The Swedish payment market in transformation

Björn Segendorf and Anna-Lena Wretman*

Björn Segendorf works in the Financial Stability Department and Anna-Lena Wretman works in the Cash and Payment Systems Department

Major structural changes are now taking place in the Swedish payment market. Increasing numbers of payments are being made electronically, sometimes with the use of new technology. At the same time, cash usage is declining and it is also becoming more difficult to deposit or obtain cash. The widespread availability of the Internet, tablets and smart phones is changing households' purchasing patterns and payment requirements. The banks, which long dominated the payment market, are now facing competition from new players. Even if the overall development is positive, some households, associations and companies perceive it as negative.

In this article, we first describe how the Swedish payment market looks today and emphasise a couple of its characteristics that are of central importance for understanding current developments. Following this, we describe the most important parts of the structural transformation and the challenges this entails. We discuss the advantages and disadvantages as well as what can and should be done to mitigate the negative effects on certain groups. We also conduct a discussion of the responsibilities of the market and authorities.

In summary, we can observe that the development of the payment market is positive overall and continued development should not be hindered. However, we also note the existence of problems that must be solved or at least eased. Tools for solving these problems exist but require cooperation between market participants and between market and government. Ultimately, however, it is the government that must act as a safety net for users who would otherwise risk finding themselves outside the payment market.

Cash usage is decreasing in Sweden

In an economy, it is important that payments can be made in a safe and efficient manner. Electronic payments such as direct debit, card payments or payments via Internet bank are generally faster and consume fewer resources than paper-based payments such as cheques, cash and paper-based credit transfers and are thereby usually more efficient. The percentage of payments initiated electronically is very high in Sweden. For example, the

* The opinions expressed in this article are the sole responsibility of the authors and should not be interpreted as reflecting the views of Sveriges Riksbank.

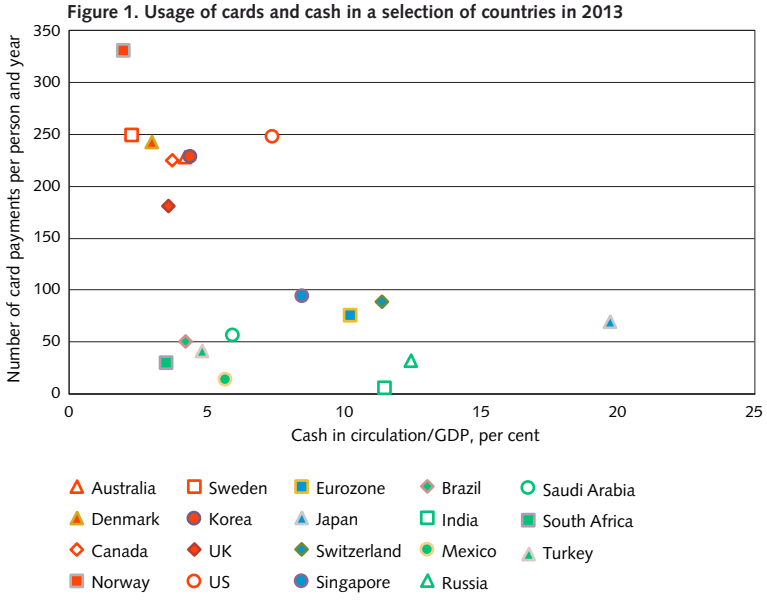
average person in Sweden made 269 card payments in 2014, putting us in a top position worldwide.[1] Sweden thus has one of the most efficient payment markets in the world.

One way of measuring how efficient the payment market is for point-of-sale payments in a country is to investigate how often cards and cash are used for payment at a point of sale. The more frequently cards are used, the more efficient this part of the payment market is considered to be.

Figure 1 shows usage of cards and cash for a selection of countries in 2013. There are no reliable statistics for the number of cash payments. Instead, cash usage is measured by relating the value of cash in circulation to the country's GDP.[2] The further up in the left-hand corner a country is, the more efficient this part of the payment market is considered to be. Correspondingly, this part of the country's payment market is considered to be less effective the further down towards the right-hand corner the country is.

The figure identifies three groups of countries. The red ones are the "card intensive" ones, including Sweden. They are also industrialised. There is also a blue group of industrialised countries characterised by high cash usage and comparatively low card usage. Switzerland and the euro area belong to this group. Finally, there is a green group of emerging market economies with low card usage, including the BRIC countries Brazil, Russia and India.[3]

Figure 1. Usage of cards and cash in a selection of countries in 2013



Sources: CPMI (2014b), ECB Statistical Warehouse and Norges Bank

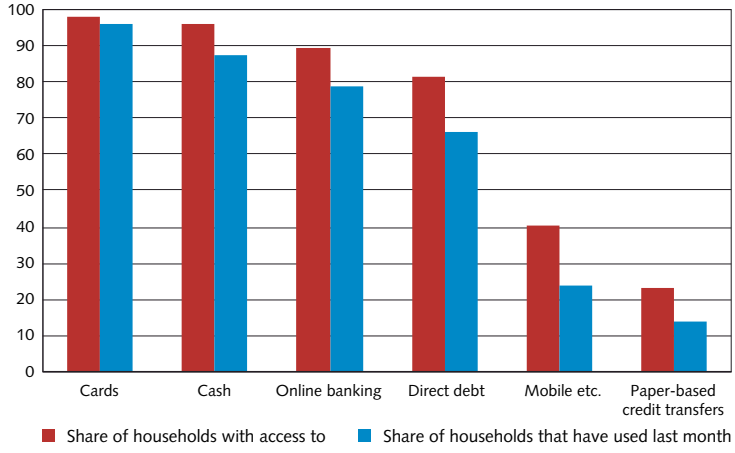
1 The total number of card payments was 2 620 million. See Sveriges Riksbank (2015), Table AB. Statistics Sweden calculates Sweden's population at 9 747 355.

2 Measuring cash in circulation in relation to GDP is a blunt instrument. For the euro area and a number of countries, such as the United States and Switzerland, cash usage is overestimated as some of their cash is held and used beyond their borders.

