

Payments in Sweden

2020



S V E R I G E S R I K S B A N K

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Payment Report

The Payment Report describes and analyses developments on the retail payment market and the services offered by the Riksbank. It is published once a year, starting 2019. The report summarises developments over the past year and presents the Riksbank's assessments and policy in the area. The aim is for the report to contribute to a knowledge-based debate and make it easier for external parties to monitor, understand and evaluate the Riksbank's policy on the retail payment market.

Payments in Sweden 2020

People in Sweden are paying more frequently by card or the app Swish, instead of in cash. This trend has grown stronger during the coronavirus pandemic. To prepare for the future, the Riksbank is investigating the possibility of issuing digital cash – the so-called e-krona. The Riksbank is additionally making preparations to allow instant payments, such as Swish, to be made using the Riksbank's system. The Riksbank and ECB are also investigating the possibility of implementing instant payments between European currencies such as the Swedish krona and euro. In addition, it is the Riksbank's opinion that those who want to use cash should be able to continue to do so. It is also necessary that payments in Sweden can continue to function in times of crisis and heightened alert.

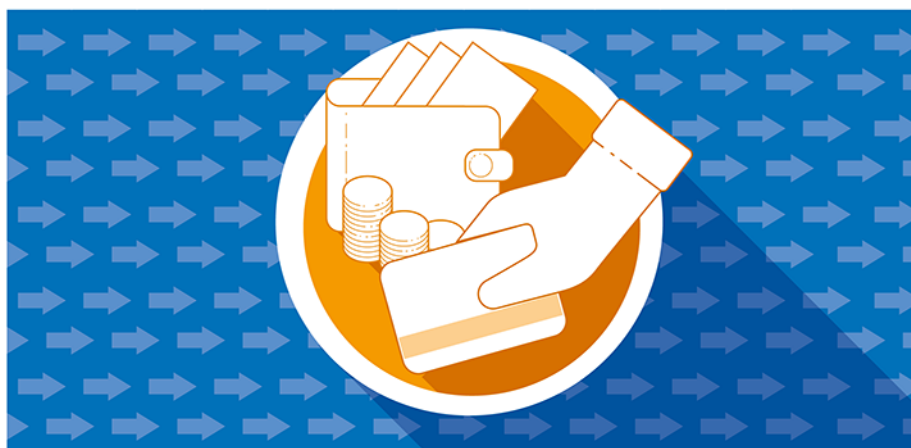
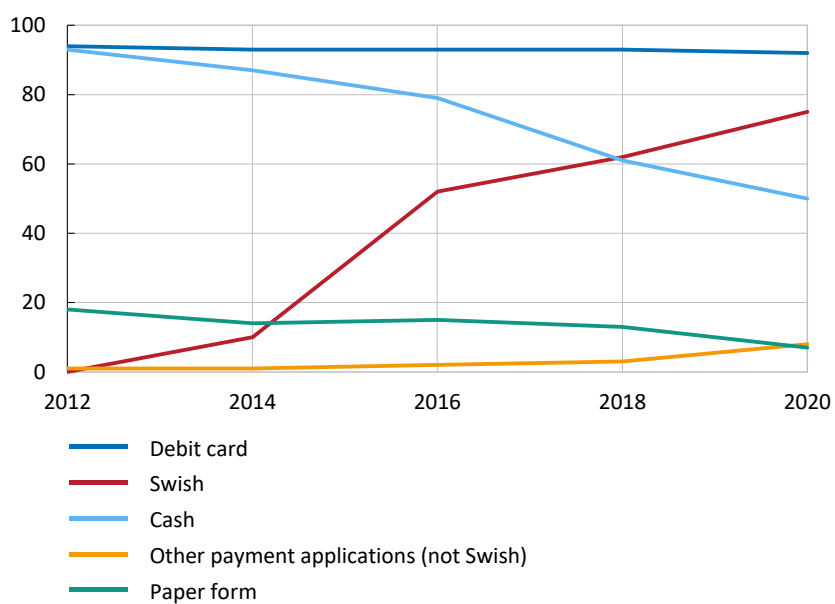


Figure 1. Swish is now used more than cash

Per cent



Note: The Swedish people's answer to the survey question "What means of payment have you used in the last 30 days?", percentages. Several response alternatives are possible.

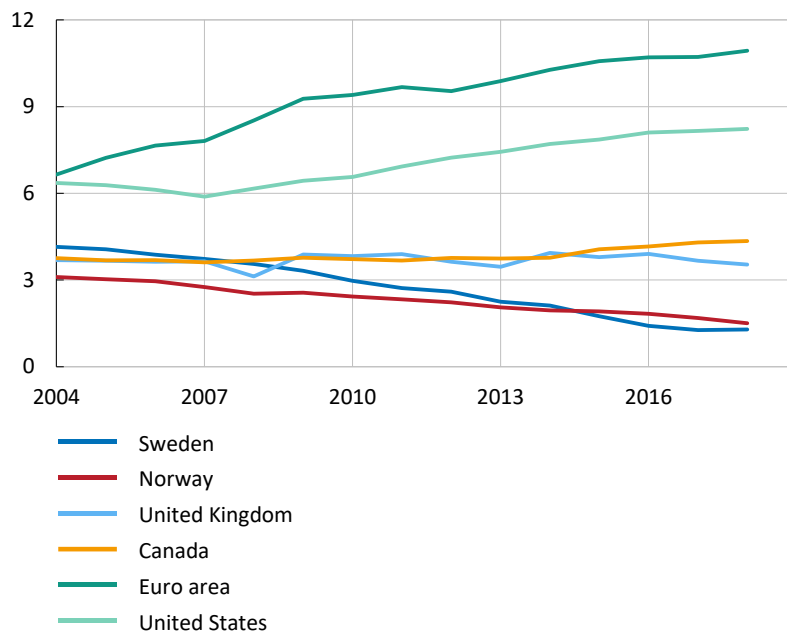
Source: The Riksbank.

1 The payment market is being digitalised

Sweden is at the forefront of the digitalisation of the payment market. Among other things, this is because fewer and fewer people in Sweden are using cash while more and more payment solutions are emerging. For example, it is becoming more common to use a mobile to make payments.

Figure 2. Rapid reduction of cash in Sweden

Cash in circulation as a percentage of GDP



Sources: BIS, Macrobond and Norges Bank.

1.1 The coronavirus pandemic has affected how people in Sweden and abroad are making payments

During the coronavirus pandemic, the Swedish people have chosen to use Swish and contactless card payments more often when paying in shops. Payments have continued to function well during the pandemic.



Payments have continued to function well during the coronavirus pandemic

In 2020, the coronavirus spread with devastating consequences for both individual people and social life. Public authorities around the world introduced comprehensive restrictions to prevent the virus from spreading, to protect human life and to safeguard the capacity of their medical care systems. Sweden prohibited public gatherings and events with over 50 participants, as well as visits to care homes for the elderly. People in Sweden were urged to restrict travel, to work from home as often as possible and to maintain social distancing. Other countries introduced more far-reaching measures. Overall, this has had substantial negative economic consequences and has led to a global economic crisis.

Like other central banks around the world, the [Riksbank](#) has therefore deployed a series of measures to alleviate the effects of the pandemic on the economy and reduce unrest on the financial markets. The Riksbank deems that payments in Sweden have functioned well during the pandemic. Over the year, the Riksbank has summoned representatives of banks, clearing organisations, cash depot companies, cash-in-transit companies, the retail trade and relevant public authorities to regular meetings. These meetings have noted that payments, the system that makes them possible and the distribution of cash in society have worked without disruption.

Payment behaviour in Sweden has been affected

The restrictions introduced during the pandemic and unease over the spread of infection have affected purchase and payment behaviour in Sweden. At the start of the

pandemic, consumption fell drastically, not least within the travel and entertainment sectors. When consumption falls heavily, so too does the number of payments. The fact that many people chose to stay at home and shop online instead of in physical shops is also important for the means of payment used.

Use of the payment application Swish has seen a relative increase during the pandemic. The greatest increase has been among elderly people (see [Many people make payments by mobile telephone, for example with Swish](#)). The number of contactless payments has also increased in conjunction with the limit for such payments being raised from 200 kronor to 400 kronor in April. Contactless payments have existed in Sweden since 2015 and involve the customer paying by card or mobile application using a digital wallet where card details have been registered. In Sweden, [almost 60 per cent of card payments are contactless](#). This is an increase from 42 per cent in January. Contactless payments are used most in the non-durable goods segment and at restaurants and bars, where no less than 73 per cent of card payments are contactless.

Cash usage in Sweden also seems to have fallen during the pandemic. This is partly due to cash primarily being used in physical shops, cafés and restaurants, where activity decreased heavily at the start of the pandemic. In addition, cash is used more by elderly people, who have presumably stayed at home more during the pandemic. But it may also be an effect of many banks, shops and restaurants having chosen to refuse cash. Even if it is too early to draw any conclusions, there are many indications that [once consumers have become used to digital solutions, this may have more permanent effects](#).

