Cross-border payments in the spotlight

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Cross-border payments are important for many of us, but they can be slow, costly and complicated. The good news is that they have improved and are receiving increased attention from both the private and the public sector. This article gives an overview of the alternatives for making cross-border payments, their costs and regulation, as well as the ongoing initiatives to enhance these payments. We also take a look at the underlying processing mechanics of cross-border payments.

1 Cross-border payments are important – and improving

Cross-border payments are important for many of us. We pay cross-border when we travel, when we buy things from abroad over the internet, when we send money to relatives and friends in other countries, and in many other situations. Businesses and public sector entities also pay cross-border, for instance when they buy equipment, services and parts from abroad. Efficient cross-border payments ease trade, which is essential for growth and prosperity, while money sent abroad often constitutes a major share of families' income in receiving countries.

However, paying cross-border can be both expensive and complicated. For instance, a payer will often experience a currency cost of around two per cent of the purchasing price when paying with a Swedish payment card outside Sweden. Further, making a transfer from your Swedish bank account to a bank account outside Europe is usually cumbersome, takes time and can be expensive.

The good news is that cross-border payments appear to be improving. Fees and time lags have decreased, thanks a great deal to new market players and EU regulation. At the same time, new initiatives by standard setters, infrastructure providers and public authorities can open up for more competition and further improvements in cross border payments.

A key international initiative is the so-called G20 roadmap for enhancing cross border payments. The roadmap aims at reducing cost and increasing speed of cross-border payments worldwide as well as improving transparency and accessibility. We explain the G20 roadmap in section 4.

For someone new to this area it can be quite laborious to gain an overview of the alternatives to cross-border payments, how they work, what they cost, how they are

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regulated and what is going on in this area more generally. The aim of this article is to give an easy-to-read introduction to the subject of cross-border payments.

The article is organized into three main sections**.** In the first (section 2), we consider cross-border payments from the user perspective, i.e. from the perspective of an individual or a business. In the second (section 3), we look under the bonnet and explain how cross-border payments are processed. And finally (section 4), we describe ongoing initiatives to improve cross-border payments.

2 Cross-border payments from the user perspective

In this section, we look at the alternatives that end-users have when they make or receive cross-border payments. We distinguish between four alternatives: (i) card payments, (ii) bank transfers, (iii) cross-border payments using other kinds of payment service providers than banks, and (iv) other forms of cross-border payments.

In general, the end-user's choice of alternative in a specific situation is down to availability, convenience, costs, speed and security. Habits and knowledge may also play a role. End-users often have less information about the alternatives to cross-border payments than they do when it comes to domestic payments.

2.1 Card payments

Card payments are common when people travel and when individuals purchase goods and services from abroad over the internet.

Payment cards can be used in other countries when if they belong to an internationally recognized card scheme. Basically all cards issued in Sweden are Visa or Mastercard and can therefore be used abroad. Furthermore, most retailers in Sweden accept Visa and Mastercard and some accept other international card schemes like American Express, Diners and China Union Pay.

Digital wallet solutions like Apple Pay, Samsung Pay and Google Pay can also be used internationally. These digital wallets are payment applications on mobile phones where individuals register their payment cards. For retailers it makes no difference if a customer pays by tapping a payment card or a mobile phone, as both are in fact card payments. Furthermore, the legislation for card payments described below also applies to digital wallets.

Card payments are the most common way of making cross-border payments. Based on information from market participants, we estimate Swedes' card payments abroad at around 300 million per year. The total value of these payments could be close to 100 billion Swedish krona. Likewise, we estimate foreigners' card payments in Sweden at approximately 150 million per year – or about 4 per cent of all card payments in Sweden.

The terms governing the use of payment cards, including abroad, are described in standardized card holder agreements. They mainly reflect provisions in the EU's

Payment Service Directive (PSD), implemented in Sweden in the Payment Services Act.[20] The directive regulates aspects such as the required information to card holders before and after a transaction and liability in case of fraud.

Together with other EU legislation, the PSD also regulates practices regarding fees for card payments and currency conversion costs. The rules on such fees and costs differ between card payments where both the card holder and the retailer are located in the EU and card payments where only one of them is in the EU. Below, we explain the relevant legislation in more detail.

2.1.1 Fees

Both the retailer and the card holder may face transaction fees.

Retailers normally pay a fee to their payment service provider, the so-called *card acquirer*. Basically, the card acquirer ensures that the retailer receives the money from the card payment. Examples of card acquirers active in Sweden are Bambora, Nets and Payex. Typically, the fee paid by the retailer to the card acquirer is calculated as a percentage of the purchasing price.

Card holders are usually not charged a transaction fee by their payment service provider, the so-called *card issuer*, often a bank. But, if the legislation allows, the retailer may decide to levy a fee on the card holder. This practice, where the retailer passes the fee paid to the card acquirer onto the card holder, is called *surcharging*.

Fees for card payments are often claimed to be excessively high due to competition problems.[21] This goes for both domestic and cross-border card payments. In Europe, EU legislation has reduced the fees paid by retailers to card acquirers, see Box 1. The legislation also forbids retailers from surcharging.

The legislation covers only card payments where both the card holder and the retailer are located in the EU. If a card holder comes from e.g. the US, retailers may be charged a higher fee by their card acquirer. Further, if card holders from Sweden uses their payment card outside of EU, they may be asked by the retailer to pay a fee. Unfortunately, we have not found any data on surcharging outside of EU.

[20] Directive (EU) 2015/2366 on payment services in the internal market, often referred to as 'PSD2'.