3 Unfortunately, there are no statistics for China.

In Sweden, cash usage is falling rapidly and, in 2014, about 20 per cent of payments in shops were made in cash – which is a very low figure compared with many other countries.[4] The corresponding figure for 2010 was 39 per cent. Almost 90 per cent of households have access to online banking and make their payments via online or mobile banking services.[5] We also use e-invoices and direct debit. On the other hand, the percentage of payments initiated using various types of paper form (Bankgiro, Plusgiro, cheques and so on) is low. The percentage of households with access to paper-based direct debit is about 23 per cent, while the share of credit transfers initiated on paper amount to 7.3 per cent.[6] The economic costs for payments are therefore low from an international perspective.[7]

Figure 2. Swedish households' access to and use of various payment services 2014
Per cent



Source: The Riksbank

The development of the payment market is proceeding rapidly as new, innovative ways of making payments are launched. These are often based on mobile telephones or require an Internet connection. We can also see increased competition for the banks from new players making an entrance on the payment market thanks to new technology or new processes. Users are quick to adopt new payment services, making cash and paper-based payments decrease rapidly. This structural transformation could give us better, cheaper and more secure payment services in the future but it will also bring challenges for society. Before we discuss the consequences of the structural transformation, it would be helpful to understand the forces driving the structural transformation and why it seems to have progressed so far in Sweden.

4 See Sveriges Riksbank (2013), Chapter 2, for a more detailed comparison between a number of selected countries.
5 Interview survey by Sveriges Riksbank, see http://www.riksbank.se/sv/Statistik/Betalningsvanor/.
6 Sveriges Riksbank (2015), Table AD.
7 Segendorf and Jansson (2012b) and Schmiedel et al. (2012).

What are the characteristics of the payment market?

Payments made by means other than cash are made via services offered by payment service providers, traditionally banks, and consumed by households, companies and the public sector. Examples of such payment services include card payments, credit transfers and direct debits. Suppliers of payment services are commercial enterprises competing with each other on the retail payment market.

A payment service is an information management service in which the information specifies which accounts are to be debited and credited, where these accounts are, the size of the amount, what the payment is for and when it is to be executed. It must also be confirmed that the party initiating the payment has the right to do so, for example via a PIN code for a card purchase, a security authenticator for payments via online banking or eID, and that there is enough money in the sender's account. These accounts are not usually with the same payment intermediary/account operator and so these must exchange information and money.

ECONOMIES OF SCALE, SYNERGIES AND NETWORK EFFECTS

All of this information processing and mediation is conducted using large IT systems/platforms that are expensive to obtain and run but with which the cost of mediating one more payment is very small. This creates *economies of scale* – the more payments that are conducted using the same IT system, the lower the average cost is for managing this information. One way of increasing the volume of payments is to co-locate the processing of different types of payment from several suppliers of payment services (*synergies*).

Network effects are another central concept within payments and, in this case, refer to the benefit of many participants cooperating in a payment system. A payment service is more useful and thereby more valuable for a party making a payment (the payer) if many payment recipients use the same service and vice versa. For example, a card is more useful to a household if it is accepted in many shops and it becomes more valuable to a shopkeeper to accept a card if it is used by many households. For certain types of payment service, the users are both recipient and sender, as is the case with *Swish*.[8] Here, it is the number of connected users that matters. In other cases, the sender and recipient are two clearly separated categories of user, as the card example above illustrates. It is mainly households that use cards to pay and mainly companies and the public sector that receive the payments.

A SWEDISH TRADITION OF COOPERATION

Economies of scale, synergies and network effects give payment intermediaries a strong incentive for cooperation. This cooperation is usually mainly a matter of various standards

8 Swish is a mobile telephone-based payment service for payments between private individuals. In the summer of 2014, it was also opened up to small companies, associations and so on. The service is provided by a number of cooperating banks.

and shared IT systems. Common standards for payment information mean that the various payment intermediaries can exchange payments between their own IT systems. This is called *interoperability*. This cooperation can be taken one step further by collaborating on the large and expensive IT systems that manage payment information. This allows double investments to be avoided and costs to be shared at the same time as economies of scale and synergies can be maximised. Both types of cooperation make it simpler and cheaper for the payment intermediaries' customers – households, companies and the public sector – to send payments to each other, thereby expanding the network.

In Sweden, the banks have a long tradition of cooperation. The creation of Bankgirot, an automated clearinghouse, is a good example of this, as is the cooperation over Swish and the jointly-owned company Bankomat, which has taken over the banks' ATMs.[9] The international card companies Visa and MasterCard are examples of cooperation on a global level within the banking sector. However, even if the banks often cooperate over standards and the payment infrastructure, they compete with each other over selling payment services to users. The banks thus compete with each other as regards fees and conditions of use for cards and card payments, Bankgiro payments, Swish payments and so on.[10]

A CONCENTRATED MARKET AND POSSIBLE LOCK-IN EFFECTS

Economies of scale and network effects tend, however, to create a concentrated market that is dominated by a small number of large players, which is the case with the major banks on the Swedish payment market.[11] Combined with the cooperation between participants, this usually results in there being a small number of large payment services. In Sweden, these are various forms of Bankgiro payments and card payments via Visa and MasterCard.

The cooperating banks have invested heavily in adjusting their internal IT systems and the joint infrastructure to a specific standard. Changing the standard for payment information or the routines for how information is to be processed may entail considerable costs and it could then be least expensive to retain the existing standard. The original choice of software may thus affect future opportunities to choose other software. Similarly, it is expensive to construct a shared infrastructure, so there is reluctance to replace it,

9 Regarding the Bankgiro, the cooperation moved from interoperability to jointly-owned infrastructure. It had been possible to make transfers between current accounts at the commercial banks long before the arrival of Bankgirot in 1959, but the development of office machines and increased costs for handling cheques made it desirable for the commercial banks to create a more easily-administered payment method/routine that could complement cheques and occasionally replace them. This new payment routine was the bank giro system and, in 1950, a joint bank giro form for transfers was developed. It soon became apparent that handling of the forms submitted by the banks' customers should be centralised and, in 1959, Bankgirocentralen was set up. Its main task was sorting bank giro payments and notifying the recipients and their bank accounts. Today, Bankgirot is the central hub through which the majority of payments between different banks pass. For a description of Bankgirot, see Sveriges Riksbank (2013).