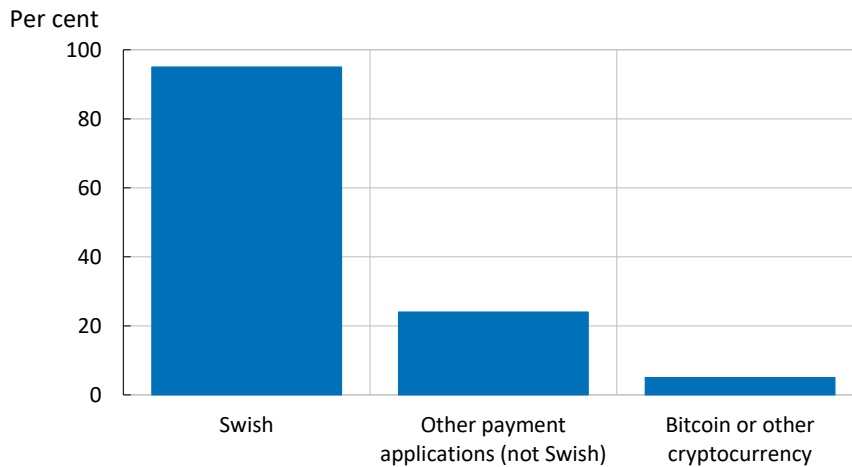
Increased focus on central bank digital currency

During the pandemic, the central banks' work on developing central bank digital currency has intensified. In Sweden, there has long been a trend towards a cashless society but, in other countries, cash payments did not decrease until the pandemic started. This has led more central banks and international organisations to accelerate their work on digital payment solutions and to initiate international cooperation on central bank digital currency (see [International cooperation on central bank digital currency](#)).

1.2 Many people make payments by mobile, for example with Swish

Electronic commerce and mobile payments, such as Swish, are becoming increasingly common. Other payment applications such as Apple Pay and Google Pay are also becoming more popular. About five per cent of young people in Sweden own some form of cryptocurrency, such as Bitcoin.

Figure 3. The majority of younger people have access to Swish



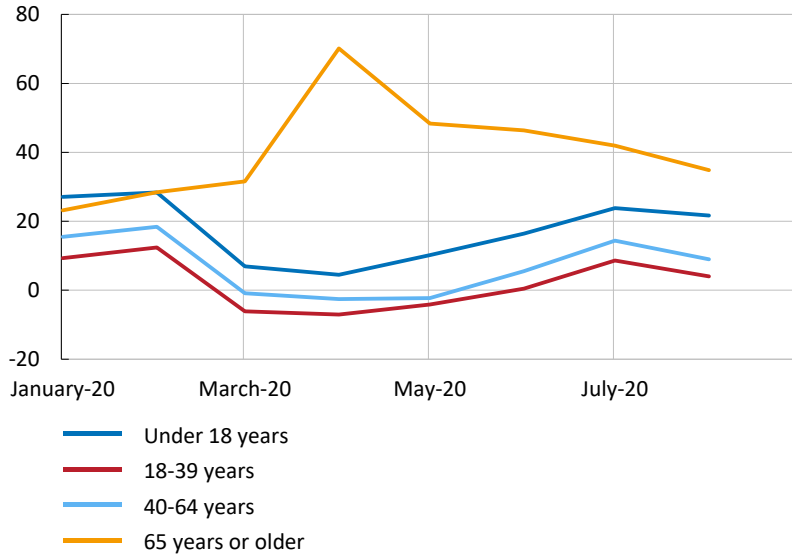
Note: Percentage of people in age group 18-24 years with access to Bitcoin or other cryptocurrency, Swish and other payment applications (not Swish).

Source: The Riksbank.

Changed Swish habits during the pandemic

Figure 4. During the pandemic, older people have started to use Swish more

Per cent

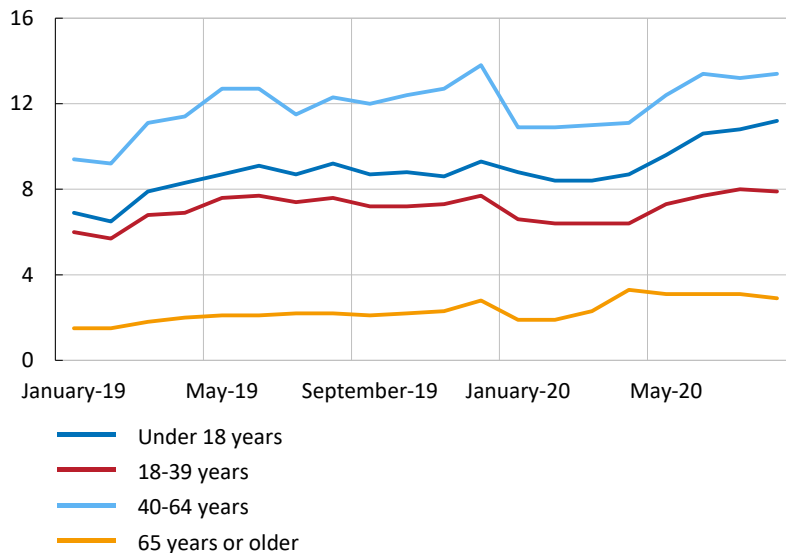


Note: Change in number of Swish payments between private individuals compared with the same month of the previous year, by age, per cent.

Source: Swish (Getswish AB).

Figure 5. ...but older people still make fewer Swish payments than other age groups

Millions



Note: Number of Swish payments between private individuals, by age.

Source: Swish (Getswish AB).

Elderly people have started to use Swish more during the pandemic. People over the age of 65 use Swish the least compared with other age groups, in relation to the total

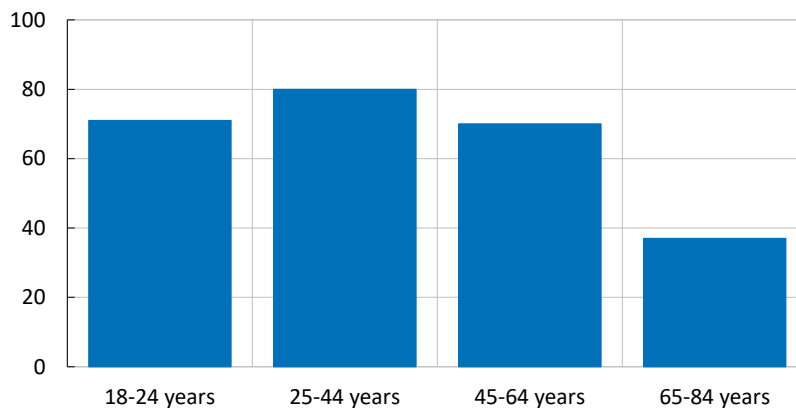
number of Swish payments, both as regards Swish payments from private persons to companies and transfers between private individuals. However, in April, people over the age of 65 made 70 per cent more Swish payments to other private persons than in the same month of the previous year. A likely explanation for this is that elderly people have largely stayed at home during the pandemic and have instead used Swish to pay family members and friends who have made purchases for them. After this, the rate of increase for people over the age of 65 slowed down but it remains higher than before the pandemic and higher than in other age groups. Other age groups did not increase their payments and transfers via Swish as much (in some cases, they fell compared with the same month of the previous year).

Electronic commerce is becoming increasingly common

Purchasing goods and services on the Internet is common. In the Riksbank's survey of the payment behaviour of the Swedish population in 2020, 66 per cent of respondents state that they have purchased goods and services on the Internet in the last 30 days. In 2018, the corresponding figure was 56 per cent. It is most common in the age group 25-44, where 80 per cent state that they have bought something over the Internet in the last 30 days. But it is becoming increasingly common in other age groups too.

Figure 6. More and more people are purchasing goods and services on the Internet

Per cent



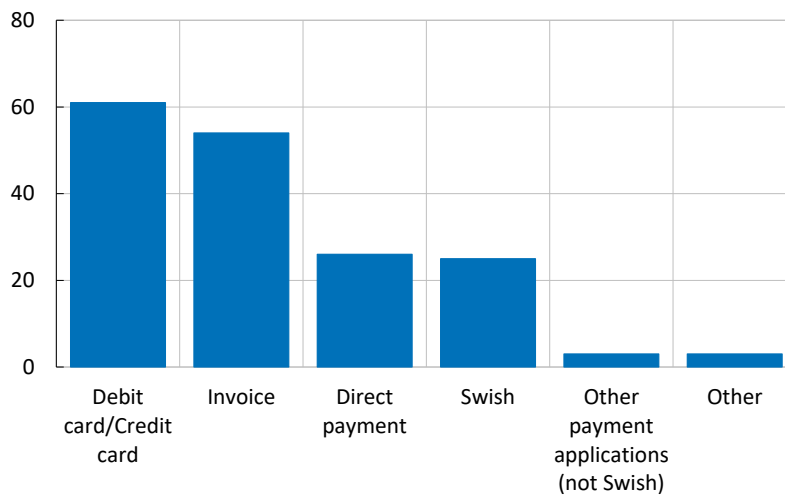
Note: Percentage of people in each age group that have shopped online in the last 30 days.

Source: The Riksbank.

Most people shopping on the Internet use cards, but payment via invoice is almost as common. Just over 20 per cent today use Swish and as many use direct bank payments via online banking. On 1 July 2020, an amendment was made to the Consumer Credit Act with the aim of making it less attractive to shop on credit. The amendment entails that, if other payment alternatives than credit are possible when shopping online, they must be displayed before the credit alternative. Swish reports that the number of traders joining Swish has increased since the decision to amend the Consumer Credit Act became official.

Figure 7. Common to pay by invoice on the Internet

Per cent



Note: Means of payment used by people in Sweden in eCommerce in the last 30 days, percentages.

Source: The Riksbank.

New ways of using Swish

For purchases in physical shops, it is much more unusual to use Swish or invoicing. Only one per cent of respondents state that they have done so for their latest purchase. However, Swish is developing its services for payment using QR code and this will make it easier to use the application in shops. Swish also has a pilot project in which a limited number of companies will test using Swish for outward payments. Swish has also initiated cooperation with other European companies offering mobile services for instant payment to make it possible for Swish users to make payments elsewhere in Europe.

