

What should Swedish securities settlement look like in the future?

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Foreword

During its 350-year history, the Riksbank has experienced many major social changes. Historically, the Riksbank has also periodically modified its operations to keep pace with the times when the needs of society and the financial system have changed.

One of the Riksbank's tasks is to promote a safe and efficient payment system. This requires a stable financial system. The financial infrastructure, which constitutes the core of the financial system, is currently in a state of transition. The reasons are partly technological, with faster transactions, for example. But regulatory changes are also taking place, which affect the conditions for financial market infrastructures. An example is new requirements for greater harmonisation within the EU. These changes mean that there is reason to review the Riksbank's role in the area.

This Riksbank Study therefore looks at how Swedish securities settlement should take place in the future. The issue is important for the financial system because the securities market is a central part of it and must function as efficiently as possible. The authors describe what securities settlement is and discuss whether it should be possible in the future to settle securities in Swedish krona on the European Target2-Securities platform. Investigating this requires a deep and detailed analysis. The authors therefore highlight a number of issues that relevant actors – issuers, investors, central securities depositories, banks and the Riksbank – need to analyse in order to be able to come to a decision. It is also necessary for these actors to reason with each other in order to contribute their respective perspectives.

With this Riksbank Study, we wish to invite actors in the Swedish securities market to a dialogue on the future of Swedish securities settlement. The Riksbank proposes that this take place in the form of round-table discussions during the autumn of 2019.

The Executive Board of the Riksbank

Summary

In this Riksbank Study, we highlight the question of how Swedish securities should be settled in the future so that the Swedish securities market continues to be attractive for investors and issuers. The question needs to be asked for several reasons. A structural transformation of the market for services related to the clearing and settlement of securities, known as the post-trade market, is under way within Europe. This market had remained basically unchanged for a long time. The conditions varied in different countries, depending on both different national regulatory frameworks and different processes for the clearing and settlement of securities. National central securities depositories (CSDs) had a monopoly in many cases. There were many barriers to cross-border securities settlement, which made it difficult and expensive to trade securities across borders. The current structural transformation is taking place not only on the legal, but also on the political and technical level. These are described in more detail below. The ongoing changes mean that both the Riksbank and other Swedish actors now need to consider what this signifies for developments in the Swedish securities market.

The European Central Securities Depositories Regulation (CSDR), which came into force in 2014, introduced harmonised requirements for CSDs and opened up the market to competition on equal terms among CSDs in EU Member States. The European platform for securities settlement, Target2-Securities (T2S), has been in production since June 2015, and as of autumn 2018, 21 CSDs in 20 EU Member States are connected to the platform. Up until the autumn of 2018, only securities transactions in euro (EUR) were settled on T2S, but in October 2018, the Danish krone (DKK) became available on the platform for the settlement of Danish securities.

The objective of the European Commission's Capital Markets Union is to create a single capital market in the EU. Efficient and harmonised securities settlement is a key component of a single capital market. Several initiatives are therefore under way to remove barriers to cross-border securities trading, including differences in tax withholding rules and in the treatment of 'corporate actions', such as dividends in different countries.

The Riksbank needs to respond to the structural transformation that is taking place. As a result of its task in the Sveriges Riksbank Act to promote a safe and efficient payment system, the Riksbank has an important role to safeguard financial stability. This includes ensuring that there are safe and efficient systems for payments and securities transactions in central bank money. During the autumn of 2018, the Riksbank has consulted the Swedish market about the possibility of using the Eurosystem's TIPS platform for instant payments in central bank money in Swedish krona (SEK) and in June 2019 the Riksbank decided to take the next step and initiate negotiations with the Eurosystem about the terms of an agreement. The Riksbank is currently investigating whether T2S may also be an alternative in order to safeguard a safe and efficient way for the Riksbank to supply central bank money for securities settlement in SEK in a standardised way to several CSDs. Other actors in the Swedish securities market also need to analyse how they are affected by T2S, both now and in the future. This concerns the Swedish CSD and its participants, consisting of Swedish banks and securities companies, as well as Swedish investors and issuers. It is now nearly ten years since the Swedish market investigated a possible Swedish connection to T2S. It is now time to do this again, bearing in mind the ongoing European structural transformation in the securities market.