[21] See e.g. Testimony of Ed Mierzwinski and If Europe can rein in credit card fees, why not us?

Box 1 – Regulation of fees for card payments

Most card payments are made with so-called four-party schemes, see Figure 1 below. The parties in such a scheme are the card holder, the retailer, the card issuer and the card acquirer. An additional party is the scheme owner, for instance Visa or Mastercard. The scheme owner sets the rules of the scheme and licenses the card issuers and the card acquirers. Typically, the scheme owner also operates a network that processes payments within the scheme.

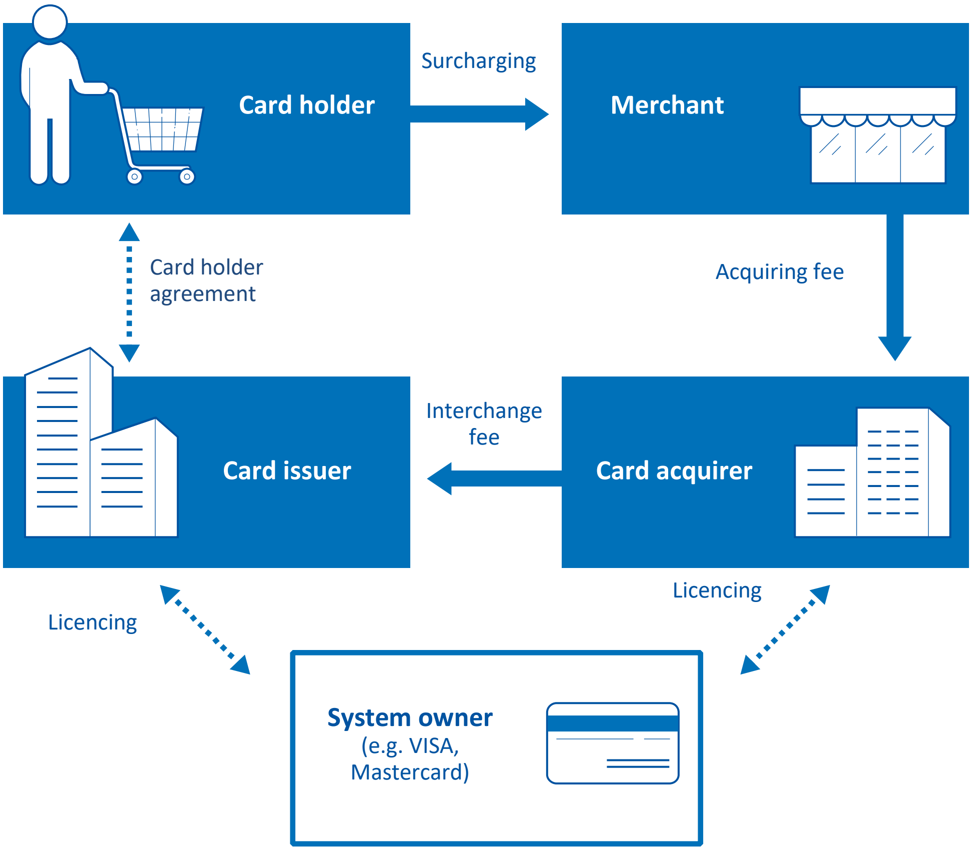
Fees in four-party schemes play an important role in balancing costs and incentives. As described in the main text, normally only the card acquirer charges a transaction fee, not the card issuer. To ensure that both are compensated, part of the fee paid to the card acquirer is usually transferred to the card issuer as an interchange fee.

Interchange fees have been subject to legal inquires in many jurisdictions, including the EU. This reflects the fact that such a fee, especially if determined by card issuers and card acquirers together, i.e. multilaterally, may effectively constitute a lower limit for the acquiring fee. In practice, no card acquirer will offer their service at a fee below the interchange fee as this would entail a loss. In that sense, the interchange fee becomes de facto a collectively agreed minimum price for card acquiring.

In 2015, the competition problems of interchange fees in the EU were addressed by a regulation. The Interchange Fee Regulation, IFR, introduced a cap on those fees of 0.2 per cent of the payment value for debit cards (in Swedish *bankkort)* and 0.3 per cent of the payment value for credit cards. The cap applies to payments where both the card issuer and the card acquirer are located in the EU. It only applies to cards issued to private persons, not to commercial cards, that is, cards used for business expenses.

Complementing the Interchange Fee Regulation, the revised Payment Service Directive, PSD2, also approved in 2015, introduced a ban on surcharging payment cards covered by the IFR. As regards payment cards not within the scope of the IFR, e.g. commercial cards and payment cards issued outside of the EU, it is up to national legislation to regulate surcharging. In Sweden, surcharging is prohibited on all payment cards.

Figure 1. Card payment schemes: participants and fees



Note: Figure shows who participates in a card scheme and who possibly pays fees and to whom: The participants are cardholders, merchants, card issuers, card acquirers and system owners who can be, for example, Visa or Mastercard. The cardholder may pay a fee to the merchant. The merchant pays a fee to the card acquirer. The card acquirer pays a fee to the card issuer.

2.1.2 Currency conversion costs

The *currency conversion cost* is levied on the card holder. The cost results from the difference between the exchange rate applied by the card issuer (or, in certain situations, the card acquirer, see below) and the market exchange rate. Normally, the cost is expressed in terms of a percentage mark-up on a reference exchange rate reflecting the market rate.

For the currency conversion costs, we need to distinguish between two options. Either the card holder pays in local currency, that is, the currency of the retailer. Alternatively, the card holder pays in their own currency.