Google Pay, Samsung Pay, Apple Pay and cryptocurrencies such as Bitcoin are also being used now

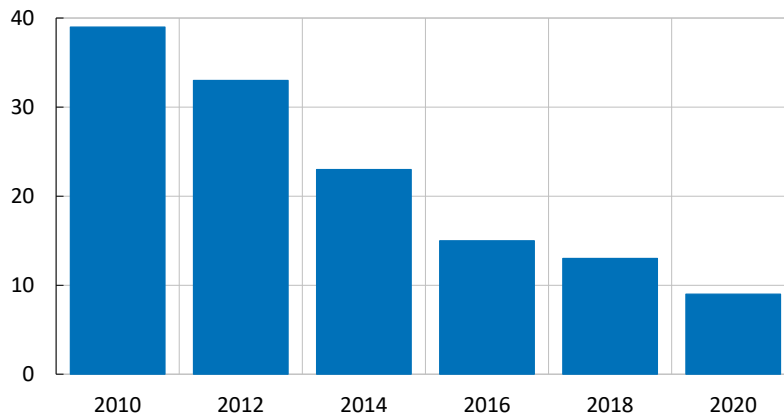
Swish is not the only mobile application used to make payments. 16 per cent of respondents state that they have access to another payment application such as Samsung Pay or Apple Pay. In addition, five per cent of the youngest age group have access to some form of cryptocurrency such as Bitcoin. However, they have not stated that these have been used to make payments, so it is possible they view it more as an investment.

1.3 Cash is losing ground

People in Sweden pay less and less often in cash. In ten years, the proportion paying with cash has fallen from around 40 per cent to less than 10 per cent. Cash is now mostly used for small payments and primarily by older people.

Figure 8. Cash used to a lesser extent

Per cent



Note: Percentage of people paying in cash for their last purchase.

Source: The Riksbank.

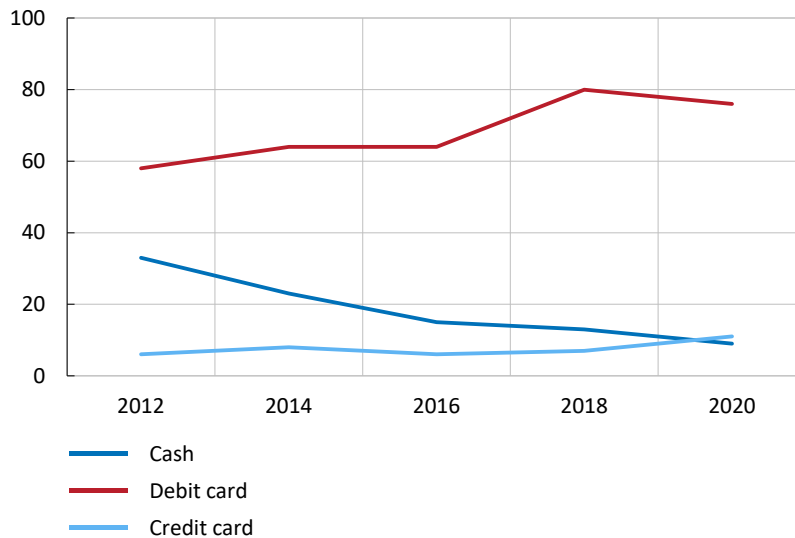
The use of cash is declining

In 2010, 39 per cent of respondents in the Riksbank's survey of the payment behaviour of the Swedish population said that they paid for their most recent purchase in cash. By 2020, this figure had fallen to 9 per cent. At the same time, 50 per cent of survey respondents stated that they had used cash in the last month, which is also a decrease compared with 2018 when the corresponding proportion was 61 per cent.

Credit cards are now also more common than cash

Figure 9. Card payments dominate in purchases in shops

Per cent



Note: Percentage of people paying by debit card, credit card or cash for their last purchase in a shop.

Source: The Riksbank.

Debit cards, where money is deducted directly from a bank account, are the most common way of paying in shops regardless of the size of the payment. Cash, on the other hand, is used more frequently for smaller payments, below 100 kronor. Credit cards (where the customer pays using credit from the bank and then receives an invoice) are used more frequently as the amount increases. Since the Riksbank's last survey of payment behaviour was conducted in 2018, credit cards have overtaken cash. Swish is seldom used for purchases in shops.

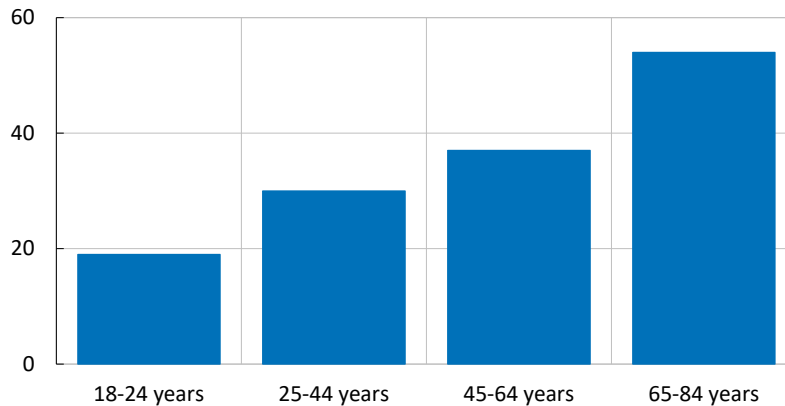
For card payments where the contactless system is not used, it has been possible to sign for payments using either PIN codes or signatures on paper receipts. In September 2019, new [rules](#) were introduced to strengthen customer authentication in the EU/EEA. Among other things, these rules aim to increase consumer protection and improve security for digital payments. During the [transition period](#), it has been unclear how signing for transactions on paper receipts is to be handled but, as of 1 November 2020, this will no longer be accepted for card payments in Sweden using cards issued in the EU/EEA. This means that the transaction will be denied when a PIN code is unavailable for a card payment. It will still be possible to make contactless card payments for less than 400 kronor, which currently require no PIN code, as usual. Cards issued outside the EEA are not covered by the rules for strengthened customer authorisation, and it will therefore still be possible to continue to make card transactions in shops using such cards by signing a paper receipt. This also applies to card payments made in a third country using a card issued in Sweden or another EEA country.

1.4 Cash free – not problem-free

People in rural areas are finding it harder to cope without cash. This is also true of elderly people. In addition, many people experience occasional technical problems when paying in shops.

Figure 10. Older people are most negative to the use of cash declining

Per cent



Note: Percentage of people in each age group who are negative to the use of cash declining in society.

Source: The Riksbank.

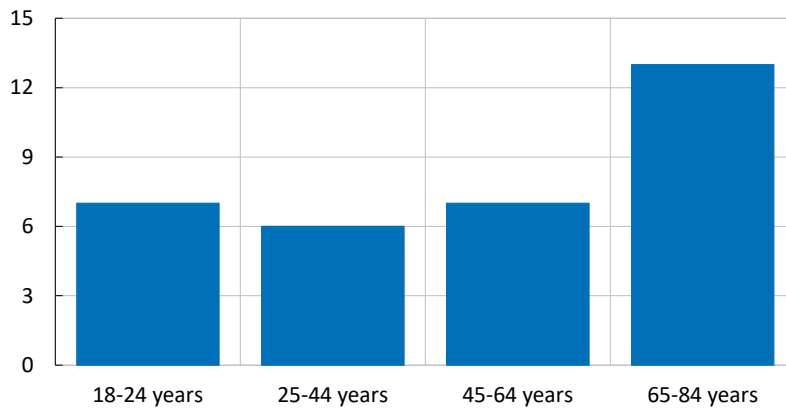
Some groups can find it difficult to pay without cash

The less frequent use of cash is due to consumers and companies preferring to use digital payments. However, some groups in society find it difficult to cope without cash. For example, over half of people over 65 state that they are negative towards the decline in cash usage. The Riksbank, politicians and other authorities have therefore taken measures to try to slow the trend towards a cashless society (see Swedish banknotes and coins – the Riksbank's new responsibility for cash handling).

When asked which means of payment they used for their last purchase in a shop, a total of nine per cent said they had used cash. For older people, aged 65 to 84 years, this figure is higher at 13 per cent.

Figure 11. Older people pay in cash more often than others

Per cent



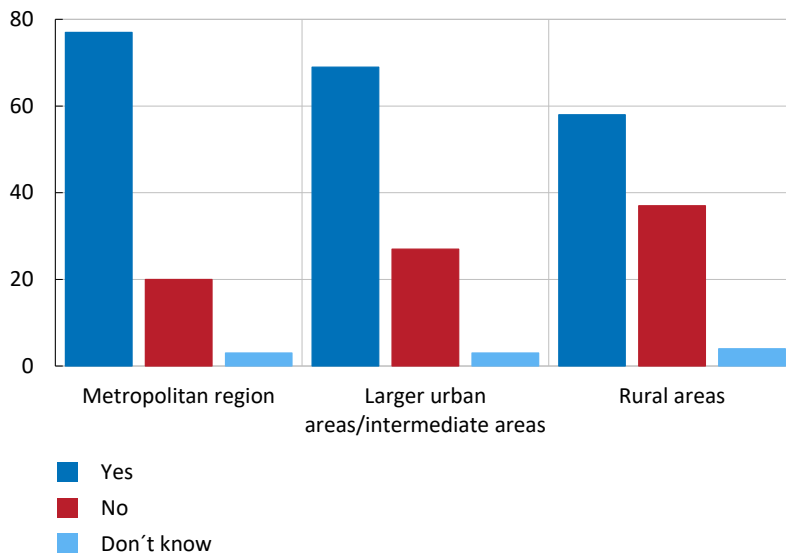
Note: Percentage of people in each age group paying in cash for their last purchase in a shop.