1. What should Swedish securities settlement look like in the future?

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Introduction

A structural transformation of securities trading is currently under way in Sweden and internationally.² Within the EU, a number of different projects and initiatives are ongoing aimed at increasing harmonisation and integration of capital markets and financial infrastructure systems for EU Member States. The aim of these initiatives is to improve both the conditions for growth and security and efficiency in the financial system. Even though Sweden has not joined the euro, we have close financial and economic links to the EU. The initiatives in the EU are also open to non-euro countries and in Sweden and we therefore need to come to a decision on how to respond to these projects and initiatives.

As far as Sweden is concerned, this poses several questions about how Swedish securities settlement should be developed in the future. Should we join in the European integration and harmonisation? If not, how should we enable continued safe and efficient securities settlement in SEK which is still fully interoperable with the rest of Europe? How can we avoid Sweden being marginalised and becoming an odd market with divergent processes and thus risk both higher costs and declining interest from foreign investors in the long run? How can we ensure that Swedish investors and issuers can continue to access capital and investment outside Sweden's borders in the future?

The Riksbank Study is about how the current model for settlement of Swedish securities should be developed in relation to the single European platform for securities settlement, Target2-Securities (T2S). The Swedish securities market analysed a possible Swedish connection to T2S in 2010–2011. At that time, the T2S project was in its infancy and although the Swedish market adopted a cautiously positive position, it nevertheless decided that there was insufficient reason to advocate the settlement of Swedish securities on T2S. The reasons included the initial costs and uncertainty as to whether T2S would be realised, as it was only at the project stage at that time. The Riksbank complied with the will of the market and therefore decided in 2012 not to connect the Swedish krona to T2S. However, conditions have changed since then. It is therefore appropriate to revisit the issue of a possible Swedish connection to T2S. This requires all the parties involved to perform an in-depth analysis of the issues that are relevant for them.

In the study, we describe what securities settlement is, its long-term trends and the Riksbank's role. Next, we provide some background to T2S, describe the effects for the markets that have joined and discuss potential future effects. Finally, we highlight a number of important questions that require further examination in order to clarify what a potential Swedish position might look like. We cannot deal with all issues comprehensively in this study, but our hope is that it will spark a broader analysis and discussion that can help form a common vision for how Swedish securities should be settled in the future.

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² For more about this, see Sveriges Riksbank (2019), Financial infrastructure undergoing technological change.

2. Securities settlement now and in the future

Here, we provide a description of how securities settlement and the Swedish market for it work.

What is securities settlement?

Just like any other form of trade, trading with securities – such as equities and bonds – involves the seller being paid while the buyer receives ownership of what has been purchased.³ This can be expressed as two flows in a securities transaction going in opposite directions: the payment flow going to the seller and the securities flow (transfer of ownership) going to the buyer. Once both these flows have been executed, the securities transaction has been settled. The day when the buyer and seller agree to enter into a transaction is called the trade date. The day when the transaction is carried out is called the settlement date and occurs two days after the trade date. There is a risk for both buyer and seller that the other party does not perform their part of the transaction. One way of reducing this risk is a “delivery-versus-payment” or DvP. This involves payment and ownership transfer being performed simultaneously to eradicate the risk of either party not receiving their part of the transaction.

For such a transaction to take place, both accounts from which the payment can be made and a system for registering and transferring the ownership of securities are needed. Organisations that supply such systems are called central securities depositories (CSDs) and are a type of financial infrastructure.⁴ In the CSD, the buyer’s and seller’s transactions are matched, which involves checking the details of the security to be traded, how many, the nominal amount, settlement and trade date. On the settlement date, the CSD verifies that the seller can deliver the securities and that the buyer can pay. After that, the transaction is settled by the money being transferred and the securities changing owner.

There is currently only one CSD in Sweden, Euroclear Sweden. Euroclear has been Sweden’s CSD since 1971 and since 2008 has been part of a group owned by the Belgian company Euroclear SA/NV (ESA), which owns seven CSDs in Europe.⁵ Up until 1999, Euroclear Sweden, then called VPC AB, had a monopoly to act as CSD in Sweden. When this monopoly was discontinued by law, Euroclear Sweden nevertheless continued in practice to enjoy a monopoly in the Swedish market. However, the CSD market has been opened up to competition on equal terms as a result of the introduction of a uniform regulatory framework via mutual EU framework (see more on this in the section on how the setting of securities settlement is changing). Nowadays, Euroclear Sweden outsources its data centres to the parent company in Belgium, which in practice means that some of its operations are carried out outside Sweden’s borders. Every day, Euroclear Sweden settles an average of 56,000 equity transactions and 1,400 transactions in debt securities to an average value of SEK 500 billion, SEK 450 billion of which are in debt securities.⁶ Euroclear Sweden’s system for settlement is open daily between 07.00 and 17.00. Settlement is carried out in “batches”⁷ five times a day,

³For a more detailed description, see Sveriges Riksbank (2016), “Den svenska finansmarknaden”, s. 92–93.

