

# Rebuilding the financial structures

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Digital technology is developing rapidly and affects the supply and demand for payment services and financial services. But the way in which the financial sector produces these services is also changing. The financial infrastructure is the 'factory' used by the financial sector in this form of production. The Riksbank provides important parts of the financial infrastructure. It is therefore of the utmost importance that the Riksbank's supply of infrastructure services meets the needs of the market.

In this article we describe the changes driven by technological advances, the challenges they pose and what the Riksbank is doing to future-proof the services that the Riksbank supplies to the Swedish market.

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## 1 Introduction

Technological advances are rapid, not least in communication. In the space of 100 years, we have moved from postal services, telegraph and radio to television, e-mail and streaming. We can post images that are instantly available on social media and send text messages that reach the recipient within seconds. This is something we take for granted, and we expect the same speed regardless of national borders everywhere in society.

Payments, securities trading and other financial services are essentially also a matter of transferring information between different parties. But in these areas, developments do not seem to have created the same real-time experience as in other communications, with the instant payment app Swish as a major and important exception on the Swedish market. If you want to pay bills, it usually takes one day before the payment order is executed. If you want to buy or sell securities in a marketplace, you can certainly do it online at the touch of a button, but the actual exchange of money and securities takes place two days after the deal has been made.

Financial services are not only slower than communications services. Physical distance also plays a greater role. Communication services are now virtually independent of geographical distances, while financial services are subject to barriers that increase with distance and geographical borders.

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If you want to call someone in France or Spain, just dial the phone number, and an e-mail reaches Paris and Madrid as quickly as Perstorp and Malung. It doesn't matter where you are, whether you want to follow someone or be a friend of someone on the various social media sites available. In contrast, payments to countries in the eurozone are admittedly relatively simple and quick compared to before, but it still takes a day for them to get there. If you want to buy shares in France or Spain, there are few easy ways to do so. It takes longer than buying Swedish shares and it is more expensive. When it comes to moving financial values, there seems to be a simple rule of thumb: The further the value has to travel, the more complicated it is, the more expensive and the longer it takes.

## 2 Why financial services are so slow

To explain why financial services are still operating as slowly as they are, we first need to outline the financial infrastructure. In brief, it consists of the technical systems that manage payments and transactions with financial instruments. Money and securities are now mainly recorded and recorded digitally. The general public's demand deposits with banks and the state, that is, money that can be withdrawn immediately or at short notice, amounted to nearly four thousand billion kronor in November 2021, while the public's holding of cash was slightly over SEK 60 billion.<sup>1</sup> Like demand deposits, all securities are also issued and registered digitally. A payment or securities transaction is therefore now essentially a matter of exchanging information between buyers, sellers and their intermediaries, which are usually banks.

Let us take two examples, the first of which is what happens when a payment is to be made, the second when a security is to be purchased.

### 2.1 How does a payment work?

Let's start with money and a payment to be made digitally. Money is generally recorded in accounts with a bank. When making a payment, it must be possible for the paying party and the recipient to have accounts in different banks. The payer's and payee's banks therefore need to communicate, record and exchange money with one another. The latter step is called settlement, which means that payment is finally regulated between the banks involved. Settlement almost always takes place by the banks having accounts with the Riksbank that they use to transfer money between one another. This is done in the Riksbank's RIX-RTGS payment system, where around 531,000 payments are made per month, with an average value of approximately SEK 35 million. The annual turnover in RIX-RTGS is around SEK 130,000 billion, that is nearly 26 times Sweden's annual GDP.