Source: The Riksbank.

People in rural areas also say, to a greater extent, that they would not be able to cope without cash in society as it is at present. The difference between urban and rural areas is great, as 19 percentage points more say they would find it difficult to cope without cash in rural areas, compared with urban areas.

Figure 12. Harder to cope without cash in rural areas

Per cent



Note: How the population of different regions answered the question "Could you cope without cash the way society looks today?", percentages. Rural areas include tightly- and sparsely-populated areas.

Source: The Riksbank.

Without cash, vulnerability to interruptions in the electricity network and Internet increases

As long as most people have cash in their wallets, there is a good back-up alternative in the event of technical problems with electricity or the Internet, for example. When fewer people have cash available, problems like this can have more serious consequences. ATMs also require electricity and an Internet connection to function, so the presence of an ATM in such a circumstance would not be enough. Over half of the population report that they have encountered technical problems when paying in a shop, and 59 per cent say that this concerned card payments.

Other problems can also arise

When fewer people use cash, other problems also arise. For example, the number of counterfeit banknotes has increased. These are often of low quality but, when fewer people are using cash, fewer people also have knowledge of what a genuine banknote looks like and the risk then increases that somebody will accept a counterfeit banknote.

As demand for cash services decreases, increasing numbers of banks also stop offering these. Four of the five largest banks in Sweden now offer no manual cash services over the counter at all or only do so at two or fewer offices in the whole country. Instead, customers are referred to ATMs for cash services. ATMs for the withdrawal of banknotes can be found at relatively many places across the country but CDMs (cash deposit machines) are significantly fewer. It is also becoming increasingly difficult for households to deposit their coins and, at present, there are only a few coin deposit machines. Increasing numbers of shops are also choosing not to accept cash.

Initiatives to help vulnerable groups

[The county administrative boards'](#) task is to ensure that possibilities for using basic payment services meet social needs, and they have a special responsibility for investigating how the situation is for older people and people with disabilities. Every year, the results are presented in a report to the Government. The [Swedish Post and Telecom Authority \(PTS\)](#) has been commissioned by the Government to support the county administrative boards' work of designing and implementing regional support and development initiatives to secure access to basic payment services in those areas where needs are not being fulfilled by the market. In the private sector too, initiatives have been launched to support those groups experiencing digital exclusion. One of these is [Betalningshjälpen.se](#), which aims to make the digital economy more inclusive so that everyone is able to manage their day-to-day economics, regardless of conditions and age.

1.5 Why are people in Sweden no longer using cash?

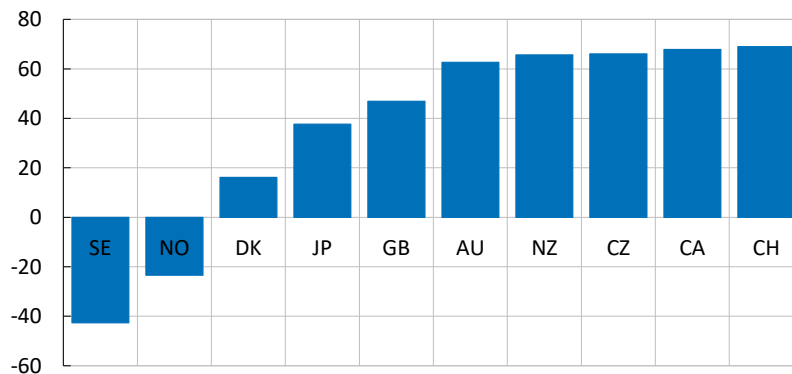
Apart from Sweden, it is only in Norway that the amount of cash in circulation has fallen over the last ten years. For Sweden, this may be due to measures making cash less attractive being introduced at about the same time as Swish was emerging as a convenient alternative to cash.



Cash is disappearing faster in Sweden than in other countries

Figure 13. Change in the nominal cash volume

Per cent



Note: Countries with the lowest percentage increase of cash in circulation between 2009 and 2019. The countries in the diagram consist of a sample of 219 countries.

Source: Armelius, H, Claussen, CA and Reslow, A (2020). "Withering cash: Is Sweden ahead of the curve of just special?" Sveriges Riksbank Working Paper Series No 393.

More and more people in Sweden are abandoning cash (see Cash is losing ground) and the volume of cash in circulation has fallen heavily over the last ten years. Compared with other countries, developments in Sweden stick out. Apart from Norway, where the decrease in the volume of cash in circulation is half as large as in Sweden,

the volume of cash has increased in all other countries. Why has cash decreased so much in Sweden?

The development in Sweden cannot be explained by [traditional causes](#). Usually, the volume of cash increases with higher GDP and countries with high interest rates and young populations usually have relatively smaller cash volumes. Over the last ten years, Sweden's GDP has grown while the level of interest rates has fallen. At the same time, the age composition of the population has remained largely unchanged. So, if anything, this should mean rising cash volumes.

Measures against tax evasion and the banknote and coin changeover may have contributed

Part of the [explanation](#) for the deviation in Sweden may be a combination of measures and events, including measures against tax evasion, the banknote and coin changeover and the introduction of Swish.

Cash leaves no traces and can therefore be used when somebody wants to conceal payments and thus avoid taxation. In recent years, Sweden has carried out reforms with the aim of reducing tax evasion. Over the period 2007-2008, tax deductions were introduced for household services (ROT and RUT) and, in 2010, a new cash register act was introduced, meaning, among other things, that anybody accepting cash payments must have an approved cash register and must print out and offer the purchaser a receipt. The Swedish Tax Agency deems that these measures have reduced tax evasion. They have thus probably also contributed to reducing demand for cash. When the RUT and ROT tax reforms and the cash register act were introduced, the volume of cash was at its highest. Since then, it fell until 2017, after which it slowly rose again.

The banknote and coin changeover may have entailed costs for those needing to exchange their cash. When old banknotes become invalid, households must hand in the cash they have had as a buffer. If holding and using cash is considered complicated, it may speed up a process in which people become used to using other means of payment. In recent years, the Riksbank has conducted a large multi-stage banknote and coin changeover. This may also have reduced willingness to hold cash. The fall in the volume of cash accelerated during the banknote changeovers (after 2013 and then again after 2016). The increase in cash volumes after the banknote changeover may be due to households and companies having gotten rid of more banknotes than they actually wanted to and thus having built up their holdings again when the new banknotes arrived.

Measures like this have also been taken in other countries over the same period and there are also Swish-like applications in other countries. However, in Sweden, the banknote and coin changeover took place over a shorter period and on stricter terms than in other countries. At the same time, Swish is relatively unique in that many banks use the same application. Other countries have several applications that cannot be used for payments and transfers between bank accounts in all banks in the same

way as Swish. The exceptional situation in Sweden may thus be due to a unique Swedish combination of measures that have made cash less attractive and digital payments more easily accessible and convenient.

2 Swedish payments are secure and efficient

Overall, payments in Sweden are secure, but the number of counterfeit banknotes has increased in 2020. Digitalisation has led to payments becoming more convenient and less costly, but this development is problematic for some groups in society. In addition, vulnerability increases when many people are dependent on the same card suppliers, particularly when few people have cash in their wallets. International payments can still be expensive and take time.



2.1 Are payments in Sweden secure?

Payments in Sweden are secure and there have been few interruptions in the major payment systems in 2020. The number of counterfeit banknotes in circulation has increased but Sweden still has few counterfeits from an international perspective.



Money and the institutions handling payments must be secure

Several things are needed for payments to be secure. Firstly, money must maintain its value over time. Secondly, the institutions that handle our money and payments must be secure. Thirdly, the financial infrastructure, which is to say the technical systems used to mediate payments, must be secure.

The Riksbank's inflation target ensures that the Swedish krona keeps its value over time. Finansinspektionen (the Swedish financial supervisory authority), the Riksbank and other authorities work to ensure that the credit institutions, including banks, and the infrastructure that handles our money and payments are secure. The [deposit guarantee](#) means that private individuals with money in institutions covered by the deposit guarantee receive compensation from the state (up to SEK 950,000 per person and institution) if the institution enters bankruptcy or if Finansinspektionen decides that the deposit guarantee is to be applied.

Few disruptions in important systems

The Riksbank's central settlement system for large-scale payments, RIX, and the clearing house, Bankgirot, are central hubs in the Swedish payment system. Disruptions and interruptions in either of these systems therefore affect the entire payment system and can result in one or more payment systems ceasing to function. In recent years, the disruptions that have occurred in RIX have not affected the ability of companies and households to make payments.

In May 2020, an incident occurred in SWIFT, the global supplier of the network in which payment orders are sent between actors on the financial market. The incident affected the entire European market, including the RIX system in Sweden. As SWIFT is

a highly central actor for most of the infrastructure of the financial markets, an incident can have very serious effects. The incident affected large sections of the financial markets, but payments in the consumer channel were not tangibly affected. As the incident was resolved quickly and also occurred at a time when there were few payments in RIX, it had a minor effect on the payment settlement in RIX.

For the Swish service to function, Bank-ID and the Betalningar i realtid (BiR) platform must also function. In addition, the banks' internal systems must function. In total, access to Swish has been good, even though there have been some disruptions in these systems. As a customer, it is difficult to know where the cause of the disruption lies. Of course, as more and more people use Swish and rely on the service, it becomes more serious when there are disruptions in the underlying infrastructure. It is therefore important that the institutions and infrastructure that enable Swish payments minimise their vulnerabilities.