10 The Swedish banks' pricing differs for households and companies or the private sector. Households seldom pay transaction charges, which is to say a fee per payment, but this is very common for companies and the public sector. However, both often pay fixed charges such as annual fees. Source: Guibourg and Segendorf (2007).

11 If the economies of scale and synergies are strong enough and full competition prevails, there will only be room for one payment intermediary or infrastructure on the market. The market is then known as a natural monopoly.

even if better hardware has become available. Cooperation over standards and payment infrastructure may thus create lock-in effects making change processes sluggish and today's situation a function of the situation yesterday. Payments between the banks are currently mediated in largely the same way as they were ten years ago.[12]

Households and companies are thus faster to change their way of initiating payments than the banks are to develop new ways of exchanging payment information and money with each other.[13]

SWEDEN IS FAR AHEAD WHEN IT COMES TO USING NEW TECHNOLOGY

New technology often needs to mature and become widely used before it can be used to construct new payment solutions. This is because there would otherwise only be a few potential users, which would prevent network effects and economies of scale from being utilised. For example, a sufficiently large proportion of households must have access to the Internet for it to be worthwhile constructing an Internet bank, and a mobile bank can only be profitable if enough of the bank's customers have smart phones. Exactly how wide the distribution of a technology must be varies from case to case, along with the other business considerations the payment service suppliers must make.

Sweden is a technology-friendly country. The infrastructure for the Internet and telecommunications is extensive and a high proportion of households have access to and use new technology such as home Internet, smart telephones and tablets.[14] The World Economic Forum ranks countries according to how well they are situated with regard to utilising possibilities offered by information and communication technology.[15] In 2015, Sweden was ranked third of 148 countries and has been among the three best countries

12 However, sometimes there are innovations that induce technological shifts. The creation of the mobile payment system M-Pesa in Kenya could provide one such example. See Sveriges Riksbank (2013), page 69. It is also interesting to note that Bitcoin was created partly with the aim of circumventing the banks and the traditional payment system. There is interest, within the financial sector and elsewhere, in attempting to use the same technology as Bitcoin (block chain) for financial services. It is therefore possible that this technology could contribute to reshaping the way in which certain types of payment and securities transaction are made in the future. For a popular science treatment of Bitcoin, see Segendorf (2014).

13 Innovative payment services are often, although not always, a new way of initiating an 'old-fashioned' payment, e.g. linking a card to a payment application in a mobile telephone. The large IT systems for clearing and settlement between the banks form a base platform for an 'ecosystem' of payment services that change over time. In general, this works excellently but occasionally payment requirements arise that cannot be met in this way. The demand for payments to be executed in real time is a clear example. The prevailing system has been constructed to execute payments over a day or the following day. It is difficult to adapt the old IT system for payments to be mediated from account to account in real time, so a new one has to be constructed instead. In Sweden, this system is called BiR (Betalningar i Realtid) and is run by Bankgirot. This is the system that makes the Swish service possible and it may come to serve as the platform for a new ecosystem of payment services.

14 91 per cent of the population over the age of 18 have access to the Internet and computers at home. 76 per cent of those in age groups over 12 use the Internet every day. Source: Findahl (2014), figures 1.3 and 1.7.

15 The ranking is based on an index built up of 53 indicators divided among four components: environment (political/regulatory and business and innovation), readiness (infrastructure and digital content, affordability and skills), usage (individual, business and government), and impacts (economic and social).

since 2006.[16, 17] Naturally, this creates favourable conditions for the development of the payment market.

How does demand for payment services change?

As companies and households gain access to new technology, their demand for payment services is also affected. A household with a computer and Internet access (smart telephone) may demand online banking services (mobile banking services) if this simplifies the management of the household's bills and oversight of the household's economy. Swedish households now use online and mobile banking to an increasing extent instead of paying bills via paper-based credit transfers.

Increased trading via Internet shops (e-commerce) is also giving rise to demand for suitable payment services and auxiliary services.[18] Examples of such services include services in which a third party goes between the customer and the retailer and assists the customer make a payment in a faster and simpler manner. This intermediary can mediate payment information to the customer's online bank, thereby meaning that the customer has to provide less information – this is usually called a *Direct payment* on the Swedish e-commerce companies' websites. It can also manage sensitive information such as card numbers, expiration dates and security codes so that these cannot be seen directly by the retailer. *PayPal* is an example of this type of intermediary. The use of electronic services such as downloads or streaming of music, films, audiobooks and so on may also require the use of specially-adapted payment services. E-commerce increasingly takes place across national borders, meaning that demand for suitable cross-border payment services is increasing.

When paying in a physical shop, households are using cards instead of cash to an increasing extent. The changeover from cash to cards may be speeded up via the recent introduction of contactless smart cards, which is to say cards that only need to be placed near a card terminal by the holder, with no need to enter a PIN code. The increasingly widespread habit of using mobile telephones in many other different contexts has yet to make a clear impact in payment habits, but there seems to be a dawning interest in making payments via mobile telephone.[19]

In much the same way, new technology also gives rise to a demand for new payment services among companies. E-commerce companies are often dependent on it being quick and simple for a customer to make a payment, as the risk of a customer breaking off a

16 For data for 2015, see http://www3.weforum.org/docs/WEF_GITR2015.pdf.

17 In 2014 and 2013, Sweden was ranked 3rd of 148 and 144 countries, respectively (3/144). Corresponding figures for earlier years are 2012: 1/142, 2010–2011: 1/138, 2009-2010: 1/133, 2008-2009: 1/134, 2007-2008: 2/127 and 2006–207: 2/122. Sources: http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf, http://www3.weforum.org/docs/GITR/2013/GITR_OverallRankings_2013.pdf and https://si.se/verksamhetsomraden/sverigebilden-utomlands/internationella-index/the-networked-readiness-index/.

18 Between 2003 and 2014, e-commerce in Sweden grew from SEK 4.4 billion to SEK 42.9 billion. Source: PostNord et al. (2014).