⁴Financial infrastructures are companies or systems that enable the settlement of financial transactions. Examples of financial infrastructures in Sweden are the Riksbank’s system for large-value payments, RIX, the Euroclear Sweden CSD, Bankgirot’s system for retail payments and Nasdaq Clearing’s system for the clearing of derivatives and repos.

⁵The Euroclear Group includes CSDs in Sweden, Finland, United Kingdom, Belgium, France, the Netherlands and the international CSD Euroclear Bank in Belgium.

⁶Source: Euroclear Sweden.

⁷Batches are scheduled rounds of settlements in the system. Euroclear also offers instant settlement, known as RTGS (real-time gross settlement) transactions. The process for this is manual, however, and is used very infrequently.

between 07.00 and 14.00⁸. There are a number of processes in the system that increase efficiency of the settlement procedure by reducing the need for liquidity and securities. For example, the system enables several transactions to be settled simultaneously, and purchase and sale transactions to offset one another. Euroclear Sweden mainly settles transactions in SEK, but also offers settlement in EUR and is planning to also offer settlement in Danish krone (DKK) in the near future.

Apart from securities settlement, CSDs can also perform several other services⁹ related to the trading and ownership of securities. These include keeping registers of who owns securities and of enabling issuers to issue new securities. They may also include deducting tax from dividends before they are disbursed to shareholders and forwarding the amount to the tax authorities, and managing events related to the ownership of securities that entail a right for the owner, known as “corporate actions”. Examples of these are dividends, offers related to shares such as new issues, take-over bids, stock splits and events related to debt securities such as interest payments and principal payments.

The Riksbank’s role in securities settlement

Securities settlement is very important for the functioning of the financial system. For this reason, the central bank in a country is virtually always involved in securities settlement. The main reason for this is that the central bank helps to reduce the risks associated with settlement by offering the parties settlement in central bank money, and hence also in the financial system as a whole. Central bank money is a claim on a central bank, for example the Riksbank, and can be used for settlement purposes. The account from which the payment in the securities transaction is drawn, known as the payment account, is thus an account at the central bank containing money issued by the central bank. The reason why it is considered safer for money used for settlement to be in a central bank account has to do with a central bank’s special function in the national economy. As a central bank can always create money in the country’s currency, it can always fulfil its commitments in domestic currency. This means that a claim on a central bank, in this case money in an account that is to be used as payment in a securities transaction, always retains its value and is therefore a risk-free exposure. It is therefore said that the credit risk associated with central bank money is zero.

Another risk is the “liquidity risk”, which arises in the event of an actor perhaps not having sufficient liquid funds to be able to pay at the right moment. This risk can be avoided by having an account at the central bank. There, an actor can borrow liquidity during the day from the central bank against collateral in order to make its transactions. This means that central bank money also minimises the liquidity risk. Furthermore, being able to borrow liquidity during the day from the central bank makes securities settlement more efficient. Ensuring that the accounts for settlement are at the central bank, and that settlement therefore takes place in central bank money, reduces the total risk in the financial system. It is also possible to conduct settlement in private or “commercial” money. But as commercial money lacks the risk-minimising properties of central bank money, the international Principles for Financial Market Infrastructures (PFMI)¹⁰ state that a system or company conducting the settlement of payments and financial assets should do so in central bank money whenever possible.¹¹ The principle

⁸An additional settlement batch is performed at 17.00, but this is only free-of-payment transactions. The aim of such a transaction can, for example, be to move securities between a participant’s own security accounts.

⁹See CSDR, Regulation EU no 909/2014 on improving securities settlement in the EU and on central securities depositories, Annex, sections A, B and C for a description of the services a CSD may perform.