More counterfeit banknotes

Even if the money and institutions that manage our payments are secure, there may be other risks linked to our payments and means of payment. For example, there is always a risk that cash will be stolen or counterfeited. But from an international perspective, the new Swedish banknote series has a very high level of security with details that are very difficult to counterfeit and easy to identify.

One problem when fewer people are paying in cash is that knowledge of what a genuine banknote looks like decreases, and the risk then increases of people accepting counterfeit banknotes even if they are of low quality. In 2019, the number of counterfeits in Sweden also increased, as 1,703 counterfeit banknotes were discovered. Of these, 1,557 were 500-krona banknotes. This is an increase from previous years but is still a small amount compared with other countries. The trend of there being more counterfeit banknotes in circulation seems to be continuing in 2020. In the first quarter alone, 1,554 counterfeit banknotes were found, the overwhelming part of which (1,513) were 500-krona banknotes. The counterfeits discovered so far have been of very low quality and attempts at imitating the security features on the banknotes have been highly unsophisticated or absent. It is thus easy to see whether a banknote is genuine if you know what to look for. Over the year, the Riksbank has conducted campaigns in social media and elsewhere to increase awareness of [what a genuine banknote looks like](#).

The risk of card fraud in shops in Sweden is low

Paying by card is safe in Sweden, but [card fraud](#) can occur when a debit card or credit card is read during payment, or when withdrawing cash from an ATM. In a [European comparison made by the ECB](#), Sweden was just above the European average concerning the number of card frauds up until 2018. However, according to statistics from the police, the number of card frauds in Sweden has decreased over the last year. So far in 2020, the average monthly number of card frauds has been 29 per cent lower than in 2019.

The risk of fraud is low for card payments in shops in Sweden. Most card frauds take place in cross-border online payments, so-called Card Not Present frauds, where card details may have been stolen in a data security breach. The risk of fraud is greatest in Card Not Present payments outside the EEA area.

Since September 2019, payment transactions within the EEA have required strengthened customer authorisation. This requirement aims to protect consumers and others using payment services against card fraud. Strengthened customer authorisation means, as a principal rule, that a customer must provide identification using at least two of the following factors when making a digital payment or logging on to a payment account:

- knowledge (something that only the user knows, for example a password or a PIN code)
- a possession (something that only the user has, for example a card or a telephone)
- a unique characteristic (a physical feature of the user, for example a fingerprint)

In Sweden, the requirement for strengthened customer authorisation means that, as a rule, a PIN code for a card or Bank-ID is needed to make a payment transaction in a shop or online. For example, many people now have a code sent to their mobile telephone to verify online purchases. There are, however, a number of exceptions from the requirement for strengthened customer authorisation, among other things for low-value transactions and in contactless payments in shops.

Swish fraud occurs

As Swish has become increasingly established as a payment service, it has also become increasingly common for Swish to be used in fraudulent advertising and phone fraud. The police also report that Swish has been used in money laundering with money being sent along a chain of front men before finally being withdrawn as cash or used to purchase expensive capital goods.

Increased vulnerability when many are using the same network

When many people abandon cash for cards and mobile payments, vulnerability to interruptions in the systems may increase, particularly if these use the same underlying networks. For example, if there is an interruption in one of the major card networks, many people in Sweden may be unable to make payments. This would be even more serious if people do not have cash in their wallets.

2.2 Are payments in Sweden efficient?

Payments in Sweden are efficient, which is to say rapid and inexpensive. Digital payments using cards and Swish are cheaper than cash payments. As a large part of payments have become digital in Sweden, society's costs for payments have started to fall.



All payments presuppose an underlying infrastructure

For cash to be used in society, an underlying infrastructure is required in the form of ATMs, service boxes for daily takings, transport vans and secure premises for the storage of cash, for example. When paper-based credit transfers are used, functioning post management and a data input centre to translate the forms to digital information are needed. Digital payments require IT platforms where the payment information can be processed. To process a card payment, the customer's bank must exchange information with the shop's bank and, when paying via e-invoice, the invoice information must be transferred to the customer's bank and reported to the customer. All of this infrastructure entails costs of various kinds.

Paying by mobile or card is cheaper than using cash

Some costs are fixed and do not depend on how many payments have been carried out, such as rent for premises and purchases of hardware. Other costs are variable and depend on the number of payments, such as petrol for the vans that transport cash and the cost of sending electronic notifications. The fixed costs mean that there are economies of scale to be gained in the infrastructure as the average cost for making a payment falls when the number of payments increases. Economies of scale are, however, greater for digital payments than for cash, as cash must be handled physically and has higher variable costs than digital payments do. When the number of digital payments increases and the amount of cash payments decreases, cash becomes relatively more expensive to handle while digital payments become cheaper.

Some competition problems on the payment market

[Swedish banks have long cooperated to make efficiency gains](#). As early as 1925, the public-owned Postgirot was formed in response to the need for more efficient mediation of payments via cashless payments by giro transfer. In the 1950s, the banks then formed their own variation in the form of Bankgirot, in which standardised paper forms facilitated the management of payments between banks. In more modern times, the Swedish banks have also collaborated over withdrawals from ATMs and purchases with debit cards, to give two examples. The banks have also established a joint system for Bank-ID and Swish, to which the largest Swedish banks are connected. In many other countries, these activities do not work anything like as smoothly. There, for example, it can be difficult or expensive to withdraw money from another bank's ATMs.

Cooperation between banks has made it possible to utilise network effects, but the downside of this is that this concentration can make the system vulnerable and lead to a lack of competition. As regards instant payments, there is only Swish at present. As regards e-identification – an important precondition for electronic payments – Bank-ID is completely dominant at present. Government e-identification could be one way of guaranteeing that there is at least one more alternative. An inquiry into [government e-identification](#) has recently been concluded and it recommends that this be introduced.

The coronavirus pandemic is putting pressure on cash distribution

Developments on the payment market have been accelerated by the marked decrease in parts of the trade, tourism, entertainment and restaurant industries caused by the coronavirus pandemic. One clear sign of this is that both the number of ATM withdrawals and the value of these withdrawals fell at the start of the pandemic and then stabilised at a lower level. The decrease in cash use has thus decreased the amount of cash that needs to be transported and the amount of daily takings that need to be deposited. Neither do ATMs need to be refilled as often.

If the decrease in cash usage should turn out to be permanent, this may create problems as it will probably be less profitable for cash-in-transit companies to distribute cash to the same extent as previously. At the same time, however, the larger banks will be legally obliged to offer a certain level of service for cash withdrawals and deposits of daily takings (see Swedish banknotes and coins – the Riksbank's new responsibility for cash handling). This, in turn, could contribute towards stabilising demand for the cash-in-transit companies' cash services.

Important to maintain non-digital means of payment

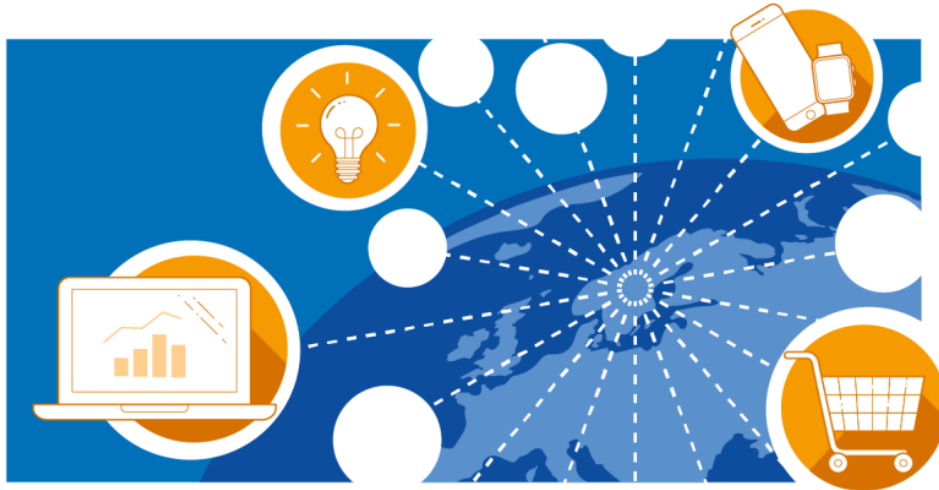
Cash services are being automated to an increasing degree. Manual cash services, in which cash can be withdrawn and deposited over the counter, are becoming increasingly rare at banks. Automated cash services work well for most consumers but for those who need or want to use manual services, this development is problematic. Bank branches offer a protected environment and some consumers appreciate not

having to feel exposed to risks when using ATMs in public environments. It is particularly difficult for consumers to use coins (see Cash free – not problem-free).

Paper-based credit transfers, where payment instructions are sent in by post, are another service where the number of payments is decreasing. At the same time, this service is important for those without access to digital technology or who find it difficult to use it for other reasons. Even though the digitalisation of society has come far and is continuing at a rapid pace, it is important for a smoothly functioning payment market that the supply of manual services and postal-based services is maintained.

2.3 Fintech brings new solutions for the payment market

Fintech is an important sector that can contribute to new ways of paying and greater efficiency on the payment market.



Fintech solutions can make payments more efficient

Over the last decade, a number of technology companies – known as [Fintech](#) companies – have become established on the payment market in Sweden. Several of these have introduced new, convenient ways of paying and have thus helped make payments in Sweden easier and more secure. The Fintech sector in Sweden is well placed from an international perspective. The reasons for this are that the digital infrastructure is well-developed and that IT know-how among the population is strong.