19 Example: 14 per cent of the payments made at Starbucks are implemented using a mobile telephone application. Source: http://www.nyteknik.se/nyheter/it_telekom/mobiltele/article3815524.ece.

purchase increases the more complex the payment process becomes. Payments via mobile telephone in shops may be attractive for retailers if, for example, other information such as additional offers or advertising can be linked to the payment application. No less important is that this makes it easier for companies and/or payment service suppliers to gather and process data concerning their customers and thereby be able to tailor offers and advertising for each individual customer. Such information can also be sold to other companies, thus providing extra income.

In addition to pure payment services, auxiliary services have also arisen, such as those compiling information from online or mobile banking services and thus providing the user with a clearer view of a household's economy.

DEMOGRAPHY ALSO AFFECTS DEMAND

Demand for payment services is affected by demographic factors, with there being two dimensions worth emphasising within the shift towards electronic payment services described above. The first of these is the segregation of demand by age, which is to say the difference in how different generations use payment services seems to be increasing. Older people who are used to using cash and paying via paper-based direct debit continue to use these payment services to a greater extent than younger people.[20] Older people also tend to have less access to the Internet, smart telephones and tablets and, additionally, to use these less.[21] Younger people tend to use cards and online or mobile banking to a greater extent.

The second is geographical segregation. Sweden is a sparsely-populated country. By surface area, Sweden is the third-largest country in the EU but we have the second smallest population per square kilometre. Sweden's population is also concentrated to an increasing degree in the metropolitan regions and, as a rule, the average age is increasing most in the counties with declining populations. This means that it is in the cities that demand for electronic payment services is growing most rapidly, particularly as regards new, innovative payment services. This means that cash and paper-based payment services are demanded to a higher extent in the countryside, although demand for cash is falling in some areas as the population diminishes.

How does the supply of payment services change?[22]

Supply changes in two main ways – through the services supplied and the suppliers. The new technology, consisting primarily of the Internet, tablets and smart telephones, is not just contributing to changing demand but also to the creation of new channels

20 The probability that a person will pay with a card instead of cash decreases with age and increases with income, education and the size of home town. See Segendorf and Jansson (2012a). According to the Riksbank's interview surveys, the same relationship also exists for paper-based credit transfers and online or mobile banking. Younger people and people living in major cities are also more liable to use innovative payment services.

21 Source: Findahl (2014).

22 More information on how the supply of payment services has changed can be found in the reports: Sveriges Riksbank (2013), CPMI (2012) and CPMI (2014).

though which payment intermediaries can provide payment services to their customers. This technology makes it increasingly simple to integrate payment services into purchase situations and a number of payment services aimed at e-commerce in particular have arisen. Card terminals have become portable and increasingly accessible, making it easier to pay by card in different situations. More and more companies are offering their customers the possibility of paying via electronic invoices.

Cash and paper-based payment services are seeing the opposite development, not least as a consequence of changing demand. Declining demand combined with the need to provide these services locally, which is expensive, is leading the banks to look for ways to rationalise their operations. This is primarily noticeable through the banks' reduction of cash services in particular by reducing the number of bank branches and making about half of them cashless so that over-the-counter cash transactions cannot be made. The government previously provided a cash service via Svensk Kassaservice and the rural postal service. This service was discontinued several years ago and replaced by the services offered by banks and payment service providers. In cases in which the market's services are insufficient, the Swedish Post and Telecom Authority (PTS) and county administrative boards have been assigned with ensuring access to basic payment services.[23]

OTHER PARTICIPANTS THAN THE BANKS OFFER PAYMENT SERVICES

The banks have had a dominant position on the payment market for a long time. But rapid technological developments and demand for tailor-made payment services have led to other kinds of company becoming established and starting to offer their services, either in competition or in cooperation with one or more banks. In Sweden, Payex, Klarna, iZettle and Seamless are examples of such companies. In the international arena, PayPal is another example. In other cases, they are companies with other core activities but who provide payment services as a complementary product. This include mobile operators, Internet suppliers and other technology companies. Examples of such companies are FaceBook, Google and Apple.[24]

The Swedish Payment Services Act, which is based on the EU Payment Service Directive, explicitly takes consideration of this development by allowing such activities for companies other than banks. This has taken place by allowing them to apply for registration as *payment institutions* or *institutions for electronic money*. In many rural communities, local shops, petrol stations and so on act as agents for a payment intermediary, in which case it is possible to make certain payments there.

23 Basic payment services means cash withdrawals, the mediation of payments and the handling of daily takings. This assignment means that the government has the possibility of supplying support measures or economic grants to rural communities where the market is not meeting the need for basic payment services. The need for measures is assessed by the county administrative boards. Read more at: http://www.pts.se/betaltjanster.

24 In certain extreme cases, no person or company provides the payment service. This means that there is nobody to be held responsible or regulated. The virtual currency Bitcoin is the best-known example. However, this is used to a very small extent and has not had any impact on the structure of the Swedish payment market. See Segendorf (2014).

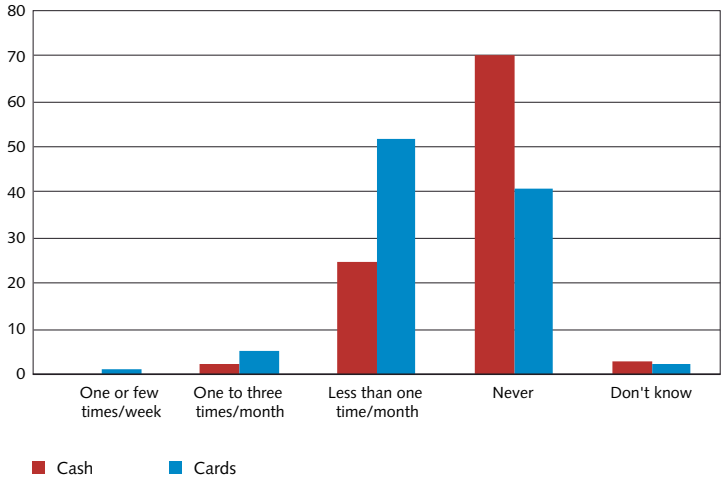
Effects of the structural transformation

In summary, the supply of payment services over the last 10-15 years has shifted towards electronic payment services that are increasingly tailored to and integrated with the purchase situation. These are increasingly provided by companies that are not banks. The diversity of supply has thus increased and has, to a certain extent, fragmented the market. In contrast, the supply of cash services and paper-based payment services has decreased.