Normally, the card holder is asked to pay in the currency of the retailer, e.g. in euro at a retailer in the euro area. In this case, currency conversion is done by the card issuer. In practice, what happens is that the card issuer withdraws Swedish krona from the card holder's account and delivers foreign currency, e.g. euro, to the card acquirer as part of the process of settling the transaction.

The PSD imposes information requirements on the card issuer regarding the currency conversion. In the card holder agreement, the card issuer should explain how the exchange rate on foreign currency payments is determined. In addition, following the payment, the card issuer should inform, 'without undue delay', the card holder about the exchange rate used.

The exchange rate mark-up often differs between card issuers and types of payment cards and may also depend on the currency. According to Konsumenternas.se, the exchange rate mark-up among larger Swedish card issuers typically lies between 1.5 and 2.0 per cent.

Card holders may also be offered the option to pay for a purchase abroad in their own currency, i.e. Swedish krona for card holders from Sweden. This is known as *dynamic currency conversion* (DCC). With DCC, card holders know already at the point of purchase the amount in krona that will be withdrawn their account.

Also with DCC, the retailer is ultimately paid in local currency, e.g. euro. The currency conversion, however, is done by the card acquirer, who receives Swedish krona from the card issuer and pays the retailer an amount in euro. The latter may differ from the price in euro, depending on how the currency conversion income is shared between the acquirer and the retailer.

At the time of payment, it can difficult for a card holder to assess a DDC offer to pay in Swedish krona relative to paying in local currency. This will depend on the currency conversion costs of each alternative and requires calculations 'on the spot'.

To facilitate comparisons, recent EU legislation has introduced new transparency obligations for both card issuers and providers of DCC.[22] Both are required to express the exchange rate applied as a mark-up above the latest available reference exchange rate from the ECB. In addition, for payments in EU currencies, card issuers should regularly remind card holders about the size of the mark-up, e.g. by text message.

2.1.3 Total costs for card payments

To summarize, cross-border card payments entail costs for both card holders and retailers, see Table 1. Swedish card holders incur currency conversions costs when they use their payment card abroad and perhaps also transactions fees if surcharging is applied. Swedish retailers pay acquiring fees, which may be higher when the card holder making the payment is from a country outside of the EU.

Table 1 also includes indications of the fees and currency conversions costs that Swedish end-users are charged. Uncertainty prevails, especially regarding transaction fees for non-EU card payments. The table suggests, however, that card payments within the EU may on average be significantly cheaper than other cross-border card payments, due mainly to the EU legislation described above.

[22] Regulation (EU) 2019/518 amending Regulation (EC) 924/2009 as regards certain charges on cross-border payments in the Union and currency conversion charges.

Table 1. Costs of cross-border card payments for Swedish card holders and retailers

	Card holders	Retailers
Transaction fees	0 per cent in the EU, but could be around 2 per cent outside of the EU	0.35 per cent up to around 2 per cent when card holder is from outside the EU
Currency conversion costs	Typically around 1.5–2.0 per cent	Normally 0 per cent
Total costs	From 1.5 per cent in the EU to 4 per cent outside of the EU	From 0.35 per cent in the EU to around 2 per cent outside of the EU

Note: The cost indications are based on the authors' own calculations and assessments. The estimated upper limit for the transaction fees of 2 per cent should be seen in light of information about post-Brexit increases in interchange fees (see Box 1) for card payments involving UK card holders and retailers up to 1.5 per cent.

2.2 Bank transfers

Cross-border bank transfers are common for purchases of larger items like cars, boats and properties. They are also used for payments of taxes, for gifts and when sending money to friends and relatives abroad. In addition, bank transfers are the usual way businesses pay foreign suppliers. Cross-border bank transfers can be initiated from a bank branch or the payer's computer or mobile banking application.

Based on information from banks in Sweden, we estimate the total number of outgoing cross-border transfers at around 30-35 million per year. The total value of cross-border bank transfers, however, greatly exceeds the value of cross-border card payments, due mainly to large-value payments between businesses. We estimate the number of incoming cross-border bank transfers at around 25-30 million per year.

A payer initiating a cross-border bank transfer must provide information about the payment (amount, currency, debiting date, etc.) and the payee. Besides name and address, required details on the payee comprise the latter's bank, expressed by the Bank Identifier Code, BIC, and bank account. Within the EU, the bank account should be stated as the International Bank Account Number, IBAN.

Rules governing cross-border bank transfers are described in the general terms and conditions for bank account holders. As for card payments, they are covered by provisions in the PSD. Certain requirements in the PSD only apply to transfers within the EU. For instance, within the EU, a bank transfer in an EU currency must not take longer than one banking day (or two banking days if the transfer is initiated in paper form).

Furthermore, as for card payments, rules on fees and currency conversion costs differ for banks transfers within and outside the EU. We explain this in further detail below.

2.2.1 Fees

Fees for cross-border bank transfers in Europe are regulated by EU legislation, see Box 2. The legislation forbids banks from charging a higher fee for a cross-border transfer in euro than for a corresponding domestic transfer in the currency of the bank's home country. Hence, banks in Sweden are not allowed to charge a higher fee for a cross-border transfer in euro than for a similar domestic transfer in Swedish krona.

In assessing whether the above requirement is fulfilled, 'corresponding' is the key word. For instance, two payments are only similar if they are initiated the same way. Thus, if an order for a cross-border payment in euro is provided from a branch, the bank may charge a higher fee than for a domestic transfer in Swedish krona initiated via the payer's internet banking solution, which is often free for the payer.