The continued contribution of the Fintech sector to the development of the payment market will require a clearer and more comprehensive regulatory framework that both promotes financial stability and encourages customers to trust the services offered by the new actors. This is a task for politicians and authorities both in Sweden and on the EU level.

The authorities are working to promote innovation

The Swedish Government sees Fintech as an important future sector and has given several government agencies the task of promoting it. On behalf of the Government, Finansinspektionen is therefore running [the FI centre for innovation](#), which has the task of advising potential new Fintech actors. The Swedish Agency for Growth Policy Analysis has also been assigned to analyse the sector and propose measures that could strengthen its innovativeness. On the European level, the EU Fintech Action Plan is also under way, aimed at increasing competition and innovation in the financial system.

Central banks can also be important catalysts for new Fintech actors, particularly within the area of payments. For example, central banks can offer settlement systems

that make it easier for more potential participants to gain access to the central bank's systems.

The Bank for International Settlements (BIS) plans to establish a [Nordic Innovation Hub Centre](#) in Stockholm in collaboration with the central banks of Denmark, Iceland, Norway and Sweden. According to the BIS, this centre will contribute to deepening knowledge in several areas concerning financial innovations that are relevant to central banks.

2.4 International payments need to be improved

Payments between Sweden and the euro area function as smoothly as payments within Sweden. However, payments to countries with other currencies than the euro are often slow and expensive.



Card payments function smoothly

Overall, card-based cross-currency payments function smoothly, both for online purchases and when abroad. However, unlike when making payments in Swedish kronor, an exchange rate markup must be paid to the bank. In addition, card payments cannot be used for payments between private persons and neither can they be used for some bills and payments such as government charges, taxes, rent, pupil allowances and the like.

Payments between accounts work less well into many currencies

Account-to-account payments between countries are common for purchases of larger objects such as cars, boats and real estate. They are also common in payments of taxes and fees, when making gifts and so on, when the payer initiates a payment to be deposited in the recipient's bank account abroad. How much this costs and how long such a payment takes varies greatly depending on the country the money is to be sent to. Sending money to bank accounts in the euro area, Denmark, Norway and other EEA countries is significantly faster and cheaper than making payments to other countries.

Account-to-account payments from Swedish kronor to euros are just as fast and incur the same fees as making payments within Sweden. The only difference is that an exchange rate markup is added. This type of payment functions so well because the major Swedish banks are active in the euro area and can therefore initiate payments themselves in the euro countries' payment systems without using expensive intermediaries. It is also due to there being joint regulations in the EU that regulate prices and the time that a payment is allowed to take (EU 2015/2366 and EU 924/2009).

It is expensive if the recipient wants cash

Cross-currency payments, via institutions such as Western Union, for example, can be convenient and are occasionally the only solution if the recipient does not have a bank account. Payments of this kind are often used when guest workers and others send money to relatives abroad. A payment using this solution starts with the payer depositing money, for example in cash, by card or by bank transfer, with an institution. The payer receives a claim on the funds the institution holds on behalf of the payer, known as client funds. The institution then transfers this claim (or parts of it) from the payer to the recipient. As the transfer takes place within the same institution, payment can take seconds, even when it is cross-currency. Depending on the services the institution offers, the recipient can retain the funds in their own (payment) account with the institution, request a transfer to a bank account or have the funds paid out in the form of cash. However, having the funds paid out in the form of cash can be very expensive.

FACT BOX SOME ILLUSTRATIVE CALCULATIONS OF INTERNATIONAL PAYMENTS

Account-to-account payments between Swedish kronor, Norwegian kroner, Danish kroner and other national currencies within the EEA proceed as quickly as payments within Sweden. However, the fees are high and exchange rate markups are applied. For example, the normal cost for a payment to Norway or Denmark for a consumer is SEK 50. These payments proceed as quickly as they do within Sweden due to the EU regulations that are in place (EU 924/2009). However, the fees are not regulated.

Account-to-account payments to currencies outside the EEA are expensive and slow. Payments of this kind are not regulated in the same way as payments within the EEA. In addition, the payments sometimes have to go via many banks and national payment systems, and the payments therefore are often very sluggish, hard to monitor and expensive. A payment can take up to five banking days and sometimes even longer. For a consumer, an account-to-account payment can cost about SEK 150-250. An exchange rate markup is also added to this. For example, a payment of SEK 1,000 from a major Swedish bank to an account in a US bank would cost SEK 330 in total. This calculation refers to a payment from a major Swedish bank in February 2020, where the bank's fee was SEK 150, the exchange rate markup was SEK 84 and the US bank charged a fee of SEK 100.

Fees for cross-currency payments that are not account transfers and where the recipient is to have the money paid out in cash are often high. As the fixed fees are high, the cost becomes particularly high for smaller amounts. For example, it costs SEK 500 to send SEK 1,000 from Sweden to Uganda via Western Union. However, the payment can proceed very quickly. For example, the recipient can receive a code via text message when the payer has initiated the payment. The recipient can therefore more-or-less immediately collect the money from an institution or agent that is open. If the recipient wants the money deposited in an account or held at the institution, the fees are lower. In some cases, they are very low and there are now several companies that offer convenient and inexpensive transfers, for example via applications for mobile telephones.

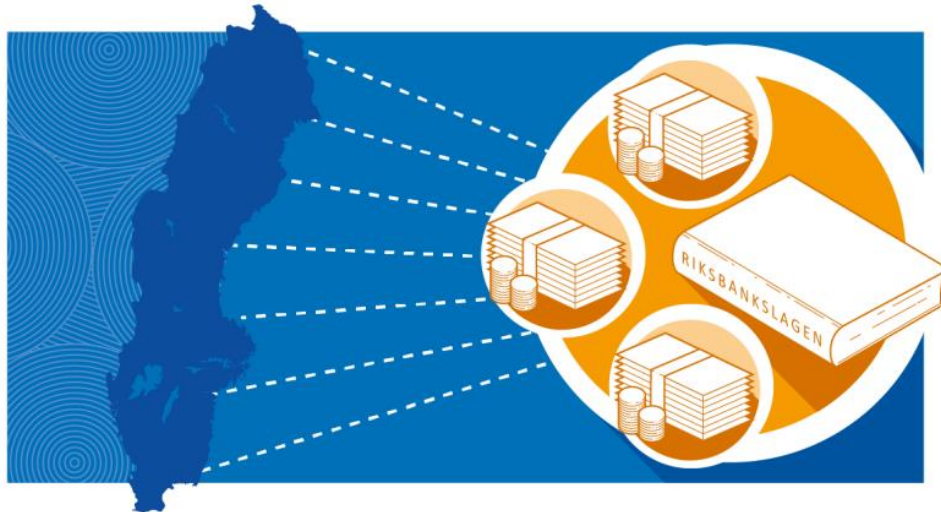
3 The Riksbank is adapting to a changing world

The proposed new Sveriges Riksbank Act increases the Riksbank's responsibility for cash distribution and preparedness on the payment market. This year, the Riksbank signed an agreement with the ECB that makes it possible for Sweden to utilise the ECB's system for payments in real time, TIPS. The Riksbank is also participating in the international work of developing central bank digital currency (CBDC).



3.1 Swedish banknotes and coins – the Riksbank's new responsibility for cash handling

According to the proposed new Sveriges Riksbank Act, the Riksbank will have greater and clearer responsibility for cash handling in society. As it is becoming less and less profitable to transport cash, the Riksbank may need to build up more banknote depots across the country.



The Riksbank will presumably have greater responsibility for cash

At the end of last year, a new Sveriges Riksbank Act was [proposed](#). According to the proposal, the Riksbank is to have overall responsibility for access to cash across the entire country. Among other things, this means that the Riksbank has the responsibility of ensuring there are depots across the entire country, which is to say places where banknotes of all denominations can be collected and deposited.

Table 1. The Riksbank Committeés proposal for the division of responsibility in the cash supply

Part of the cash chain	Responsibility
Issuing cash (Issue, redemption and destruction)	The Riksbank
Cash handling wholesale (Depot operations)	The Riksbank
Cash handling retail (Cash transport, counting services, sales to end customers etc.)	<i>Banks</i> Necessary conditions to meet legal requirements on reasonable access <i>The Riksbank</i> Surveillance, analysis, contingency
Access to cash services (Cash withdrawals, daily takings)	<i>Banks</i> Legal requirement for reasonable access <i>State</i> Surveillance and support measures

Source: SOU 2019:46, Figure 34.1.

The Riksbank Committee proposes that there be depots in at least five places in the country, at least one of which must be in Norrbotten or Västerbotten county and at least one in Jämtland or Västernorrland county. However, the Riksbank does not have to run these depots itself. According to the proposal, fees, opening hours and other conditions for deposits and withdrawals should not be less generous than today.

Cash handling does not just cover depot operations but also cash transport, banknote counting and sorting, banknote sales and so on, making it possible for banks and others to offer cash services to their customers. The Riksbank Committee proposes that the Riksbank monitors and analyses cash handling and reports back on this to the Riksdag Committee on Finance, as well as, when necessary, taking a coordinating role. The Riksbank's coordinating responsibility means overall systemic responsibility for cash handling as a whole in Sweden, including when problems arise in cash handling. For example, one such problem could be that one of the central companies Bankomat AB or Loomis winds down its operations across parts or all of the country. If the problems concern access to basic payment services in a specific area, responsibility instead falls to the Swedish Post and Telecom Authority and county administrative boards.

According to the Riksbank Committee's proposal, under heightened alert, which is to say during war or under threat of war, each and every person will have the right to pay with cash and special contingency money issued by the Riksbank, unless otherwise stipulated by another regulation. This right is unconditional and cannot be restricted. The inquiry says that demand for cash can be expected to increase heavily during wartime, placing special demands on manufacturing capacity and storage. Storage may therefore have to take place on a larger scale and in a less centralised way than normally.

