionality as other payment methods. This means that it should be easy to use, be quick and easy to pay with and be able to function offline to the same extent as card payments do today. But the most important thing is that customers demand it. If customers do not want to use the e-krona, it is unlikely that retailers themselves will choose to accept it, regardless of how the e-krona is designed.

## 3 Method

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In our user survey, we interviewed representatives of companies in the grocery and durable goods sectors. A total of 64 companies participated in the study. We also interviewed representatives of three trade associations and two retail researchers.

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### 3.1 The user survey was based on 85 in-depth interviews

#### **In-depth interviews with participants in the Swedish market**

The study is based on 85 in-depth interviews with retailers, industry organisations and researchers linked to the Swedish grocery and durable goods sectors. These were carried out in spring 2023.

The interviews followed a semi-structured model. This means that the interviewer followed a guide with predetermined questions but allowed the conversation to lead to other themes. The first interview focused on the retailer's general perception of payments, what works well and what problems retailers face. During the second interview, respondents were asked to consider and discuss images, prototypes and claims about different payment solutions, known as 'trigger material'.

Most respondents participated in both rounds of interviews. In total, we conducted 48 interviews in Round 1 and 37 interviews in Round 2. The interviews were conducted digitally via Teams or on site in the store.

### 3.2 Both large chains and small stores participated in the study

#### **Three sample groups and one bonus group**

When recruiting participants for the study, actors were divided into three different sample groups: Large grocery and durable goods retail chains, smaller individual retailers and so-called 'specialised operators'. Specialised operators are deemed to have experience with payment solutions in complex environments. An example of a specialised operator is SAS, which accepts payments offline because data communication cannot take place during air travel. The larger chains were mainly recruited through trade associations.<sup>9</sup> Smaller individual retailers and specialised operators were mainly recruited through direct contact via email or during physical visits.

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<sup>9</sup> We would like to thank the Swedish Trade Federation, Drivkraft Sverige and Visita who helped with the recruitment.

In addition to the selection criteria in Table 1 for each sample group, the starting point was to have a relatively even geographical spread. For larger chains and speciality retailers, this has come naturally as they have stores all over the country. For individual retailers, operators from both urban and rural areas have been included. However, for practical reasons, retailers in western Sweden are over-represented. This is because the project team were based in Gothenburg.<sup>10</sup>

In addition to the actors in the three sample groups, representatives of three different trade associations and two researchers in the retail sector were also recruited. The aim was to complement the retailers' view of the problems in payment situations with an academic perspective. A total of 68 actors participated in the study; see Appendix 1 for the full list of participants.

**Tabell 2. Sample**

Selection groups and criteria for each group

Selection group	Definition	Number of participants
Large retailers and chains	Retailers with three or more physical stores with a common payment system, business system and head office with centralised payment solutions	10
Smaller individual retailers	Retailers with only one physical store.	42
Specialised operators	Retailers and suppliers to retailers with explicit and recognised expertise in selected areas related to payment solutions; see	11
Trade associations and researchers	Representatives of the trade associations Svensk Handel, Livsmedelshandlarna and Visita, as well as researchers in the retail sector.	5

Source: The Riksbank

<sup>10</sup> The assessment is that this does not affect the generality of the results, as several large players with shop networks throughout Sweden have participated in the study. The assessment is therefore that the somewhat narrow geographical selection of smaller retailers is compensated by the shop network of the large retailers.

# APPENDIX 1 - List of participants

Large retailers	Specialised operators (areas of expertise)	Smaller retailers	Researchers and associations
Coop	OKQ8 (fuel sales)	42 retailers <sup>11</sup>	University of Gothenburg
ICA	Preem (fuel sales)		Copenhagen Business School
Axfood	Byggmax (Self-checkout)		Svensk Handel (Swedish Commerce)
Reitan Convenience	SAS (offline payments)		Livsmedelshandlarna
H & M	Max Hamburger restaurants (self-checkout)		VISITA
IKEA/INGKA Group	MTRX (offline payments)		
Nilsson Group	Strawberry Hotels (reservation purchases)		
Clas Ohlson	4 retailers <sup>12</sup>		
	2 retailers <sup>12</sup>		

<sup>11</sup> The names of smaller retailers are not mentioned for reasons of privacy.

<sup>12</sup> Larger retailers whose company names are not disclosed.



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