This structural transformation is generally positive. New payment services and new operators increase competitiveness and broaden supply, which, in turn, results in simpler, cheaper and, in certain cases, also more secure and user-friendly payment solutions. This increases choice for users and can also lead to higher profitability for associations and smaller companies (for example) in that they have more payment options to offer customers. For instance, there are now new payment services that can, in many situations, replace cash in communities where the customer base or logistical problems make cash payments unprofitable.

It should also be remembered that cash generally works well today. The Riksbank's survey shows that cash seldom fails to work as a means of payment. This can be illustrated by Figure 3 below.

Figure 3. Both cash and cards have high acceptance rates
Per cent



Note. Percentage answering the question: How often have you been unable to pay with cash or card?
Source: The Riksbank's interview survey

Even if the development is positive, it involves challenges and certain households, associations and companies perceive it as negative. The existence of alternatives to cash is of little comfort to those with a strong desire to pay in cash or without access to or ability to use alternative payment services. The development of new services is proceeding very rapidly and a transition to the new payment services entails a cost, either in terms of new

equipment or in terms of devoting time and effort to learning to use the new solutions. Costs may be significant for individuals, associations or companies.

For reasons including the demographic factors discussed above, demand for some (traditional) payment services changes more slowly than supply, both technologically and geographically.[25] This is where the crux of the problem lies: not having access to or an ability or interest in using new electronic payment services is part of a greater digital exclusion and it may thus be difficult to solve this problem by introducing new technology.

THE GREATEST CHALLENGES AND POSSIBLE SOLUTIONS

The payment market is facing challenges of several types. The greatest challenge is, in the long run, achieving a sufficient level of cash service to ensure that it is possible to execute payments in situations where no other appropriate alternative exists. Other challenges are linked to possible solutions to the problems created by the continuing decline of cash services. For example, infrastructural shortcomings must be remedied so that online and mobile payments can function across the entire country. A well-functioning and dynamic market that can continue to develop to ensure the continued future existence of efficient and user-friendly payment services is also needed. Challenges and possible solutions are described below.

Continuing decrease of cash usage is a major challenge

There are no signs at present that the downward trend in cash usage will slacken off. This is due to demographic factors and because incentives for streamlining the way payments are made continue to be high for both companies and households.In certain cases, the cost of accepting cash can be substantial: administrative work, handling of daily takings and cash floats and transportation services. Without cash, the risk of robbery is reduced and it is also sometimes considered that the working environment for personnel is improved. If sales made by an entrepreneur against cash payments become so low that the profits from these sales do not balance out the cost of accepting cash payments, it will probably not be economically rational for the company to continue to accept cash. If a number of companies stop accepting cash, it will be more difficult for households to use cash and they should then react by using less cash and demanding fewer cash services. Banks and others may then, like companies, reduce their costs by reducing the supply of cash services and perhaps also by increasing prices for those companies who wish to continue purchasing cash services. When fewer households pay in cash and the cost of cash increases, more companies will stop accepting cash and the downward spiral will continue.

In the worst case, this negative feedback loop may proceed relatively quickly and be very painful for the companies and households not participating in it. In particular, access to deposit services could be expected to decrease. For the market as a whole, this may not

25 The county administrative boards survey and report access to basic payment services annually. See Länsstyrelserna (2014).

have any major effects as long as the rate of the reduction is manageable. In addition, there are still banks offering cash services in many parts of the country.[26] However, for certain users with poorer opportunities for taking in and using new technology (for example older people and people with some disabilities[27]) and in certain situations, above all when making deposits, reductions in cash services may have serious consequences. The number of geographical areas without cash service, as well, presumably, as other forms of service, will probably also continue to increase.

An efficient, dynamic payment market to solve the problems

Meeting the problems arising when cash usage and cash services decrease will require an efficient and dynamic payment market able to develop long-term, alternative payment services for a reasonable cost. This kind of market is characterised by a fine balance between cooperation and competition. The same applies to regulation, where the challenge lies in setting competition-neutral rules that reduce the risks and uncertainty for the various market participants and users without impeding innovativeness. Transparent and cost-based pricing is also necessary. In addition, a broadly-based infrastructure is a necessity. At present, these areas have shortcomings. Challenges and possible solutions are discussed below.

Balance between cooperation and competition

Above, we pointed out the importance of interoperability, which is to say a special form of cooperation that makes it possible to mediate payments between two participants' technical systems. Shortcomings in interoperability mean that access risks being impaired as fewer payment recipients can then be reached by any given payment service. For example, it becomes less likely that a certain payment service can be used in a specific shop. Payment services become less effective for parties both making and receiving payments as access is needed to a larger number of mutually incompatible payment services, with all the costs and difficulties this entails. In other words, it becomes more difficult for households and companies to find a good alternative to cash.

Cooperation in infrastructure creates possibilities for participants to share costs and also allows them to mediate payments between a larger number of users of linked payment services. This is particularly important when a new payment service requires a new infrastructure. We mentioned above the long tradition of cooperation the Swedish banks have, among other things through the Swedish Bankers' Association, Bankgirot and

26 Swedish Agency for Growth Policy Analysis (2014). The report is only available in Swedish but a summary can be found at http://www.tillvaxtanalys.se/in-english/publications.html.
27 Länsstyrelserna (2014).

Bankomat.[28] However, at present, there is no natural forum for the kind of cooperation between participants that is needed considering the development of the payment market. This means that the market, because of its rapid development and increased diversity, risks becoming fragmented and ineffective giving rise to various related problems.