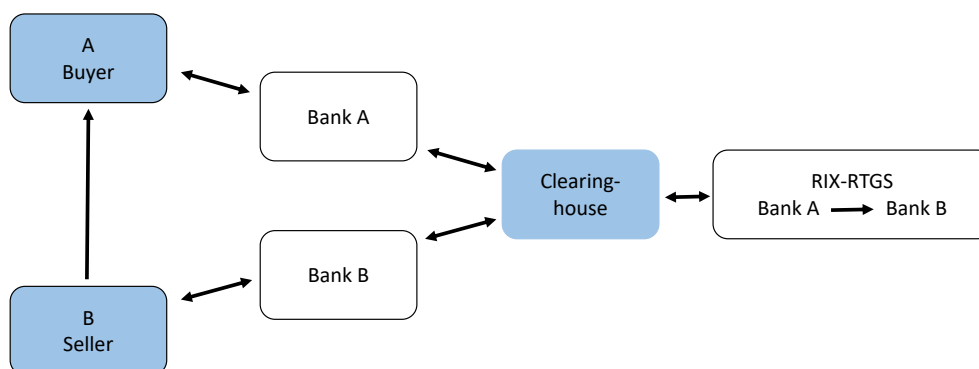
RIX-RTGS is built to carry out relatively few but large payments between banks and not to handle large amounts of payments or the information accompanying payments by the general public, such as reference numbers, invoice numbers, customer numbers and similar information. As the number of payments in the economy is very high, the banks therefore cannot send all payment instructions between themselves

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<sup>1</sup> Statistics Sweden, Financial Market Statistics, November 2021, Table 5.1.

one by one via RIX-RTGS, but use a central hub called a clearing house, and that merges payment information from many small payments into large files to ensure that each bank gets the right information at the right time.<sup>2</sup> The clearing houses are thus responsible for communication, consolidation of payments, including calculation of the amounts to be paid to one another at the time of settlement, and provide a base for the accounting needed before and after settlement.<sup>3</sup> Clearing houses can also help banks to implement the settlement by sending instructions to the settlement system. Because of the clearinghouse, each bank has to process only a few information exchanges instead of many thousands per time interval. The clearing house used by a bank depends on the type of payments it makes. For example, Bankgirot is used for bank giro payments and most often Visa or Mastercard is used for card payments.<sup>4</sup> See Figure 1 for an illustration of a payment between a buyer and a seller with different banks.

**Figure 1. Payment between buyers and sellers with different banks where the payment information goes through a clearing house**



## 2.2 How does the purchase of securities work?

Our next example concerns trading in securities that takes place on a trading place, that is, a stock exchange, where price and quantity are agreed. Buyers and sellers use a bank or other financial institution as an intermediary to place the buy or sell order on the stock exchange. However, the transfer of ownership is not registered there but with a so-called central securities depository, CSD. In Sweden's case the CSD is Euroclear Sweden AB, where securities are issued and ownership is registered.<sup>5</sup> The

<sup>2</sup> The following anecdote can illustrate the practical value of using a central hub. In London in the 1770s there were so-called walk clerks that went between the banks to redeem and pay cheques. It is said that two of them were eating lunch at the Five Bells Inn on Lombard Street. During their well-deserved break, one of them suggested that all walking clerks should meet at the Five Bells to exchange cheques instead of walking around as they did now. This was the birth of the modern clearing house. See Shafik (2016).

<sup>3</sup> These amounts to be paid by the banks to one another can be calculated in two ways: net or gross. Almost all payment flows via Bankgirot are gross amounts, while card payments are net amounts.

<sup>4</sup> However, card payments via Visa and Mastercard are an exception to the rule that all payments within Sweden are settled in RIX-RTGS. These payments are settled at selected banks abroad.

<sup>5</sup> A central securities depository is a company that provides securities accounts, securities storage and issuance and often associated services such as voting lists for annual general meetings, dividends, interest payments and so on. When securities are issued, they are registered with the securities depository, which registers ownership and transfers and ensures that the information is accurate and complete. A securities

ownership information then forms the basis for dividends, interest payments and so on.<sup>6</sup> For certain types of transactions, clearing houses are also used for securities trading.<sup>7</sup>

The purchase of securities is not complete until the seller has received money for the security. Ideally, money and securities should exchange hands at the same time, to reduce the risk that one of the parties will not receive what they have agreed on (credit risk) or that they will receive it too late (liquidity risk).<sup>8</sup> This type of exchange is much easier if the accounts for both securities and money are in the same place, which they are in Sweden. Euroclear carries out the transfer of the securities at the same time as it transfers money between the buyer and the seller, or in their agent's accounts with Euroclear. These accounts can be regarded as part of RIX-RTGS in that the Riksbank allows Euroclear to administer special RIX accounts in Euroclear's own systems.