In its [consultation response](#), the Riksbank has agreed it is reasonable for the Riksbank's responsibility for cash handling to be clarified. However, there must be flexibility in how the Riksbank is to fulfil its assignment, otherwise the risk that cash handling is not organised efficiently will arise. It is therefore inappropriate to legislate for how many depots there must be and where these must be situated.

FACT BOX – THE POSITION OF CASH AS LEGAL TENDER

According to the Sveriges Riksbank Act, banknotes and coins are legal tender and consequently must be possible to use to make payments. However, there are far-reaching exceptions from the obligation to accept cash. Firstly, in some cases, it is possible to waive the obligation to accept cash. This applies to both private businesses and such public sector activities as can be likened to private businesses, such as municipal parking places. Secondly, exceptions can be made in law, for example as has been done in tax legislation. The obligation to accept cash is therefore relatively limited and applies only in a few areas, for example within the publicly financed health care system. As people reject the use of cash, it is becoming more and more difficult to pay in cash. However, cash has an important function for preparedness in society.

The Riksbank therefore wishes to strengthen the position of cash as legal tender. By this, the Riksbank means that there should be a greater obligation to accept cash in society. However, the Riksbank Committee has not put forth any such proposal. On the contrary, it proposes that the obligation for certain public sector operations, such as public medical care, to accept cash should be removed. Implementing the Committee's proposals would therefore mean that protection for cash would be weakened in relation to the present situation. This is unfortunate as there are groups in society who live in both financial and digital exclusion. They need both to be able to withdraw cash and to pay with it. It is therefore reasonable to require cash to be accepted by public authorities, municipalities and publicly-owned companies that supply important services to society, for example, as well as private companies selling essential goods and services.

Dialogue on future cash handling

The Riksbank has opened a dialogue with relevant parties in the cash supply chain to discuss the form of future cash distribution and which allocation of roles between the Riksbank and other actors would be appropriate. These discussions have recently been initiated and the ambition is to have a solution in place well before the new Sveriges Riksbank Act is expected to enter into force on 1 January 2023. This solution will also contribute towards creating greater stability in cash distribution so that unexpected external events, such as the coronavirus pandemic, affect the external parts of the cash supply chain to a lesser extent.

The Riksbank Committee expects the Riksbank's increased responsibility for depot operations to lead to more generous terms and lower fees, which could contribute to fees for daily-takings services and petty cash becoming lower for shops and other companies accepting cash payments. However, the Riksbank lacks any possibility of ensuring that this really is the case and neither is it proposed that the Riksbank be given any tools to affect pricing. Nevertheless, the Riksbank will monitor the issue within the framework of the monitoring and analysis assignments that the Riksbank expects to be given under the new Sveriges Riksbank Act.

Even if the banks and the Riksbank are given expanded responsibility for withdrawal services and deposits of daily takings, as well as depot operations, it is likely that increasing numbers of shops, hotels and restaurants will stop accepting cash in future. The Riksbank therefore sees a risk that the position of cash, in practice, may come to be weakened further if it becomes more and more difficult to use it to make payments. The Riksbank has therefore proposed that a binding obligation to accept cash should be applied to some operations at least, such as pharmacies. The Riksbank also considers that the banks should be set a minimum requirement for the provision of manual cash services to the general public.

The banks too will have a broader responsibility

Even some of the larger banks will be given greater responsibilities regarding cash. At present, they are responsible for ensuring that cash withdrawals and deposits of daily takings function. In November 2019, the Riksdag adopted an amendment to the Payment Services Act as a result of proposals put forth in the inquiry Secure access to cash (SOU 2018:42), the so-called fast track to the Riksbank Inquiry. The amendment applies as of 1 January 2021 and means that no more than 0.3 per cent of the population shall have to travel more than 25 km to a place where it is possible to withdraw cash, and that no more than 1.22 per cent shall have to travel more than 25 km to a place for the deposit of daily takings. It is, however, up to the banks concerned to determine how these services are to be provided. For example, there is no requirement for manual cash services over the counter to be provided to a specific extent. The problem of the declining supply of manual cash services will therefore probably also persist in the future (see Are payments in Sweden efficient?).

3.2 Payments in crisis situations and under heightened alert

It will be the Riksbank's responsibility to ensure the general public can make essential payments in crisis situations and under heightened alert, which is to say during war or under threat of war. This is specified in the proposed new Sveriges Riksbank Act.



The Riksbank must maintain essential services

The Riksbank's responsibility for maintaining essential services during crisis situations and under heightened alert is made clear by the proposed new Sveriges Riksbank Act. This responsibility means that the Riksbank must safeguard its capacity, in an acute situation, to take the measures needed to manage any consequences that arise. This means that the Riksbank needs to plan and prepare itself to be able to prevent vulnerabilities and resist threats and risks. Among other measures, the Riksbank must prepare alternative solutions in relation to the systems and procedures that are normally used.

The Riksbank is a part of Sweden's total defence and must thereby adapt its operations according to the demands of total defence. If the Government declares heightened alert, the Riksbank's operations must focus primarily on the tasks that are significant to total defence; other activities must be maintained to the extent this is possible. The Riksbank therefore needs to plan to allow a transition to war organisation in the event of heightened alert.

In addition, the Riksbank must ensure that its staff receive the training and testing needed to allow it to fulfil its duties in crisis situations, as well as under heightened alert.

Payments in peacetime crisis situations and heightened alert

One of the Riksbank's tasks is to [promote a safe and efficient payment system](#). According to the proposed new Sveriges Riksbank Act, the Riksbank shall have a planning and control responsibility in relation to those private enterprises that are particu-

larly important for the functioning of digital payments and cash handling. This proposed new responsibility refers to payments both in crisis situations and under heightened alert.

This responsibility means that the Riksbank will hold what is known as the right to adopt regulations, which is to say the right, through regulations, to place demands on these private enterprises. The private enterprises become obliged to maintain those parts of their operations that are necessary for digital payments and cash handling to function in society. The private enterprises must also participate in the Riksbank's planning for crisis situations and heightened alert, as well as in the Riksbank's risk and vulnerability assessment. In addition to this, the private enterprises must ensure that their staff receive sufficient training and testing.

If disruptions occur in payments that are essential to the general public, the Riksbank must, should the need arise, immediately initiate a function to lead and coordinate operations among the private enterprises.

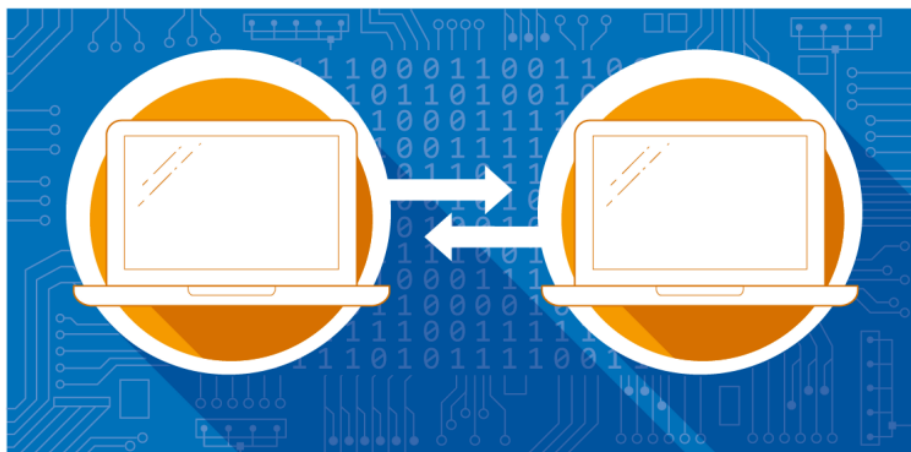
Sector responsibility for the financial sector

At present, the financial sector does not have a designated public authority in charge of leading the financial sector's planning for total defence or for coordinating operations in a critical situation. However, the Civil Defence Inquiry has the task of dividing central government authorities into sectors and proposing sector-specific authorities. The inquiry is to present its proposals on 1 March 2021.

The Riksbank considers that the Civil Defence Inquiry needs to take the proposed new Sveriges Riksbank Act into account. This is important to ensure that there is a functioning and comprehensive structure for the financial sector's work on preparations for future crisis situations, heightened alert and leadership in a critical situation. If the two inquiries present separate proposals without a holistic perspective, the allocation of responsibility within the financial sector will be unclear.

3.3 Swedish payments to be integrated internationally

Electronic payments are based on communication between the parties involved in the payment – the systems must therefore communicate using the same ‘language’. International work is in progress to design notifications in a way that simplifies payments. The Riksbank and ECB are also investigating the possibility of using the TIPS platform for instant cross-currency payments.



New solution for instant payments in kronor

Instant payments are expected to become increasingly common in the future, and are expected to have more areas of use. Perhaps, for example, households may want to be able to pay for a car or redeem a mortgage and see that the payment has been executed directly. Today, almost all payments in Swedish kronor are settled between financial institutions in the Riksbank’s RIX payment system, that is, in central bank money. Settlement in central bank money entails lower risks for the financial system. At present, it is only instant payments that are not settled in the Riksbank’s payment system. These are instead settled on a private technical platform and thus not in central bank money. In the long run, instant payments are expected to become an increasingly important part of the Swedish payment market, which means that some of the payments currently settled in central bank money will be migrated to instant settlement on a private technical platform.