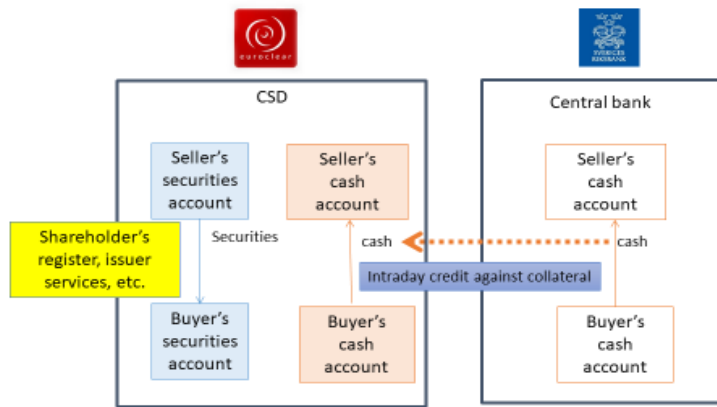
¹⁰The PFMI have been drafted by the Committee of Payments and Market Infrastructures, which is part of the Bank for International Settlements, the central banks’ bank, in cooperation with IOSCO.

¹¹See CPMI/IOSCO (2012), Principles for Financial Market Infrastructures, p. 67

of settlement in central bank money is also enshrined in European law for certain types of financial infrastructure systems, such as CSDs and central counterparties.¹²

The central bank can therefore help reduce the financial risks inherent in securities settlement and increase efficiency in liquidity management. Exactly how this is organised differs from country to country. In Sweden, an *integrated model* is used, which means that the payment accounts, i.e. the central bank accounts, are fully integrated¹³ in the CSD's system for securities settlement. To make this possible, the Riksbank has an agreement with the Swedish CSD Euroclear Sweden that they must administrate central bank accounts in their system for securities settlement. The illustration below shows a sketch of the model. This integrated model is very efficient and entails lower risk than a model in which the settlement of the securities flow and the payment flow occur in different systems.

Figure 1. Overview of how settlement in Euroclear Sweden currently works.



The illustration shows a simplified sketch of the current model with integrated central bank accounts in Euroclear Sweden's system. Euroclear Sweden administrates the central bank accounts in its system, in which securities settlement is conducted in securities accounts and central bank accounts. Some participants in Euroclear Sweden have access to intraday credit from the Riksbank against collateral in securities pledged for this purpose to the Riksbank in Euroclear Sweden's system. The yellow box indicates that Euroclear Sweden also performs other services related to securities, in addition to settlement.

But there are other ways of ensuring that settlement can take place in central bank money. For example, in the United Kingdom, an *interfaced model* is applied. In this case, the payment account is in the central bank's system and the securities account is in the CSD's system. The CSD then continuously sends transactions to the central bank for settlement.¹⁴

Securities settlement in transformation

Minimising the risks by use of central bank money and delivery-versus-payment, which we have described above, are more or less timeless properties in the model for securities settlement and will remain for a long time to come. On the other hand, the world at large is changing in a way that presents the Swedish securities market with a number of

¹²CSDR, EU Regulation No 909/2014 on improving securities settlement in the EU and on central securities depositories, article 40.1. EMIR, EU Regulation No 648/2012 on OTC derivatives, central counterparties and trade repositories, article 50.

¹³The fact that the payment accounts are integrated means that both the payment account and the securities account are in the same system: the CSD's system for the settlement of securities. As a result, there is no risk for operational problems in the contact between the two systems, which would have been the case if the accounts had been in different systems. The payment account in the CSD's system is a mirroring of the payment account in the Riksbank's RIX system.

¹⁴For more information about settlement in central bank money, see CPMI (2003), The role of central bank money in payment systems.

important choices. There are essentially three general changes that are contributing to developments.

Technical development

First, technical changes are occurring which, in combination with changed market behaviours, are creating considerable pressure for adjustment. Faster information and communication technology is making it possible to perform financial transactions more rapidly and during a greater part of the day and night. It is also possible to automate stages in the handling of financial transactions to a greater extent, stages that were previously done manually. At the same time, this means that users, both private individuals and institutional users, are placing higher demands and expectations on the systems that manage financial transactions. There is also new experimental technology, especially Distributed Ledger Technology (DLT), the most well-known example of which is blockchain. Several experiments are currently under way in the financial market, which could potentially lead to this technology becoming established in the future.¹⁵ In general, therefore, comprehensive technical change is currently taking place in the financial market which also affects the securities market. T2S is in itself an example of a technical change as a result of the development of a new type of infrastructure that brings together existing infrastructures and actors and opens up new ways for these to integrate with each other, albeit not based on DLT.