### **2.3 A safe infrastructure is important for the krona to function**

Why does the Riksbank allow Euroclear to administer special RIX accounts? Well, central banks have a particular responsibility for the proper functioning of financial infrastructures, see Figure 2.<sup>9</sup> This is because the Riksbank's tasks regarding price stability and a safe and efficient payment system presuppose that the financial infrastructure is safe and efficient. There is an interdependence between these tasks. Price stability and a secure and efficient infrastructure contribute to making the Swedish krona attractive for payments within Sweden. The use of the Swedish krona is in turn a prerequisite for the Riksbank to conduct monetary policy and for the use of the payment infrastructure provided by the Riksbank, including cash. If the Swedish krona is not used for economic transactions, the Riksbank loses the tools necessary for the Riksbank to carry out its tasks.

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depository usually operates a securities settlement system and sometimes, as in the case of Euroclear Sweden AB, also a settlement system for the associated payment.

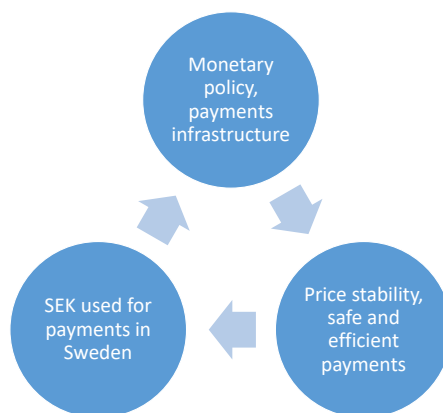
<sup>6</sup> In our review, we disregard, for the sake of simplicity, so-called custodians, which are companies, usually a bank, that store and administer securities or other assets on behalf of their customers and which can also provide other associated services such as clearing and settlement, liquidity management, currency exchange and cross-border payments, credit and pledging.

<sup>7</sup> These clearing houses are often so-called central counterparties (CCPs). In the Swedish market, two such clearing houses offer their services: NASDAQ for derivatives trading and Euro CCP for equity.

<sup>8</sup> A simultaneous exchange of securities and money is often referred to as DVP, which stands for Delivery-versus-Payment.

<sup>9</sup> In most countries, the situation is similar to Sweden; they have one or two clearing houses for payments, one central securities depository and one central counterparty. The settlement of payments takes place at the central bank. These similarities have made it possible to develop common and global standards for the financial infrastructure to comply with, see CPMI and IOSCO (2012) and CPMI (2005).

**Figure 2. How a safe and efficient financial infrastructure contributes to monetary stability and financial stability**



## 2.4 Countries have already designed their own infrastructures

Financial infrastructures are almost always built to work in only one country or currency area. There are several reasons for this. One is that different countries have different laws which the infrastructures are built on and must comply with. Laws may differ between jurisdictions, and often there are historical reasons for this. Although the EU is striving for common legislation and convergence in national legislation, there are still differences. For example, there is a requirement for payments in euro to comply with certain standards and rules, known as SEPA (Single Euro Payment Area), but this does not apply to payments in Swedish krona.

These legal and historical differences mean that financial services and payment products are often different in different countries. For example, in Sweden we usually use Visa and Mastercard cards, while Denmark has its own national card, the Dankort. A Swedish household bill or invoice has a Bankgiro or Plusgiro number and a special reference number for the payment that follows a specific Swedish standard.<sup>10</sup> Most payments and transactions are also made within the country. Households pay bills for electricity and water, for example, to local suppliers, they work locally and are paid in local currency. In the same way, companies often have a large proportion of their payments locally. Securities are also traded mostly on the domestic market. In addition, there are generally established export and import supply chains and established banking relationships that enable companies to make payments between countries.