In Sweden, it was decided that the EU legislation on cross-border payments in euro should also apply to payments in Swedish krona. Accordingly, banks in Sweden are not allowed to charge a higher fee for a cross-border transfer in Swedish krona than for a corresponding domestic transfer. As the volume of cross-border transfers in Swedish krona is limited, in practice, the consequences have been minor.

In contrast, for cross-border bank transfers outside the EU, fees are not regulated. For such a transfer, the banks will typically charge a fixed fee that is independent of the amount sent, and a currency conversion cost. According to the fees listed on Moneyfromsweden.se and Konsumenternas.se, the fixed fees are at least 50 kronor per payment. Below, we look at the currency conversion cost.

2.2.2 Currency conversion costs

As for card payments, cross-border bank transfers typically entail a currency conversion cost for the payer. The cost, that is, the difference between the exchange rate applied by the bank and the market exchange rate, depends on the currency and may vary with market conditions. The currency conversion cost may also be higher, if the bank charges a low transaction fee, and vice versa.

Observations from Moneyfromsweden.se suggest that the conversion cost varies quite a lot. In some cases it is close to zero but in most cases it is approximately 1 per cent. However, the total cost of sending money as bank transfers can also be very high. We found several instances on Moneyfromsweden.se where the cost of sending 1,000 Swedish krona could be as high as 400 Swedish krona.

The currency conversion costs of bank transfers are also subject to certain transparency requirements. They follow from the same EU regulation as for card payments. For instance, prior to a transfer, banks should inform the payer about the estimated amount to be withdrawn from their account, including currency conversion costs. Those requirements apply also to bank transfers outside the EU.

Box 2 – Regulation of fees for cross-border payments in Europe

Fees for cross-border payments in Europe, including bank transfers, are regulated in an EU Regulation from 2009.* An earlier version of the regulation was approved in 2001. At that time, shortly after the introduction of the euro, the payment market in euro was still highly fragmented along national borders with large cost differences between domestic and cross-border payments. The regulation forbad banks to charge a higher fee for a cross-border payment in euro than for a corresponding domestic payment in euro. The European banking sector reacted by committing to a vision of establishing the Single Euro Payments Area with a common infrastructure that could bring down banks' own costs of cross-border payments in euro.

The regulation from 2001 included a clause which allowed non-euro area countries to 'opt in' with their national currency. The Swedish government immediately decided to make use of this clause for Swedish krona. As a consequence, banks in Sweden were not allowed to charge a higher fee for a cross-border payment in Swedish krona than for a similar domestic payment in Swedish krona. As fees for domestic payments in Swedish krona, including bank transfers, are usually quite low, if not zero, this decision was restraining on banks' pricing. Yet, as the volume of cross-border bank transfers in Swedish krona is limited, in practice the effect was minor. Later, also the Romanian government decided to opt in with its national currency, the Lei.

While the update of the regulation in 2009 was more of a technical nature, in 2019 the requirements on banks were strengthened. This followed an observation that fees for cross-border payments in euro from non-euro area countries were still high despite the banks having access to an efficient payment infrastructure in euro. Via an addendum to the regulation, banks in non-euro area countries, including Sweden, were forbidden to charge a higher fee for a cross-border payment in euro than for a corresponding domestic payment in their national currency.** In practice, this has forced banks in non-euro area countries to lower their fees for cross-border bank transfers in euro significantly, often making such transfers free of charge.

The addendum to the regulation in 2019 also included provisions to increase the transparency of currency conversion costs, see the main text.

Note: * Regulation (EC) 924/2009 on cross-border payments in the community and repealing Regulation (EC) 2560/2001. ** Regulation (EU) 2019/518 amending Regulation (EC) 924/2009 as regards certain charges on cross-border payments in the Union and currency conversion charges.

2.3 Transfers using other payment service providers

A third alternative for cross-border payments is *money transfer operators* (MTOs) that specialize in sending and receiving money across borders.

MTOs have traditionally offered their services at physical outlets, including agents in the form of smaller shops. There, people could – and still can – transfer money to recipients in other countries by handing over cash or drawing funds from a bank account. The money is then transferred to a bank account abroad or made available to the recipient, often in cash, against identification or a code.

This kind of MTO service is an option for people without a bank account to send and receive money across borders. As such, the service has played an important role in the global financial system for years, ensuring that money earned by immigrants often from poorer regions of the world could be channelled back to their home countries. Examples of MTOs that provide this service include Western Union and Moneygram.

In recent years, a new type of 'digital only' MTOs has appeared. These have no offices or agents, but allow customers to initiate transfers from a webpage or mobile application. By operating without physical outlets, digital MTOs are able to keep down costs. International providers of this service are for instance Paysend, Remitly, Revolut, Wise and WorldRemit, while Transfer Galaxy and XBath are Swedish examples.

These new MTOs offer cheaper cross-border payments than more traditional services. Consequently, the average price quotes have fallen over the last years (Engström and Reslow, 2022). For instance, the average cost of sending 1,000 Swedish krona from Sweden to Latin America has fallen from 80 Swedish krona in 2016 to 20 Swedish krona in 2022. However, we have limited information regarding the extent to which these services are actually used, and more and better data is needed (Engström and Reslow, 2022).

Payments via MTOs are regulated by the same EU legislation as bank transfers. Yet, while bank transfers are governed by the general terms and conditions for account holders, MTO transfers are in legal terms 'single transactions'. Accordingly, MTOs are obliged to provide the payer with certain information (execution time, charges, reference exchange rate applied, etc.) both prior to and after each payment.