Another way of cooperating and sharing costs for infrastructure and office networks is by purchasing services from each other. One example is the cash services offered by FOREX Bank to both its own and other banks' customers (for a fee). They also act as agents for certain other banks for deposits and withdrawals. Every bank thus does not need to have a branch in every community. This is a way of maintaining service for a broader circle of customers in a greater number of places for a lower cost.

However, cooperation also has a number of potential disadvantages. Firstly, cooperation may create structures within which a number of participants act to reduce competition on the payment market. For example, they may try to exclude other competitors from participating in their cooperation. Open access to infrastructure on equal terms, combined with effective competition legislation, is necessary to achieve a good balance. Cooperation can also create vulnerabilities by making the market dependent on a single infrastructure or participant (single point of failure). If anything should happen to this, parts of the payment market may be incapacitated.

It is therefore important to have a balance between cooperation and competition that allows high interoperability and continuing innovation. This sets the conditions for efficient and simple payment services. Sweden's tradition of cooperation in payments should therefore be encouraged and broadened to also embrace new services and new participants.

Sufficient regulation without impeding innovation

The potential problems with legislation are partly due to authorities and legislators not having full knowledge of all events on the market or of future developments. Regulations risk being suited to today's situation rather than tomorrow's. The risk of this is particularly great when developments are rapid. For Sweden, as a part of the EU, a further complication can be added to this picture – regulations on the EU level are not particularly suited to the Swedish payment market but are intended to work for the union as a whole. On the other hand, absent or delayed legislation is also problematic as this means that the applicable rules are not clear to market participants.

Consumer protection and integrity form an area in which rapid development could pose problems. There now exist payment and information services in which service providers wish to have access to customers' online or mobile banks and which are based

28 However, in many cases, innovative payment services are only a new way of initiating payments via a pre-existing infrastructure (source: CPMI(2012)). For example, a new mobile payment service, such as Apple Pay, which has yet to be launched in Sweden, may, in practice, be a new way of making a card payment. This reduces the need for investment and benefits from the many customers (cardholders and companies) who can connect to the service with relative ease.

on users supplying their login details. This may give rise to uncertainties over the division of responsibilities between service provider and bank as regards their users. In addition, complicated and unclear chains of participants may make it difficult to determine who is responsible for what and therefore who can be held responsible should something go wrong.

In some areas, the banks' cash services have been replaced by agents, for example retail traders offering payment solutions such as deposits, withdrawals and payment mediation. This involves new and greater demands for competence from the agent, which may increase the risk of deficiencies in handling and in information to customers. These higher demands may also form an obstacle preventing an agent from offering the service.[29]

Legally-secure solutions for people assisting others with their payments, for example home-help personnel, are also absent. In many cases, the user is forced to reveal confidential data to another private individual to obtain assistance. In other cases, the assistant uses his or her own private economy to assist the person or entity who is to pay (associations, school classes, family members).[30]

But poorly-designed regulations can hinder innovation.[31] It is therefore important for authorities to carefully monitor developments so that any regulations contribute towards the development of the payment market rather than impeding it. Regulations should also be aimed at ensuring that solutions are secure and user-friendly.

Transparent pricing

On a market, pricing plays two roles. Firstly, it provides revenue for the producer or seller of a product and covers their costs. Secondly, prices provide information on costs to potential purchasers. Correctly set prices lead to an economically efficient allocation of resources in the economy.

One problem on the Swedish payment market is that households seldom pay transaction charges. For cards and online banking, for example, the banks instead charge a periodical fee and cover other costs via charges from retailers and other banks. Many consumers are of the opinion that payments should be free, which makes it difficult for the retail trade and banks and other payment service providers to apply transaction charges.[32] The resultant problem is that consumers are unaware of the various costs linked to payments,

29 In many cases, the government must balance various targets against each other. The government's justifiable target of countering money laundering and the funding of terrorism stands, to a certain degree, in contrast to its willingness to improve the supply of cash services, primarily as regards deposits. At present, a consumer can often withdraw cash in a shop (cash back) with the use of his or her card. On the other hand, it is difficult to create a corresponding service for deposits, as the shop must then follow the regulations on money laundering and have a strong knowledge of its customers.

30 Länsstyrelserna (2014).

31 One example is the European Commission's E-Money Directive 2000/46/EC), in which the definition of e-money was not technology-neutral and which could thereby have hindered innovation. The Directive was revised in 2009. See CPMI (2012), page 37.

32 There arises what is known as a prisoner's dilemma – a situation in which nobody wants to be first to introduce transaction charges, even though it would benefit all parties. It is also worth noting that the new Interchange Fee Regulation forbids retailers from charging their customers fees for certain types of card payment.

which means that they do not always chose the most cost effective means of payment, from society's point of view.[33] The total costs then become higher than necessary. It can also become more difficult for the payment intermediary to cover its costs, which reduces its incentive to invest in infrastructure and new payment services. This also deprives households of an important means of influencing banks and other payment service providers.

The lack of transaction and withdrawal charges is a special challenge for cash services, particularly in smaller communities. The supplier's cost for cash services is currently perceived as high in relation to the revenues associated services can generate. The banks may then choose to reduce their costs by rationing the supply of cash services. Removing cash from some bank branches is one way of doing this.

A clear price for cash services for households would have two advantages. Firstly, it would give banks and others several strong incentives to provide these services and, secondly, households would have a stronger incentive to go over to alternative payment services when acceptable alternatives exist.

Comprehensive infrastructure

Although the infrastructure for broadband is extensive in Sweden, there are still areas in which the infrastructure is lacking. However, the greatest challenge is formed by shortcomings in capacity in both the fixed and mobile networks. This may be the case in certain geographical areas where capacity is generally lower, but also on certain occasions when more capacity than usual is demanded, for example in certain areas during the tourist season or at certain events that attract many people.[34]

Deficiencies in infrastructure determine which services users have access to and can use. For example, the use of mobile payments is limited in areas in which the capacity of the mobile network is lower than in the country as a whole. There are also areas in which online payments are difficult to make because broadband connections are poor or entirely absent.

Another limitation is formed by users' access to technological equipment. Although many people have access to new technology such as tablets and smart telephones, far from everybody has this and is willing and able to use it. Also increasing heterogeneity contributes to an increased fragmentation of the payment market, which is to say that several types of payment service are needed.