Then there are economic factors that contribute to the national structures having remained national. Financial infrastructure is complicated and expensive to build. Once you have invested in IT systems, design processes, routines and regulations, the infrastructure has a long economic lifetime. It is therefore often cheaper to continue using the existing infrastructure than to build a new one. Moreover, banks, companies, government agencies and other players have already invested in

<sup>10</sup> The reference number is called an OCR number, where OCR stands for Optical Character Recognition. The number usually includes information on the invoice number, or the customer number, or both, and is intended to allow the payment recipient to automatically register and book the payments.

equipment, software and internal processes based on the existing standard. There is also a lock-in effect here. The fact that most of the transactions are domestic also means that the economic drivers for changing an existing infrastructure are small. Making major changes requires a firm commitment from the providers of infrastructure services and those who use them, and firm deadlines for things to happen. Take, for example, the introduction of the new ISO 20022 standard for financial communications. Originally published in 2004, this is an open international standard that is intended to be used worldwide. It was not until 16 years later that SWIFT, a global provider of communications and messaging services to the financial sector, decided to changeover to the new standard.<sup>11</sup> The Riksbank and the Swedish market plan to change to it during a transitional period with a closing date in 2025 for the RIX system. In other words, a changeover to something new tends to take a long time, to require careful planning and to use considerable resources.

### 3 How can things be changed?

A monetary system consists of a currency and the institutions and frameworks necessary for the money to be used in the economy. The Swedish monetary system consists, for example, of the Swedish krona, the Riksbank, the Swedish National Debt Office, the Swedish banks, the financial infrastructure and the legal framework. History also shows that there is a need for interaction between the public and the private side to develop and safeguard well-functioning monetary systems. We believe that history has taught us at least four lessons:

- Firstly: For a monetary system to work, there needs to be *confidence in the money*. This is ensured by having a credible issuer that guarantees the value of the money. Agreeing on a monetary unit in a country – what economists usually call *uniformity in money* – also makes the system function more smoothly and simply.
- Secondly: *Technological advances*, which are often linked to something quite different from payments, are an important driving force for change. This goes hand in hand with *ingenuity*, man's ability to respond creatively to needs that arise. Sometimes it can also lead to the emergence of new forms of business.
- Thirdly: *The private and public sectors* complement one another because they have different tasks. Where the public sector stands for trust and stability, the private sector offers innovation. Throughout history, the public sector has sometimes also had to take the lead in order for changes to take place in a way that benefits everyone in society.

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<sup>11</sup> SWIFT (Society for Worldwide Interbank Financial Telecommunication) is a limited liability cooperative company, registered in Belgium. As of early 2022, SWIFT supplies secure messaging services in 202 countries and to more than 7,500 financial institutions, including banks, broker/dealers, investment managers, and over 100 market infrastructures in payments, treasury, securities and trade etc. SWIFT messages are used for payments in large-value payment systems such as RIX-RTGS. However, the bulk of SWIFT messaging activity is related to the exchange of payment information between banks involved in correspondent banking arrangements. Access to the SWIFT network is thus key for banks in executing cross-border payments.

- Fourthly: *Network effects and economies of scale* are important factors to consider when it comes to payments. They prevent new agents from entering the market, but they also provide scope for efficiency gains. These two effects are in themselves nothing new, but they have become more important now that payments have been digitalised.

Central governments play an important role with regard to the financial infrastructure. It is the central government that makes the laws to ensure the sound functioning of financial activities. It is also the central government that must ensure that the financial infrastructure and its participants comply with the laws and regulations that exist, have a sound financial position and meet international standards and other requirements. In Sweden, the private sector has often been able to coordinate itself and build much of the financial infrastructure itself. But this is not always the case, either in Sweden or in other countries. The central bank often needs to intervene and either try to get the market to coordinate itself, that is, the central bank assumes a catalyst role, or builds and provides the infrastructure itself.

In almost all countries, it is the central bank that provides settlement for large-value payments in the same way as the Riksbank does through RIX-RTGS. The money used for settlement is a claim on the central bank and is known as central bank money. Settlement in this way minimises credit and liquidity risks because the money is a claim on the central bank and not on any private agent who could become insolvent. The central bank is also neutral to competition for the participants. Historically, the central government has occasionally been dissatisfied with the private sector's supply on the payment market and provided services in other ways. One such example is Postgirot, a postal giro system which was formed in 1925 as part of the Postsparbanken bank (a subsidiary to the Swedish postal service) because the banks' long-distance payment services in Sweden were considered to be substandard.<sup>12</sup> Sending cash and cheques in envelopes, which was the technique prevailing at the time, was not sufficient.