New laws

Second, new regulations have been introduced. The most important regulation for securities settlement is the European Central Securities Depositories Regulation (CSDR) which entered into force in 2014. CSDR aims to improve securities settlement in Europe, and introduce harmonised rules for CSDs in the EU while simultaneously opening up to competition between them on equal terms. Some parts of the regulation have already been introduced while other parts will start to be applied over the next few years. A CSD authorised¹⁶ under the CSDR may operate anywhere in the EU. The regulation also introduces a number of new rules aimed at improving settlement efficiency, i.e. increasing the share of securities transactions settled on the day intended, i.a. by means of requirements for penalty charges in the event of late settlement.¹⁷ Standardised requirements concerning the processes related to settlement have also been introduced. One such requirement is that the settlement of a securities transaction must take place no later than two days¹⁸ after the trade date and that securities registered at a CSD shall only exist in “dematerialised”¹⁹ form, i.e. only in digital form and not in paper format.

Political initiatives

Third, there are political initiatives such as the European Commission’s Capital Markets Union, CMU. The CMU is an action plan to create an internal market for capital throughout the EU, adopted by the European Commission in September 2015. Its aim is

¹⁵For example, the Australian stock exchange, ASX, is carrying out a project to replace the system for settling equity transactions, CHES, with a new system based on DLT. Another example is Deutsche Börse and Commerzbank, who have recently succeeded in settling a securities transaction using DLT. For more on this, see ASX (2019), “CHES Replacement”, and Leaprate (2019), “Deutsche Börse and Commerzbank complete first securities settlement on blockchain”.

¹⁶All the EU’s CSDs must apply for authorisation to conduct operations in accordance with the requirements in the CSDR. In Sweden, it is the Swedish FSA Finansinspektionen that handles the application for such authorisation.

¹⁷Delays occur in the delivery of securities. The settlement ratio is measured, which indicates the proportion of transactions settled on the day intended. A high settlement ratio is important in order for the market to be efficient. The settlement ratio in the Swedish market has been high (close to 100 per cent) for a long time, but for the last few years, there has been a clear downward trend in the settlement ratio primarily in equities in the Swedish CSD. The main causes of this lie with a number of participants that are not complying to a sufficiently high degree with the requirements to guarantee that they have the capacity to deliver securities on the day intended. When the new CSDR rules aimed at increasing the settlement ratio enter into force in the autumn of 2020, the settlement ratio can be expected to rise.

¹⁸Prior to the CSDR, settlement was done three days after the trade date in Sweden and in many other European markets.

¹⁹Dematerialised means that the security is in electronic form, in contrast to physical form. In the Swedish CSD, securities have been exclusively in dematerialised form since the end of the 1980s. However, there are still some markets in Europe where securities still exist in physical form.

to increase the scope for cross-border market funding by creating an internal market for capital in the EU where investors can invest across borders unhindered, and companies can obtain capital from a number of different sources, regardless of where in the EU they are located. This will be achieved by, for example, eradicating barriers to cross-border investments in the EU that prevent companies from gaining access to funding. EU companies are heavily dependent on funding from banks and relatively less dependent on capital markets, unlike in the United States, where capital markets are responsible for a significantly greater share of corporate funding. The CMU is expected to lead to an increase in market funding in the EU as well.

The aim of the CMU is also to contribute to a more stable financial system, by spreading financial risk among several different funding sources and companies. This will make investors less vulnerable to problems in the banking system. The action plan²⁰ from 2015 contains over 30 initiatives that constitute the building blocks for creating the necessary conditions for an integrated capital market in the EU by 2019. In July 2017, the Commission published an update of how far the work on the action plan had progressed, and also added new measures to the list, including measures related to the rapid technical development. As of mid-March 2019, the Commission, Council and Parliament had agreed on ten out of thirteen legislative proposals²¹, three of which have been implemented in law. Important points in the Commission's action plan aim to rectify the identified barriers to cross-border securities trading, for example in the field of taxation, and address legal issues relating to investor compensation.