To ensure that settlement between financial institutions continues to take place in central bank money, the Riksbank therefore made an agreement with the ECB in the spring of 2020 to make it possible to pay in Swedish kronor via the ECB’s system for instant payments, the Target Instant Payment Settlement (TIPS) service. Sharing the platform with other central banks allows economies of scale to be attained, entailing lower costs for society than would be the case if the Riksbank were to develop its own system. The Riksbank’s new service, [RIX-INST](#), is expected to be ready in the spring of 2022. The Riksbank is now continuing the work of implementing the new service in close collaboration with banks and other actors on the payment market. RIX-INST will make it possible for the actors on the payment market to continue to provide Swish,

but will also mean that other payment services will have better opportunities to establish themselves. In this way, RIX-INST can contribute towards a broader supply of instant payment services and increased competition. As RIX-INST will be based on a harmonised regulatory framework, it will be easier for new types of payment to be settled instantly.

Cooperation with the ECB for instant cross-currency payments

The increased international interest in cross-border and cross-currency payments has led the ECB and Riksbank to plan to investigate the possibility of using the ECB's TIPS platform to implement instant payments between European currencies such as the Swedish krona and euro. Settlement in TIPS is currently restricted to payments where the party making the payment and the party receiving it have accounts in the same currency. Offering cross-currency settlement services in real time in central bank money under European auspices could make an important contribution to the modernisation of European retail payments. This initiative is being taken against a backdrop of increased European integration and ongoing international work to remedy the lack of fast, efficient and easily available cross-border payments. The work will include a dialogue with the participants on the market.

International work on instant payments

Instant payments are expected to become increasingly common in the future. When information can be sent around the world in seconds, it may be difficult for consumers to understand why it takes up to several days for a payment to be executed. International interest in cross-border and cross-currency payments has increased in 2020. Such payments are often more expensive, slower and more difficult to follow than payments in domestic currency. The [Group of Twenty](#) (G20) has therefore, through the [Financial Stability Board](#) (FSB) and the [Bank for International Settlements](#) (BIS), started to look into the different ways in which international payments could be streamlined. The group delivered two [reports](#) to the G20 in the spring and summer. A [new report](#) with a number of proposals for concrete measures was published in October 2020.

ISO20022 – a new, shared ‘language’ for payments

To make a payment, the participants in it need to be able to communicate with each other in an agreed format that is a sort of shared language. It is therefore said that a payment is communicated through a shared standard. Around the world, central banks, banks and financial infrastructures use the [SWIFT](#) network and its format and standard to execute payments. However, SWIFT's old standard was limited in its design. Over the autumn, SWIFT has communicated an updated strategy and timetable to migrate to a new format designated [ISO20022](#) that supports the current demands for more information. ISO20022 can cope with a huge amount of information but, to create this standard, the payment market must cooperate and agree on which information is to be included so that all parties in the payment chain are speaking the same language. The transition for the payment market will start in November 2022

when the Eurosystem and ECB migrate to ISO20022. Worldwide, the transition is expected to proceed until 2025, which is SWIFT's end date for the old format and the old standard.

For the Riksbank and the institutions that are participants in the Riksbank's RIX system, this means that technology, processes and operations need to be adjusted and developed. ISO20022 will help make it possible for larger amounts of smoothly-running payments to be made over national boundaries, and a working group has been created with the other Nordic central banks to jointly investigate how the new format can be used and how the new standard may be designed. Together with the market, the Riksbank has also initiated work in using ISO20022.

3.4 Digital money – the Riksbank’s e-krona pilot

The Riksbank is investigating whether it would be possible to issue kronor to the general public in digital form, an ‘e-krona’. This would allow the general public access to the Riksbank’s money even if cash were to become further marginalised in the future. The Riksbank has initiated a pilot project to develop a proposed technical solution for kronor in digital form. But no decisions have yet been taken on issuing an e-krona.



E-krona – a digital complement to cash

Technological advances and digitalisation of payments have brought to a head the question of the future role of the state in the payment market. If nothing is done, this development will very likely lead to the general public no longer having access to state-issued money, Riksbank money. This development has also resulted in those groups in society who are unable to use digital services for various reasons finding it increasingly difficult to make payments.

The Riksbank thus needs to consider whether cash needs to be modernised to fit into the digital economy. As part of this, the Riksbank started a [project](#) in the spring of 2017 to examine the scope for the Riksbank to issue a central bank digital currency, known as the [e-krona](#). There is currently no formal decision on issuing an e-krona, how an e-krona might be designed or what technology might be used. The main aim of the project is for the Riksbank to increase its knowledge of what would be required to realise the idea of a central bank-issued digital krona.

An e-krona would give the general public access to a digital complement to cash, where the state would guarantee the value of the money. At present, only the banks and other participants in the Riksbank’s payment system RIX have access to the Riksbank’s digital currency. All other digital money in society is issued by the commercial banks.

By definition, an e-krona would be a digital form of payment and could be designed with the aim of including all groups in society. Easily accessible, simple and user-

friendly versions could be developed for those who currently have difficulty with digital technology. In addition, an e-krona could form its own separate system and thereby strengthen the resilience of the payment system. In the event of serious shocks to the systems of the banks or card companies, an e-krona could be an alternative form of payment. An e-krona would thus fulfil the same task that cash has fulfilled so far – providing a state payment alternative that is available to all and that complements the supply of payment services from the private sector.

In the e-krona project, the Riksbank has held a dialogue with several national and international agents to hear their views on an e-krona, has looked at proposals for suitable technology and has examined the legal issues that need to be dealt with to ensure the Riksbank has a clear mandate to issue a future e-krona.

Continued dialogue with the general public, payment market participants and other central agencies will be important. No formal decisions have been taken to issue or not to issue an e-krona, but by continuing to examine the possibilities, the Riksbank is preparing a possible way forward to meet a new digital payment market. As the so-called E-Money Directive makes clear, the Riksbank should, under certain conditions, also be able to issue e-money without the approval of the Riksdag. However, considering that cash continues to be marginalised, it is also important for an inquiry to be held on a national level. Consequently, in May 2019, the Riksbank submitted a petition to the Riksdag on the need for an inquiry into the state's role on the payment market. The Riksdag agreed with the Riksbank and therefore, in the summer of 2019, called on the Government to appoint an inquiry into this. The Government has informed the Riksdag that it intends to decide on terms of reference for a committee in 2020.

The Riksbank is testing a technical solution for the e-krona

In partnership with the consulting company Accenture, the Riksbank is conducting a pilot project to develop a technical solution for an e-krona that can work as a complement to cash. The aim of the project is to show how an e-krona could be used by the general public. A digital krona must be simple, user-friendly and simultaneously fulfil very high requirements for security and performance. In the test environment, simulated users shall be able to hold e-kronas in a digital wallet and make payments, deposits and withdrawals via a mobile application. The user shall also be able to make payments via cards and so-called wearables, such as smart watches. The pilot project runs until the end of February 2021, with the option to extend and further develop the technical solution.

The pilot project's technical solution is based on Distributed Ledger Technology (DLT), blockchain technology. It is based on a distribution model that is reminiscent of the model used by today's cash. Only the Riksbank can create e-kronas, which are then distributed to the general public via participants in the e-krona network, for example banks and payment service providers. The solution will be evaluated in a test environment that will simulate the Riksbank's internal systems, participants in the network and end users, such as consumers and merchants.

3.5 International cooperation on central bank digital currency

In the wake of the coronavirus pandemic, cash payments have decreased in many countries. This has led to central bank cooperation on central bank digital currency landing high up on the policy agenda.



Several countries have started work on central bank digital currency

At the start of 2020, an international working group was formed on behalf of central bank governors from a group of countries to share lessons learned, create a shared view and discuss the way forward for central bank digital currency available to the general public (CBDC) – what we in Sweden call the e-krona.

Apart from the Riksbank, this collaboration on CBDC also included the European Central Bank (ECB) and the central banks of Canada, Japan, Switzerland, the United Kingdom and the United States. The group also collaborates with the [BIS Innovation Hub](#).

The central banks consider that central bank digital currency, available to all in society, could be an important part of central banks' work in promoting secure and efficient payments and contributing to a smoothly-functioning financial system in an increasingly digitalised world. The central banks are in agreement on three basic principles to guide the development work:

- a central bank digital currency must not weaken the central banks' ability to conduct monetary policy and promote financial stability
- it must complement cash and central bank reserves
- and it must have attributes that promote innovation and efficiency

Among important characteristics that a CBDC should have, the group mentions that it must be robust and also function during natural disasters and disruptions to the elec-

tricity supply and other infrastructure. It must be cheap and simple to use so that everybody can make payments with it. The group also wants the private sector to play an appropriate role that promotes competition and innovation.

However, the decision on when to issue it will be left to each country. Similarly, design and technology are national matters and need to be anchored in the specific conditions of each country. The group also considers that, even if CBDCs should be developed with a national focus, development should consider that CBDCs could also lead to cross-border payments becoming more efficient. Together with the BIS Innovation Hub, the central banks in the group will continue to collaborate in the future by focusing on the technical issues surrounding central bank digital currency.

The coronavirus pandemic is accelerating work

The central banks in the group are agreed that it is urgent to make progress in this work now and that this is due, to an even greater extent than previously, to the crisis that the coronavirus pandemic has triggered. This has led to cash being abandoned, to some extent, in favour of digital payment alternatives, even in countries where cash had previously held a stronger position than in Sweden. As a consequence of this, central banks in these countries have also accelerated the work of modernising their payment systems. In the autumn, the President of the ECB, Christine Lagarde, held a [speech](#) in which, like the Riksbank, she warned of the potential risks of digitalisation and argued that central banks must actively take a stance on this development.



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