To move from a situation of nationally-defined infrastructure to a situation with a more cross-border infrastructure, the government needs to take a leading role, but in close cooperation with the private sector. And the Swedish government also needs to cooperate with governments in other countries. For Sweden, this is happening above all at two levels: In the EU and in global regulations.

### 3.1 Cooperation between countries is intensifying

Both market players and public sector policy makers are increasingly realising that nationally defined infrastructures are not fully capable of providing the services

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<sup>12</sup> The system with cheques and postal orders was very costly for companies and banks, and in 1917 the Post Cheque Committee was established. Its purpose was to investigate the need for a post-cheque operation that was adopted to a large extent could simplify payments, facilitate accounting and at the same time have low charges, as it would be relatively cheap to administer. The postal service would also be released of the cumbersome procedure of postal orders. There was also an aim to reduce the handling of cash. A proposal was submitted to the Riksdag (the Swedish parliament) in 1922, but was rejected. In 1924 it was time again after pressure from the National Accounting Board and the General Post Office. Postgirot was set up as part of the Postsparbanken, see SOU 1979:35.

required in a world that is increasingly economically integrated and digitalised. This insight has emerged over a long time but has been particularly topical in recent years.<sup>13</sup>

In 2017, the Swedish major banks joined forces with their Danish and Finnish counterparts to build a Nordic clearing platform for payments – the so-called P27 initiative.<sup>14</sup> The purpose of this was both to continue to exploit economies of scale and to facilitate payments between the Nordic countries.

The central banks also include a number of initiatives that we will be talking about in Section 3.4. First, however, we want to focus specifically on what the Riksbank is doing to modernise its service offering.

### 3.2 The Riksbank adjusts its range of services

RIX and its current services have contributed to financial stability and served the Swedish banks well for a number of years. However, the demands for a modern central bank system for payments have evolved gradually. Globalisation also increases the need for an adaptation of Swedish services and standards to those used in the world around us. New functions are requested and as the number of participants grows, higher operating loads and risks follow. New types of threat are also emerging, particularly cyber-attacks, and specific security measures are needed to deal with them.

Above we have talked about settlement in RIX-RTGS, which manages large amounts, and about the role of clearing houses. For the end customer, this means that the transaction typically takes one day or more. However, since 2012, Swish, a Swedish instant payment app, has been available as an alternative for small transactions that can be executed immediately.

Swish payments are settled in BiR, a settlement system for instant payments owned and operated by Bankgirot. The BiR system settles payments between the banks and not in central bank money but in private money that is not a risk-free claim on the Riksbank. To reduce the credit and liquidity risk that arises from this, the Riksbank and the banks have prepared a solution whereby the banks make special BiR provisions in RIX-RTGS that serve as a guarantee for payments in BiR. However, in the future, when a large proportion of all payments are made instantly, this arrangement will not be sufficient. This is partly due to the fact that the amounts will be much higher than today, which again raises the credit and liquidity risks arising from settlement in private money. The banks' needs for liquidity and to be able to adjust their liquidity in the system will also be greater. Allocating funds in RIX-RTGS as in the current system is not the easiest way of meeting these needs, and it also has certain disadvantages for forecasts of liquidity in RIX. All in all, the present solution could in the long term pose risks to financial stability.

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<sup>13</sup> An analogy is when Ernest Hemingway in the book *The Sun Also Rises* writes: "How did you go bankrupt?" Bill asked. "Two ways," Mike said. "Gradually, then suddenly."

<sup>14</sup> See [P27 Nordic Payments](#).



Following an in-depth analysis, the Riksbank has therefore decided to develop a new service for instant payments. RIX-INST, as we call it, is based on the European Central Bank's (ECB) TIPS platform (Target Instant Payment Settlement), which was launched in November 2018 to settle instant payments in euros *and possibly other currencies*. This service will mean that the banks can settle payments instantly in central bank money, 24 hours a day, all year round. Based on RIX-INST, the banks can then develop services for instant payments to their customers.