2.4 Other cross-border payments

Cross-border payments without direct involvement of payment service providers are possible as well. One example is cash payments. Swedes can exchange Swedish krona for foreign bank notes and coins and use those abroad, and vice versa. Yet, although no payment service provider takes part in the transaction, they still play a role. For instance, before a Swede can pay in cash in Germany, she needs to get euro notes and coins, typically from a payment service provider. And a Swedish retailer receiving notes and coins will usually deposit the cash with a bank.

Cross-border payments may also be made in crypto-assets. Such assets come in different forms. One type of crypto-assets is 'free-floaters' like Bitcoin, which fluctuate significantly in terms of purchasing power. Another type is so-called stablecoins, which have their value tied to a group of assets. Until now, crypto-assets have played a limited role in payments. However, stablecoins are viewed by some as a potential future solution for cross-border payments (see e.g. FSB, 2022a).

Finally, cross-border payments may also occur through informal value transfer systems, so-called IVTS. Such systems go by names like Hawala (Middle East), fei ch'ien, or flying money (China) and phoe kuan (Thailand). IVTS are based on trust and work through a network of agents. Often, those agents have primary business activities other than sending money and balance their positions by under-invoicing exported or imported goods. We have no information on the volume of transfers via IVTS.

3 Looking under the bonnet: The processing of cross-border payments

In this section we take a brief look at the underlying mechanics of the processing of cross-border payments. By *processing* we mean everything that happens within and between the payment service providers of the payer and payee during a cross-border payment. A large part of the problems with high costs, long time lags and lack of transparency in cross-border payments originate from there.

The processing of cross-border payments involves exchanging both information in the form of payment messages and liquidity. The exchange of liquidity is often referred to as *settlement*. In the following, we distinguish between four kinds of processing: (i) on-us money transfers, (ii) transfers via correspondent banks, (iii) transfers in cross-border payment systems and (iv) transfers in single-platform systems.

3.1 On-us money transfer

An *on-us money transfer* can be used when both the payer and the payee are customers at the same bank/banking group or the same MTO. In this case the payment is a simple book-keeping exercise within the same financial institution as all that is needed is to debit the payer and credit the payee. If the payment is from one currency to another, the transfer will involve an exchange rate. However, no infrastructure or parties outside the bank are needed for the transfer, and the payment can be quick. However, sometimes the transfer is nevertheless delayed, according to the banks due to opening hours of the FX market.

3.2 Correspondent banking

For most cross-border bank transfers, the payer and payee are customers in different banks. In such situations, the payment processing typically involves correspondent banks. A *correspondent bank* is a bank that offers deposit accounts for other banks and processes payments on their behalf.

An example of how a cross-border bank transfer involving a correspondent bank can work is the following. A customer at a Swedish bank initiates a transfer in US dollars to a recipient in the US. The Swedish bank sends a message through SWIFT to its correspondent bank in the US.[23] The message contains information about the transferred amount and the recipient, including relevant bank details. The correspondent bank debits the Swedish bank's US dollar account and forwards the payment to the recipient's bank through the US payment systems. The recipient's bank concludes the transaction by crediting the payment to the recipient.

Cross-border transfers often involve more correspondent banks than in the example above. This is the case, for example, for transfers to recipients in countries where the Swedish bank does not hold deposits in a correspondent bank. Then, additional banks, or intermediaries, will have to be involved, and the transaction chain lengthens. This adds to costs and extends the duration of the transfer. It also tends to increase uncertainty about the overall conditions of the payment.

In recent years, the number of correspondent banks has decreased.[24] One reason is the increasing requirements on such banks stemming from anti-money laundering and counter-terrorism financing regulations. As a consequence, many correspondent banks have left countries where they see a risk of this sort of criminal activities, so called de-risking. In addition, MTOs, that are reliant on correspondent banks to move liquidity between countries, claim that they are no longer welcome as customers with these banks.

Large Swedish banks employ several correspondent banks. Smaller banks may rely on a limited number of correspondent banks or other Swedish banks for their cross-border payments. This may generate additional costs and make the process take longer.

3.3 Cross-border payment systems

Cross-border payments may also be processed in so-called cross-border payment systems, also called multilateral platforms. Some of these handle only one currency, like the ECB's systems for payments in euro.[25] These systems are still multilateral, though, as they cover different countries. Other systems handle several currencies, for instance payment card networks and the Nordic P27 system under development, see below.

Larger Swedish banks are present in the euro area and take part in the ECB's payment systems, where they can initiate payments. The currency-crossing part of a payment

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[23] SWIFT, the Society for Worldwide Interbank Financial Telecommunication, is the main global network for financial messages. A SWIFT message may contain payment instructions as well as other information that is relevant for the transaction.

[24] See New correspondent banking data - the decline continues and CPMI quantitative review of correspondent banking data.

[25] ECB's payment systems are TARGET2 for large value payments and TIPS for instant payments. Other systems for euro payments are, for instance, the ones operated by EBA Clearing, a clearing house owned by major banks in Europe. EBA Clearing owns and operates a number of payments systems, including EURO1 for large-value payments (an alternative to TARGET2), STEP2 (the main batch payment system in euro) and RT1, which clears the majority of instant payments in euro.

from a Swedish account will then take place within the same institution's balance sheet, but find its way to the recipient in another European bank through the ECB's system and/or other European payment systems.

In all cross-border payment systems, or multilateral platforms, liquidity needs to be moved from the payer's to the payee's bank. Sometimes this involves correspondent banks.

3.4 Single-platform processing

Finally, cross-border payments can also be processed by a solitary service provider acting at the top of the banking infrastructure. This is sometimes referred to as single-platform processing.