The political initiative aimed at harmonising systems in EU Member States also involves the creation of new financial infrastructure. The euro countries' joint monetary policy authority, the Eurosystem, which consists of the European Central Bank (ECB) and national central banks in the euro countries, has developed and operates several systems for payments and securities settlement in the eurozone. The Eurosystem is also actively developing and adjusting its systems to future requirements and new technology. The system for large-value payments, Target2, which is equivalent to the Riksbank's RIX system and has existed for over a decade, is set to be modernised and integrated with the same technical platforms used for T2S. TIPS²², the platform for instant payments, has been recently launched. The Eurosystem is also developing a single platform for managing collateral for central bank credit, called ECMS (Eurosystem Collateral Management System), which will replace national systems currently operated by the various euro countries' central banks. The changes are aimed at achieving greater efficiency and economies of scale, not only in the processes for payments and liquidity management for the Eurosystem's various services, but also in the actual operation and development of the systems. There are naturally many advantages in gathering developmental and operational system skills in one place. But it is also a question of managing risk more effectively, by safeguarding the substantial investment in the required skills, routines and technical protection.

Should Sweden join in?

Overall, these ongoing global changes signify a clear development towards harmonisation for actors in EU securities markets. The changes affect CSDs as well as their participants (banks and securities companies), issuers and investors. The Swedish market is now faced with a choice with respect to the extent to which the Swedish securities market should join in European integration and harmonisation, and at what cost? Swedish market participants need to choose a future path. This includes deciding how to respond to the fact that most European securities settlement takes place on T2S.

²⁰European Commission (2015), Action Plan for a Capital Markets Union.

²¹European Commission (2019), Capital Markets Union: progress on building a Single Market for capital for a strong Economic and Monetary Union.

²²Target Instant Payment Settlement.

Although securities settlement is only one of many factors required for an efficient securities market, the ongoing major global changes mean that the Riksbank and other market participants involved in securities settlement need to form an opinion on the future of Swedish securities settlement. They will also need to come to a decision on a number of issues that we will discuss later in this Riksbank Study, even though the detailed issues should be subordinate to an overarching vision of what securities settlement should look like in the future.

3. Vision for securities settlement in SEK

Here we describe what could be perceived as an uncontroversial vision of which qualities the future market for securities settlement in SEK ought to have.

The overall vision: Attractive market for investors and issuers

Swedish banks, mortgage lending companies and non-financial corporations are currently dependent to a large degree on funding via foreign capital markets, primarily in Europe. During the past five years²³, Swedish banks and mortgage lending companies, for instance, have issued so-called covered bonds in between 58 and 73²⁴ per cent foreign currency per year and the remainder in SEK. Most of the issues in foreign currency have been in EUR, followed by US dollars (USD) and British pounds (GBP). Securities known as medium term notes (MTN), which are issued regularly by different types of Swedish companies, have had a relatively large share of the issue value in foreign currency during the same period of time and amounted to between 29 and 42 per cent a year. Corporate bonds²⁵ issued by Swedish companies have an annual allocation of between 75 and 82²⁶ per cent in foreign currency and the remainder in SEK. Here, too, EUR is the largest foreign currency, followed by USD and GBP. Issues in SEK are largely made through the Swedish CSD, and issues in foreign currency are usually made through one of the international CSDs, Euroclear Bank in Belgium or Clearstream Bank in Luxembourg.

The Swedish securities market is the largest in the Nordic region and also has a considerable share of foreign investors. Foreign investors hold around 40²⁷ per cent of Swedish equity and an estimated 25²⁸ per cent of all debt securities in the Swedish CSD, Euroclear Sweden.

The vision for future Swedish securities settlement can be summarised as it being important to ensure that Sweden continues to have an attractive, safe and efficient securities market that contributes to economic growth. It is therefore important that Swedish investors, issuers and other parties concerned in the securities market have the same opportunities and conditions as the rest of the EU with regard to access to cross-border capital markets. Attaining this requires several things, such as high efficiency, harmonised processes and regulations and a high level of security. In the following section, we describe what these different things entail.

A smoothly functioning capital market promotes economic growth, by ensuring that those who need to borrow capital for investment can do so in a safe and efficient way at a reasonable cost. In the same way, those who want to lend money can obtain a good return on their capital. The securities market's ultimate interested parties are therefore investors and issuers, that is, households and companies, municipalities and regions, and so on. In addition to them, there are several other actors that are active and perform services in different parts of the capital markets, such as marketplaces and stock exchanges, custodian banks, investment fund companies, asset managers, CSDs, central counterparties, and so on.

Securities settlement is one part of the long chain of events that occurs in the trading of securities (known as the post-trade market). There are many factors that are

²³2014–2018.