RIX-INST also means that the Riksbank will share the TIPS platform with other central banks, which has several advantages. Firstly, it offers efficiency gains because of the economies of scale we mentioned earlier. It is not only the fixed development and operating costs that are distributed over higher volumes, but also the future costs of protecting against cyber attacks and similar. This is one of the few things we know about future payments: These costs will increase in the future.

Secondly, a common platform helps the Swedish market harmonise to European standards. It is already based on the standards applied in the eurozone and increasingly on the European payments market as a whole. It benefits Swedish banks and their customers operating in other European countries if they are able to manage their payments in a uniform manner regardless of currency. Such streamlining of payment processes both in Sweden and abroad will promote competition in the payments market.

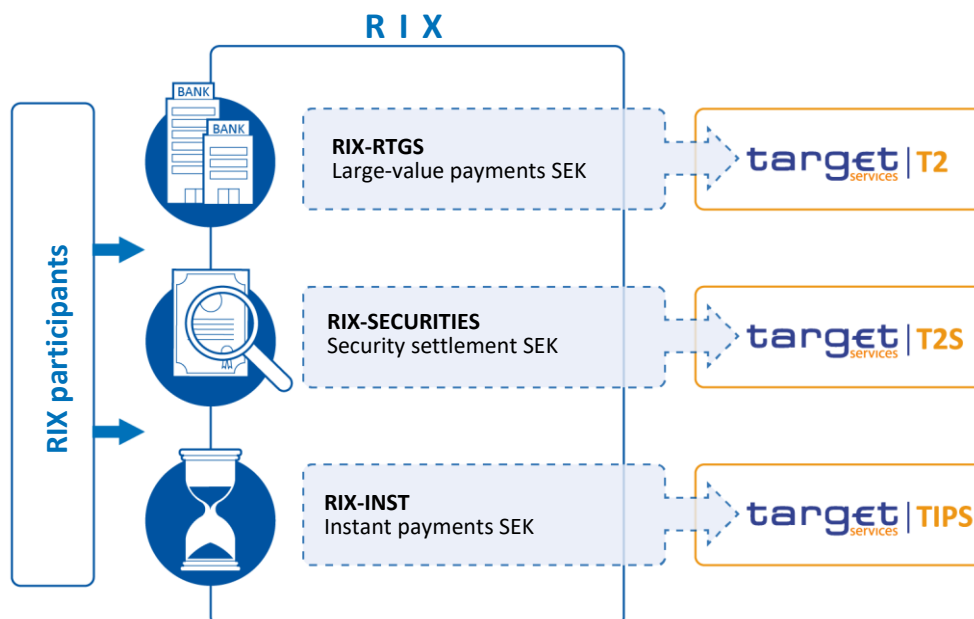
Thirdly, competition will be further strengthened by RIX-INST being provided in a competition-neutral manner. The Riksbank will decide on access and prices without consideration of the commercial interests that private systems might have. This is particularly important in view of the barriers created by network effects and economies of scale, especially when taking into account that this type of payment is becoming increasingly frequent.

This new service will be opened for the private sector in spring 2022 and will be available to participants in RIX (see below).<sup>15</sup> The Riksbank and the ECB are at the same time investigating the possibility of using the TIPS platform for instant payments between currencies such as the Swedish krona and the euro. This could be a further advantage of sharing this platform. Norway and Denmark are also intending to use TIPS for instant payments in their national currencies, see Danmarks Nationalbank (2020) and Norges Bank (2021). It is also likely that more countries will want to join the platform. It can then act as a hub for instant payments between a number of currencies.

The RIX-INST service will be offered as part of RIX, the Riksbank's payment system. The Riksbank is also investigating the possibility of using other ECB platforms for large inter-bank payments (RIX-RTGS) and for securities settlement in Swedish krona, see Figure 3. For the latter services, see Section 3.3.

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<sup>15</sup> The participants who can participate in RIX are credit institutions, investment firms, clearing organisations, central securities depositories, central counterparties and the Swedish National Debt Office, see [Terms and conditions | Sveriges Riksbank](#).