In single-platform processing the service provider only holds customer funds (if at all) during execution of the payment. Moreover, normally the agreement with the payer concerns only a single transaction. Also, there is often no relationship between the service provider and the payee, which may not even know of the service provider's involvement.

Single platform processing usually involves two steps. First, the service provider receives funds from the payer, e.g. as a card payment or a bank transfer. The funds, in Swedish krona, are deposited in an account held by the service provider with a Swedish bank. As second step, the service provider pays out the funds, in foreign currency, to the recipient abroad. This occurs from a bank account held by the service provider in the recipient's country directly to the payee or to the payee's bank account.[26]

4 Initiatives to improve cross-border payments

While some cross-border payments have become less expensive in recent years, overall, the basic problems of these payments remain. In most jurisdiction, cross-border payments are still significantly more costly, take longer time and are less transparent than domestic payments. These problems may be larger in poorer countries with an underdeveloped payment system, but are relevant also for many people living in Sweden, see Engström and Reslow (2022).

The good news is that cross-border payments are now receiving more attention than before. From 'having been the forgotten corner of the global financial plumbing' (Cunliffe, 2020), these payments have moved up the political agenda internationally. Today, many public and private initiatives in the field of cross-border payments are ongoing. An important catalyst has been the ambitious G20 programme to improve cross-border payments.

[26] Both on-us transfers and single platform processing and some multilateral platforms are or involve what the BIS (2018) coined "closed loop" solutions. These are solutions where the movement of funds between countries and the currency conversion takes place within one institute only.

4.1 The G20 programme

In 2020, G20 leaders adopted a 'roadmap' for enhancing cross-border payments. This followed extensive work by central banks and international organizations to describe the problems of cross-border payments and identify their root causes, or frictions (FSB, 2020a). Based on this, 19 workstreams – or building blocks – to address the frictions were defined (CPMI/BIS, 2020). Finally, a comprehensive plan with concrete actions (the roadmap) was developed and presented (FSB, 2020b).

Box 3 describes the identified frictions of cross-border payments and the G20 programme in more detail. Overall, most of the building blocks were focused on the existing payment infrastructure as well as rules and regulations with an impact on cross-border payments. In addition, three building blocks were more forward-looking, exploring the possible role of multilateral platforms, stablecoins and central bank digital currencies in enhancing cross-border payments.[27]

One building block, the first of the 19 workstreams, was mandated to develop a common vision for cross-border payments and global targets. In October 2021, G20 leaders approved a set of targets, see Table 2. They have been defined specifically for wholesale payments (i.e. payments between financial institutions), retail payments and remittances as well as for the four problem areas, that is, costs, speed, transparency and access.

Table 2. G20 Targets for the Cross-Border Payments Roadmap*

		Payment type		
		Wholesale	**Retail**	**Remittances**
Target area	**Cost**	No target	Global average cost of payment to be no more than 1 per cent, with no corridors with costs higher than 3 per cent by end of 2027.	Global average cost of sending USD 200 remittance to be no more than 3 per cent by 2030, with no corridors with costs higher than 5 per cent.
	Speed	¾ of payments available to payee within one hour and ¼ within one day by end of 2027.		
	Access	Access to at least one service for all (90 per cent of individuals in the case of remittances) by end of 2027.		
	Transparency	All payment service providers to provide at least total transaction cost by end of 2027.		

* Simplified. For details see FSB (2021b).

Compared to the current state of cross-border payments, the targets are ambitious. An example is the target for end-users' total costs for retail payments. It says that by the end of 2027, these costs should not exceed 1 per cent on average and 3 per cent for any country corridor. As explained in section 2, today, card holders' and retailers'

[27] The work on new payment infrastructures and arrangements was led by Sveriges Riksbank.

combined costs of a cross-border card payment, including currency conversion costs, typically exceed these levels.

Also the target for the costs of remittances is considerably below the current level of costs. The target reaffirms the United Nations' Sustainable Development Goal for the cost of remittances. Accordingly, the global average costs of sending the equivalent of 200 US dollar should be no more than 3 per cent by 2030, with no country corridors having costs exceeding 5 per cent. Today, the global average costs of such remittances is 6.4 per cent, and in many corridors the costs are much higher (World Bank, 2022).

Currently, the Financial Stability Board is working on a proposal to monitor fulfilment of the global targets (FSB, 2022b). For Sweden, regularly assessing the targets will require further work and more data than currently available. Yet, for remittances Sweden may be close to achieving the targets for costs and speed, see Engström and Reslow (2022). Moreover, Sweden, like other European countries, should be in a good position to satisfy the targets for transparency and accessibility.

Box 3 – Frictions in cross-border payments and the G20 programme

In 2020, a group of central banks and international organizations analysed the problems of cross-border payments (FSB, 2020a).They identified seven frictions in cross-border payments today:

- **Fragmented and truncated data formats:** Data formats for payments vary across countries and infrastructures. This complicates processing and reconciliation and leads to delays and higher costs.
- **Complex processing of compliance checks:** Countries differ in their implementation of e.g. rules to combat money laundering and terrorist financing. This hampers automation and delays payments.
- **Limited operating hours:** In most countries, opening hours of payment systems are limited to normal business hours. This delays processing, particularly in corridors with large time zone differences.
- **Legacy technology platforms:** Much of the technology supporting cross-border payments dates back many years and has a domestic focus. This limits automation and interlinking of payment systems.
- **High funding costs:** To enable rapid settlement, banks must preposition foreign currency or have efficient access to FX markets. Both entail large costs, especially for illiquid or non-tradeable currencies.
- **Long transaction chains:** Chains of linked correspondent banks are typically required to transmit payments across currencies. A longer transaction chain increases cost and delays.
- **Weak competition:** The frictions above create barriers to entry for intermediaries. This limits competition among providers of cross-border payment services.