A comprehensive infrastructure is thus necessary to provide everybody with the same opportunity to choose between a greater number of more efficient payment services.

33 Source: Guibourg and Segendorf (2006). One exception is formed by payments made over the counter at a bank or payment services agent. Charges have also started to be applied to services related to coins.

34 Swedish Post and Telecom Authority (2014). Internal surveys by the Riksbank give the same picture.

Who should take responsibility for mitigating these problems?

The development of the payment market is driven by powerful forces on both the demand side and the supply side. Households and companies demand payment services that are adapted to the new forms of purchasing behaviour arising apace with technological developments. Payment intermediaries are striving to provide such services, to rationalise their operations with the use of new technology and to reduce services with low or negative profitability. Overall, this is a beneficial development and should not be impeded but, for some households, companies and associations, the speed of the development is problematic. Responsibility for rectifying shortcomings and mitigating problems is divided between various actors.

BALANCE OF RESPONSIBILITIES BETWEEN GOVERNMENT AND MARKET

In general, it should be the market itself that takes responsibility for managing the challenges arising. The work of the authorities should be focused on making it easier for market participants to provide and demand payment services under competition-neutral forms and with strong consumer protection.[35]

In some communities, demand for certain payment services will be so low that it will not be profitable for the market to provide these services. The authorities should then refrain from forcing payment intermediaries to provide these services via legislation as this could have unexpected consequences. For example, forcing a bank to provide a specific range of payment services at all its branches could lead to the risk of the bank concluding it would be better to close its branches in certain communities rather than to keep the branches but without one or more payment services. Legislating that shops must always accept cash will also lead to increased costs for those shops that would otherwise not have accepted cash. Shops with low profitability could then be forced to close, probably giving rise to even greater problems.

It therefore seems reasonable for the government to ensure a supply of basic payment services in some communities via support or procurements.[36] This task presently lies with the Swedish Post and Telecom Authority and the county administrative boards who are to evaluate and, if necessary, also find ways to provide basic payment services.

However, there is an impending risk that market participants will also withdraw from areas where it should be possible to find a way of providing these services in an economically-justifiable way. This is not a desirable development. Instead, it is necessary for banks and payment service providers to do their utmost to take responsibility for the services they provide today and that their customers demand. This will probably require increased cooperation between market participants.

35 The discussion below takes place on a more general level. For a review of the roles of various authorities on the payment market, see Sveriges Riksbank (2013).

36 Basic payment services means cash withdrawals, the mediation of payments and the handling of daily takings. The task of ensuring equal access to this for a reasonable cost has been given to the Swedish Post and Telecom Authority and the county administrative boards.

COOPERATION

In a number of communities, the costs of providing services must be cut if it is to be economically justifiable to keep them. Payment service providers should cooperate in these cases. A number of ways are imaginable, in concrete terms. Firstly, the market participants could purchase services from each other, as in the example with FOREX, and thus share the costs. Secondly, infrastructure such as service boxes could be shared, for example under the framework of Bankomat. Thirdly, a procurement of payment services in shops, for example via Bankomat, could be made, in which all participating banks' customers would have access to the same service. But this would require a business model in which banks and payment service providers take responsibility for complying with regulations on money laundering, for example. Norway has such a model, where one large bank has opened in-store banks in shops and post offices. Here, it is the bank that takes responsibility for the shop or post office knowing about and complying with the regulations on money laundering. There is nothing to suggest that this could not be done in a cooperative manner in Sweden.

THE PAYMENT ACCOUNTS DIRECTIVE – A CATALYST?

The ongoing work of implementing the EU directive on payment accounts[37] could provide one possible way forward for finding a balance between various participants' responsibilities. The directive is aimed at providing consumers with the far-reaching right to open a payment account with a credit institution. A certain range of basic payment services must be attached to this account, such as deposits and withdrawals of cash. An inquiry is presently underway in the Government Offices into how the directive is to be implemented in Sweden.

Even if we, at present, do not know exactly how the legislation will be formulated in Sweden, one way or another the directive will probably come to affect credit institutions. In addition, the inquiry's instructions[38] say that special attention is to be paid to legislative measures to facilitate deposits and withdrawals. This provides an excellent opportunity for the inquiry and, ultimately, the Government and Riksdag to consider how responsibility between different participants should be divided. The directive could, therefore, be an external event creating conditions for discussions on more cooperation in the payment market.

The Government could also consider taking the opportunity to harmonise the definition of basic payment services in the Swedish Post and Telecom Authority and county administrative boards' assignment with the definition in the Payment Services Directive.

37 Directive 2014/92/EU of the European Parliament and of the Council of 23 July 2014 on the comparability of fees related to payment accounts, payment account switching and access to payment accounts with basic features.
38 Dir 2015:39.

INFRASTRUCTURE FOR FIXED AND MOBILE INTERNET

In its broadband strategy, the Government has determined that at least 90 per cent of all households and companies should have access to at least 100 Mbit/s broadband by 2020. The starting point is that the market should pay for the expansion of electronic communication services and broadband but can also apply for government funding for the expansion in certain areas. The Government has also pointed out a number of action areas to meet the targets, for example functioning competition and nationwide broadband. The evaluation of the broadband strategy for 2014 reveals a number of further areas for improvement.[39]

The Government's initiative is welcome but it is important that this work is speeded up to give users across the entire country the opportunity to choose non-cash payment services. The risk inherent in a market-driven expansion is that the communities that most need access to broadband will be the last to be connected. Consequently, the Government should oversee the expansion in sparsely-populated areas particularly carefully and consider taking measures when necessary. For example, it should be considered whether increased public efforts are required to complement the expansion being conducted by the market. Regional and local public actors such as the county administrative boards are playing an active part here in the identification and prioritisation of geographical areas needing extra measures as well as ensuring that the right measures are adopted.