**Figure 3. How RIX can be transferred to the Eurosystem platforms.**

### 3.3 A holistic approach to RIX

The Riksbank will use the ECB'S TIPS platform for the RIX-INST service, while the existing RIX-RTGS service has been provided since 2009 through the Riksbank's own system. However, this service needs to be renewed. For this reason, the Riksbank decided in September 2021 that it would start preparing to be able to use the Eurosystem's future platform T2 for the next generation of RIX-RTGS, see Sveriges Riksbank (2021). T2 will replace TARGET2, which is the current Eurosystem real-time gross settlement system. It will include a number of services that have been improved in relation to TARGET2, and be based on the global messaging standard ISO 20022. Like TIPS, T2 will also be able to facilitate payments in several different currencies – possibly including the Swedish krona. T2 will come into operation in November 2022.

At the same time, the Executive Board of the Riksbank decided to also initiate a similar process for TARGET2-Securities, T2S, which is a platform for simultaneous settlement of securities and money. At present, only one central securities depository, Euroclear Sweden AB, has access to central bank money in Swedish krona for securities settlement. By joining T2S, other CSDs would also have access to Swedish krona. They could then offer services on the Swedish market, which would improve the competitiveness of the Swedish market. T2S started operations in 2015 and has developed into a platform for multiple currencies. For example, the Danish Krone has been available for settlement since October 2018.

As with TIPS as a common platform, it would give Sweden significant economies of scale to use the T2 and T2S platforms together with the Eurosystem. This would mean that Sweden, via the Riksbank, has access to the resources and expertise of the Eurosystem. This in turn will help to ensure that the service can continue to develop in line with best practice. In addition, joining the two platforms would help to harmonise the Swedish financial market with the European financial market. The

Riksbank considers this to be the best strategy to enable Swedish and foreign banks and investors to make payments and trade securities efficiently.

Since these are platforms for large-value payments, the effects of joining T2 and T2S will primarily have an impact on participants in the Riksbank's current RIX-RTGS settlement service. But, by extension, it should also save costs for end-users of financial services. One example could be companies that want to issue bonds to finance their activities. It will then be a clear benefit to them if they can do so within an infrastructure that harmonises with larger European markets.

The preparations that the Riksbank has decided to initiate will serve as a basis for the Executive Board's decision on whether to start contractual negotiations with the Eurosystem. The Riksbank needs to analyse a number of important points more carefully. These concern everything from the consequences of these decisions for monetary policy and financial stability, to possible reserve solutions. We also need to further examine what possible requirements must be met under Swedish protective security legislation.

This is not something that will happen overnight. The decision to proceed will be followed by work that takes several years – negotiations with the Eurosystem, implementation, testing, and so on. The first transaction using Swedish krona on T2 or T2S is likely to occur in perhaps seven or eight years' time.

### **3.4 Global work is moving fast**

As we all know, the world does not stop at the borders of the European Union; the general public needs to be able to move economic values around the entire globe. That is why G20 countries have developed a comprehensive programme to improve cross-border payments. The work is structured as a 19-building block road map, with 16 building blocks focused on improving the current systems. Building blocks 17, 18 and 19 instead see different possibilities for exploring future, not yet fully operational methods for improving payments.<sup>16</sup>

One could say that the work that the G20 is now carrying out is a modern and more comprehensive version of when the Swedish state introduced Postgirot. In the same way as then, the public sector is dissatisfied with the current situation and sees a need to both guide and drive the private sector. Here too, however, the public and private sectors must cooperate. Cross-border payments only work well if there are harmonisation, standards and a reliable legal framework. These are areas where the public sector at global level has promised to improve, but ultimately it is the private sector that has to deliver the end products. However, it is now the public sector that has set the course, and in a few years' time, it is hoped that payments between countries can be made almost as smoothly as within the country.

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<sup>16</sup> Building blocks 17, 18 and 19 cover multilateral platforms, stablecoins (see Section 3.5) and digital central bank currencies. For more information on this work, see [CPMI cross-border payments program](#).