To address the frictions, further work was organized in 19 building blocks, structured around various focus areas (CPMI/BIS, 2020). An important focus area was regulation, supervision and oversight, where further coordination is needed. Another focus area was the current payment infrastructure, including opening hours, access and liquidity arrangements. A separate focus area was also new payment infrastructures and arrangements and their possible role in improving cross-border payments. Three specific ‘innovations’ in the form of multilateral platforms, stablecoins and central bank digital currencies were selected for deep-dive analysis in individual building blocks. A new working group, Future of Payments, was established for this purpose.

Finally, for each building block a multi-year action plan was developed and presented as ‘the roadmap’ to enhance cross-border payments (FSB, 2020b). The ensuing work, involving both public and private sector entities, has led to a broad range of analysis and recommendations that can be expected to guide the international work on cross-border payments for years to come.

An overview of the G20 programme and the reports published with involvement of the international community of central banks can be found at the Bank for International Settlements (BIS) webpage.

4.2 Central bank initiatives

Central banks have an important role to play in improving cross-border payments. This follows naturally from the frictions described in Box 3. Several of them can be reduced by appropriate central bank actions like broadening access to payment systems, extending their opening hours, linking payment systems and establishing efficient liquidity arrangements.

The central banking community is involved in many initiatives that can affect Swedes' cross-border payments.

4.2.1 Cross-currency settlement service

One of these is an initiative where the ECB and the Riksbank are exploring a service to settle instant payments across currencies. In May 2022, the Riksbank launched a new service, RIX-INST, for settlement of instant payments in Swedish krona.[28] The ECB launched its real time settlement system called Target Instant Payment System (TIPS) in November 2018. The two systems use the same hard- and software (the 'TIPS platform'). This might facilitate an efficient instant payment service across the respective currencies. Such a service would make it easier for banks to offer real-time payments (like a payment with Swish, the Swedish mobile payment solution) between accounts in euro and Swedish krona. The central banks in Denmark and Norway have expressed interest in the service as well, which may eventually allow for instant settlement of payments also between the Nordic currencies.[29]

4.2.2 Linking faster payment systems

The Nexus initiative, coordinated by the BIS Innovation Hub in Singapore, is a model for connecting domestic faster payment systems into a platform for cross-border payments. The basic idea behind Nexus is to allow domestic payment systems to achieve multi-country reach by providing a standardized way for these systems to speak to each other. As an important difference to the TIPS-based service described above, Nexus will have to be complemented by liquidity arrangements to settle the payments.

In 2021, BIS Innovation Hub Singapore issued a blueprint describing Nexus.[30] This also marked the start of the test phase in which the faster payment systems in Singapore, Malaysia and the euro area (TIPS) were connected, processing simulated payments. Lessons learned from this will be used to further improve the design of Nexus. In general, Nexus is viewed as one of the most promising initiatives in improving cross-border payments. In Sweden and the Nordics, the work on Nexus should be followed closely as a possible solution to achieve reachability with other jurisdictions.

[28] Although the service is there, Swedish banks have yet to migrate payments to the system.

[29] The central bank of Denmark will use the TIPS platform and the central bank of Norway is considering if it shall use the TIPS platform.

[30] BIS Innovation Hub and the Monetary Authority of Singapore, *Nexus: a blueprint for instant cross-border payments*, July 2021. See Nexus Overview.

4.2.3 Connecting CBDCs

Some central banks are engaged in work exploring how so-called central bank digital currencies (CBDCs) can help in improving cross-border payments. Earlier this year, as part of the G20 roadmap described above, the BIS/CPMI, IMF and the World Bank published a report on how CBDC systems can facilitate cross-border payments (BIS et al., 2022). The report also describes existing cross-border CBDC projects.

A recent cross-border CBDC project is called Project Icebreaker and is a collaboration between Sveriges Riksbank, the Bank of Israel, Norges Bank, and BIS Innovation Hub Nordic Centre.[31] This project will develop a 'hub' to which participating central banks can connect the domestic CBDC systems that they are testing. The objective is to test some specific key functions and the technological feasibility of interlinking different domestic CBDC systems. This may enable immediate retail CBDC payments across borders, at a significantly lower cost than existing systems. The project will run until the end of the year, with a final report expected in the first quarter of 2023.

4.3 Private-sector initiatives

Several private-sector initiatives to improve cross-border payments have been launched as well. Some were announced well before the G20 roadmap, and a few are already in operation. The strong political focus on cross-border payments signalled by the G20 programme may also have encouraged market participants to start developing new services. In the following, we describe a few private-sector initiatives relevant for Swedes' cross-border payments.

4.3.1 Single Euro Payments Area

One of the most important initiatives in recent years to improve cross-border payments is the establishment of the Single Euro Payments Area (SEPA). SEPA is the label for the vision of a common payment area in euro consisting of the entire EEA, that is, the EU countries and Iceland, Liechtenstein and Norway, as well as Switzerland and the United Kingdom. The fundamental principle is that within SEPA there should be no borders when making a euro payment; it should be no more complicated or costly to make a payment from Berlin to Paris than from Berlin to Hamburg.