TRANSACTION CHARGES ARE NEEDED

The introduction of transaction charges based on the cost of providing each payment service is an important condition for an efficient market. Not least, this will provide households themselves with an opportunity to influence their own costs and the supply of payment services. For example, if households demand cash services and are prepared to pay for them, it is more likely that a functioning business model can be identified for the provision of cash services. One important reason for cash services becoming less common is precisely that, in many cases, they are unprofitable for the banks. It also seems both likely and necessary that transaction charges would encourage the payment intermediaries to make greater efforts to facilitate the transition from cash services to electronic payments, for example by more actively informing and educating those who initially need help.

However, transaction charges are problematic. Households are not used to them and, for individual payment service providers, the introduction of these may be linked with high expenses in the customer dissatisfaction. In addition, payment service providers neither can nor should sit down together to discuss pricing. On the other hand, it is difficult to see how a market in which users do not pay for the services they demand can be efficient and meet their long-term needs for payment services. One possible way forward could be to have individual participants introduce charges for the services for which it is obvious that there are costs, for example ATM withdrawals. These charges could then be balanced by a lower

39 Government Offices of Sweden (2014).

annual fee or higher interest on transaction accounts, aimed at compensating households. It is also extremely important that households accept transaction charges and make use of them to influence banks and other payment service providers by making it possible for the banks to provide the services households wish to use.

THE RIKSBANK

The Riksbank has no direct tools to affect the supply of payment services. However, the Riksbank can indirectly affect different participants' costs for cash. Lighter and smaller banknotes and coins in suitable denominations make the physical handling of cash easier and cheaper. This is also one of the points of the banknote and coin changeover that has now been started.[40] The regulatory framework for collection and deposit of cash at the Riksbank also affect the costs for the participants. About ten years ago, the Riksbank introduced what is known as interest compensation to make the collection and deposit of cash at the Riksbank possible via Bankernas Depå AB's depots without any need to physically transport it to the Riksbank's own depot. This reduces the need for transportation and creates the conditions for the market to optimise its cash stocks both geographically and in terms of time.

The Riksbank can also act as a catalyst and provide various discussion forums in which payment intermediaries, infrastructure suppliers, authorities and users of payment services can meet. One example is the retail payments council that the Riksbank initiated in the autumn of 2014.[41] There is also the older Cash Handling Advisory Board, at which market participants meet and discuss issues affecting cash provision.

The Riksbank also carries out special studies and analyses with the aim of contributing towards increasing knowledge of the payment market. For example, regular studies are made of the Swedish people's payment habits and, in 2013, a study was made of the Swedish retail payment market. The annual report the Swedish Financial Market also includes payment statistics and descriptions of the payment market.

Concluding remarks

The restructuring of the payment market is positive on the whole and should not be impeded. The problems faced by certain individuals, companies, associations and so on cannot be completely eliminated. However, increased cooperation on payment services in sparsely-populated areas and an expanded infrastructure for both fixed and mobile Internet could contribute towards mitigating them as far as is possible.

We consider that many of the tools needed to mitigate these problems already exist. The Swedish market has long experience of cooperation but it is now necessary that the next step be taken and cooperation be entered into over service boxes and giro payment

40 Starting on 1 October 2015, the Riksbank is changing all banknotes and coins (except the ten-krona coin). Read more at http://www.riksbank.se/sv/Sedlar--mynt/.

41 http://www.riksbank.se/sv/Finansiell-stabilitet/Betalningar/Betalningsradet/.

and recirculation machines to increase local access to these services. The banking sector in particular has already created joint-owned structures that can be used. The implementation of the payment accounts directive may serve as a catalyst for further cooperation.

Households and companies know a lot about technology and, similarly, there is great knowledge and innovation capacity among new participants on the payment market who, via new specialised payment services, are able to meet part of the payment requirements brought about by the structural transformation. One important precondition for this to work is a well-developed fixed and mobile Internet network – and both the market and the government have responsibility for this.

However, the market will not be able to solve all problems everywhere. The government will therefore continue to play an important role as regards ensuring access to basic payment services in certain communities.

References

CPMI (2012), *Innovations in retail payments*, Bank for International Settlements.

CPMI (2014a), *Non-banks in retail payments*, Bank for International Settlements.

CPMI (2014b), *Statistics on payment, clearing and settlement systems in the CPMI countries – Figures for 2013*, Bank for International Settlements.

Findahl, Olle (2014), "Swedes and the Internet 2014", .SE (Internet Infrastructure Foundation).

Government Offices of Sweden (2014), "*Bredband för Sverige in i framtiden*" (Broadband for Sweden in the future), SOU 2014:21.

Guibourg, Gabriela and Björn Segendorf (2007), "A note on the price- and cost structure of retail payment services in the Swedish banking sector 2002", *Journal of Banking and Finance*, Volume 31.

Länsstyrelserna (County Administrative Boards) (2014), "Bevakning av grundläggande betaltjänster", (Monitoring of basic payment services), Länsstyrelsernas annual review 2014.

PostNord, Svensk Digital Handel and HUI Research (2015), e-barometern 2014, annual review.

Schmiedel, Heiko, Gergana Kostova and Wiebe Ruttenberg (2012), "The social and private costs of retail payment instruments. A European perspective", Occasional Paper Series No. 137, European Central Bank.

Segendorf, Björn and Thomas Jansson (2012a), "The cost of consumer payments in Sweden", Sveriges Riksbank Working Paper Series, No. 262.

Segendorf, Björn and Thomas Jansson (2012b), "Cards or cash. How should we pay?", *Economic Review* 2012:3, Sveriges Riksbank, pp. 88-103.

Segendorf, Björn (2014), "What is Bitcoin?" *Sveriges Riksbank Economic Review* 2014:2, Sveriges Riksbank, pp. 71-87.

Sveriges Riksbank (2013), "The Swedish retail payment market", *Riksbank Studies*, Sveriges Riksbank.

Sveriges Riksbank (2015), *The Swedish Financial Market*, Sveriges Riksbank.

Swedish Agency for Growth Policy Analysis (2014), "Access to basic payment services", interim report 5.

Swedish Post and Telecom Authority (2014), "Grundläggande betaltjänster i förändring. Hur påverkas de statliga insatserna?" (Basic payment services in transition. How does this affect central government initiatives?), Report no. PTS-ER-2014:10.