### 3.5 Crypto assets create both threats and opportunities

While the public sector has taken the initiative to improve payment infrastructure at a global level, there is a lot of activity in the private sector. We have previously mentioned P27, but in this section we want to describe a more difficult development: Crypto assets. Crypto assets are created through the issuer creating a digital representation of its asset, a so-called token. The most well-known crypto assets are crypto currencies such as bitcoins.<sup>17</sup> In general, crypto currencies are not regulated in the way that traditional assets such as shares and money market funds are, which means that they lack consumer protection and are therefore more risky investments. Nor are they regulated to act as reliable money. For money to function as a means of payment, it has to be safe and generally accepted. Crypto currencies do not have a state behind them that ensures financial infrastructures, well-functioning banks, sound public finances or anchors the value of the money. This is why their value varies so much.

A sub-group of crypto assets is called stablecoins. Their value is typically tied to the value of other assets, such as a national currency.<sup>18</sup> The stablecoin issuer claims to hold a reserve in, for example, dollars. Stablecoins have similarities to money market funds, since the reserve for certain stablecoins is largely invested in short-term assets such as commercial paper. But they are not subject to the same regulations and requirements as these funds. In financial crises, it is common for market actors to move their holdings to safer assets and for the value of certain other assets to decline. If the assets in the reserves for stablecoins fall in value, this can lead to the issuers of stablecoins having liquidity problems. If this in turn leads to the demand for stablecoins declining, the issuers may need to sell off their underlying assets quickly, which can lead to the price of the underlying assets falling further and reinforcing a negative spiral.

Extensive cooperation is now taking place at global level to ensure that these stablecoins are regulated and monitored in a way that does not make them a source of financial crises. Properly designed and monitored, there is a possibility that stablecoins could contribute to the better functioning of cross-border payments.

Within the EU, the European Commission has presented proposals for a regulation on the markets for crypto assets, the so-called MiCA Regulation. It is intended to regulate issuers and providers of services for crypto assets.<sup>19</sup> At present, crypto assets are not covered by the EU regulations for financial services – apart from the regulations for combating money laundering and terrorist financing. The proposal, which can be expected to begin to apply in full some time during 2023 or 2024, contains more

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<sup>17</sup> The pseudonym Satoshi Nakamoto's online article about bitcoins in 2009 is usually counted as the starting signal for the creation of crypto assets, see Söderberg (2018) and Segendorf (2014).

<sup>18</sup> In June 2019, the Libra Association, a consortium led by Facebook, took the initiative for a global stablecoin, see Cicović et al. (2019). One argument was to promote financial inclusion. The World Bank estimates that more than 1.5 billion people are outside of the financial system. For these, it has so far been too difficult and too costly to use services that we in Sweden happily take for granted: having a bank account, being able to pay and, if necessary, to take a loan. This initiative was then renamed Diem and was abandoned in January 2022.

<sup>19</sup> MiCA stands for Markets in Crypto Assets. For more information on MiCA, see [MiCA Regulation](#).

demands on suppliers of services linked to crypto assets. One purpose is to reinforce consumer protection and reduce the risks of market abuse. The proposal also aims to manage the threats to financial stability and the national currencies that might arise if stablecoins were to become more common.

## 4 Conclusions

Financial services infrastructures are under severe pressure to transform. Consumers, businesses and governments expect faster, cheaper and smoother services. The private sector is pushing for the consolidation of various market-owned infrastructures, which we are already seeing at Nordic level. Similarly, the central banks of the eurozone are striving to consolidate their infrastructure and other countries have started to use these systems. We can also see that legislation and standards continue to be harmonized between countries. Strong forces are also pressing for the creation of global payment systems or at least linking the national ones to a better functioning whole. The indications are that this development will continue.

Sweden, which is a small and open economy, has a lot to gain from this if it is done in the right way. Cheaper, faster and smoother payment services make the markets for services and goods more efficient. At the same time, such a development involves new investment and adjustment costs that may be substantial. It is a question of finding a good division of labour between the private and public sectors. The Riksbank, which is responsible for part of the infrastructure, will use the ECB's TIPS platform to offer instant settlement of payments in Swedish krona. The Riksbank has also begun work on preparing to use the ECB's platforms for settlement services for large-value payments between financial institutions and for securities transactions. The purpose of this is to improve the functioning of the Swedish payment markets and financial markets. The long-term goal is that it should be as easy and fast to make a payment abroad as to send e-mail or follow someone on social media.

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