The mechanics behind SEPA basically consists of a set of rulebooks that describe how payments should be processed between banks. The rulebooks are owned and maintained by European Payments Council, an organization with mainly banks and bankers' associations in Europe as members. EPC was established in 2002, following the approval of the EU regulation described in Box 2. Later, the regulation was supplemented by further legislation making use of the common rulebooks mandatory for euro payments across the EU.[32]

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[31] See Project Icebreaker: Central banks of Israel, Norway and Sweden team up with the BIS to explore retail CBDC for international payments.

[32] Regulation (EU) 260/2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) 924/2009.

Swedish banks are members of the EPC and offer their customers cross-border payments in euro based on the SEPA rulebooks. If a recent proposal by the European Commission is approved, banks in Sweden will also be obliged to offer instant payments in euro according to the SEPA standards.[33]

4.3.2 P27

P27 is an initiative to establish, within the Nordics, a common region for domestic and cross-border payments. Unlike SEPA, P27 will span multiple currencies, initially euro, Danish krona and Swedish krona. The name, P27, refers to the initiative's aim to improve payments for the 27 million inhabitants of the Nordic countries, including Norway, which originally was part of the project scope.

The banks behind the initiative have formed a company, P27 Nordic Payments, which in Sweden will take over from Bankgirot as provider of clearing services. The payment messages follow standards set by Nordic Payments Council, an EPC-like organization with banks and their associations as members. The standards will be aligned closely with those in SEPA.

P27 has the potential to improve cross-border payments in the Nordics, particularly if the new clearing service facilitates instant payments between accounts in different currencies, e.g. Danish krona and Swedish krona. Alternatively, this may be the case if P27 is complemented by common payment solutions, for instance a Nordic service for bill payments.

4.3.3 SWIFT GPI

In 2017, SWIFT launched its global payment innovation service, called SWIFT gpi. This is a set of business rules and digital tools to improve the speed and transparency of cross-border payments via correspondent banks. SWIFT member banks who commit to SWIFT gpi agree to provide same-day use of funds, transparency of fees, end-to-end payments tracking and unaltered transfer of information. Today, more than 75 per cent of all cross-border SWIFT payments are sent via SWIFT gpi, and more than 1,000 banks, including Swedish banks, have joined the service.[34]

The processing time of payments sent via SWIFT gpi is generally short but varies significantly. The average payment processing time is 8 ½ hours, while the median is 1 ½ hour (CPMI/BIS, 2022). Longer processing times tend to occur in low and lower-middle income countries. In these countries, capital controls and related compliance processes, weak competition, limited operating hours of payment systems and the use of batch processing by beneficiary banks may tend to prolong processing times.

In 2021, SWIFT also introduced SWIFT Go, a service intended for cross-border payments by small businesses and consumers. Based on tight service level agreements between participating banks and pre-validation of data, the service

[33] See European Commission, Proposal for a Regulaton amending Regulation (EU) 260/2012 and (EU) 2021/1230 as regards instant credit transfers in euro, 26 October 2022.

[34] See The digital transformation of cross-border payments.

promises processing of payments within seconds at low and predictable costs. At the time of writing, more than 200 banks, including a few major banks in Sweden, have joined the service. Recently, also the international card schemes Visa and Mastercard have launched cross-border payment services, i.e. Visa Direct and Mastercard Cross-Border Payment Services.

4.3.4 ISO 20022

Parties involved in a non-cash payment need to exchange information about amounts, account numbers, dates, and so on. For this exchange to work, the parties need a shared language. Furthermore, if the payment process is to rely entirely on computers, the messages containing this information must be structured so that the receiving computers can read and process the message correctly. It is therefore useful with a common payment messaging standard that provides clear definitions of the information and data formats (field lengths, codes, character sets) that can be exchanged between parties.

The International Organization of Standardization (ISO) has developed a global and open 'recipe' for setting payment message standards called ISO 20022. While banks and financial institutions have previously used different standards, they have now developed and are implementing standards based on ISO 20022.

In March 2023 the Eurosystem and ECB will migrate to standards based on ISO20022. Worldwide, the transition is expected to proceed until 2025, which is SWIFT's end date for the old format and the old standard. The Riksbank and the Swedish market plan to change to messaging standards based on ISO 20022 during a transitional period which ends in 2025.

ISO20022 will help make it possible for larger amounts of smoothly-running payments to be made over national boundaries. The new standards based on ISO 20022 mean less need for manual handling in the payment flow between banks. Among other things, the cost of compliance with regulatory requirement on anti-money laundering (AML) and counter terrorism financing (CTF) can be reduced and the payment process automated. The process might very well bring benefits in terms of lower costs, higher speed and more transparency for payments in and out of Sweden.

5 Conclusions

While some cross-border payments have become less expensive in recent years, overall, the basic problems of these payments remain. In most jurisdiction, cross-border payments are still significantly more costly, take longer time and are less transparent than domestic payments. These problems may be more severe in poorer countries with underdeveloped payment systems, but are nevertheless relevant for many people living in Sweden.

The good news is that cross-border payments are likely to improve. Cross-border payments are in focus for both the public and the private sector these days. The public sector is considering how they can contribute, for instance by providing new settlement services and regulation. In the private sector, entrepreneurs see new business possibilities and standard setters and regulatory bodies are also active. An important catalyst for many of these initiatives has been the ambitious G20 programme to improve cross-border payments.

However, continued improvements require further efforts and attention from both the public and the private sector. And the stakes are high: trade is essential for economies' growth and prosperity, and efficient cross-border payments facilitate trade. In addition, there is a social dimension as money sent abroad often constitute a major share of families' income in receiving countries.

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