²⁴Source: Dealogic.

²⁵Corporate bonds of investment grade.

²⁶Source: Dealogic.

²⁷Source: Euroclear Sweden.

²⁸For debt securities, it is more difficult to find information on the percentage of foreign holdings in the Euroclear Sweden CSD, as the majority of the holdings are registered in omnibus accounts, that is, they are held in a securities account in the custodian bank's name, which the bank holds on behalf of its customers. The figure is therefore an estimate based on the Swedish securities database SVDB and the portfolio investments listed in the balance of payments.

important in making the Swedish securities market attractive. However, in this study we focus on securities settlement and related processes. It is very important that all of the stages of securities trading take place in an efficient and safe manner, so that confidence is maintained in the functioning of the capital markets, and also for financial stability. But above all, it is important that the Swedish securities market continues to be attractive to both Swedish and foreign investors and issuers.

In the following section, we describe the different parts of the vision and why they are important.

Efficient securities settlement involves several factors

Efficiency entails securities settlement being carried out in a cost-efficient manner. But it also means that it should be possible to carry out a large number of transactions during as much of the day and night as possible, and preferably in real time. Doing this requires functions that, in various ways, prevent problems or stoppages arising, for instance, by dividing up large transactions into smaller parts that are settled in stages or that a party's purchases and sales of the same security are settled at the same time. It also requires functions that optimise the liquidity requirement in settlement, such as automatic pledging to the Riksbank for intraday credit, which already exists today. Efficiency also involves ensuring the appropriate processes and routines are in place for the operation and development of technical systems, that risks are managed properly and that there is good security and resilience to cyber threats, for instance. It also involves flexibility to adapt and develop new services quickly in line with actors' requirements and expectations. By gathering together resources and skills in various different fields, economies of scale and thereby both a high level of efficiency and security can be attained.

Another aspect of efficiency with regard to securities settlement is that securities transactions should be settled on the date agreed by the parties making the transaction. This may sound self-evident, but transactions are sometimes delayed, which creates costs for both the buyer and the seller as the seller does not receive payment on the right date and the buyer does not gain access to the security it has bought on the right date. One concept used in this context is settlement ratio, that is, how large a percentage of the agreed securities transactions are settled on the right date. A well-functioning securities market should have a very high settlement ratio.

Another aspect of efficiency is that it should be as simple to settle securities within a market as between several markets. The possibility to settle both a purchase from one counterparty and the sale of the same security on to another counterparty on the same date, known as "back-to-back" transactions, is another example of a high level of efficiency.

Harmonisation and standardisation are driving developments

Harmonisation and standardisation are needed to be able to attain economies of scale, and are also important components for efficiency and so that competing services or actors can emerge. For Sweden to harmonise and standardise in relation to Europe means that processes for both securities settlement and other events concerning trade and ownership of securities shall be the same as the processes agreed on in Europe, or as similar to them as possible. Harmonisation is a necessary condition for being able to take part in and benefit from future cross-border developments in the EU's securities market. But, as with all other harmonisation, a trade-off arises here between a possible need for tailor-made, national solutions and the profits if Member States participate in the EU's single market on equal terms. Of course, there can be short-term benefits for a market in "doing things its own way", but in the long run it is difficult to see that Swedish

investors and issuers benefit from Swedish actors' processes for securities deviating from the European standard, as it makes it more difficult for foreign companies to compete on the same terms as Swedish companies in Sweden. It is important that Swedish actors take part in the forums and contexts where standards are defined to be able to influence the design.

High level of security is necessary

It must be possible to rely on the processes for securities settlement functioning and the risk of disruptions, theft or fraud being minimised. The infrastructure for securities settlement therefore needs, as a result of its systemic importance, to have very good protective security, including protection against cyber threat. Cyber threat is currently considered to be one of the largest operational risks to actors in the financial system.²⁹ There are also aspects related to security that concern crisis preparedness. In this context, it can be discussed whether it is important for Sweden, for reasons of crisis preparedness, to have national systems within the Swedish borders for payments and securities settlement. However, it is already the case that the financial infrastructure and financial actors are to a great extent interlinked and more international than national. A high level of security is therefore not necessarily the same thing as Swedish ownership. For the Riksbank to be able to use suppliers of infrastructure systems outside of Sweden, they must have high levels of protective security, which entails a number of obligations of a formal and practical nature for both the Riksbank and the foreign supplier. There can be both advantages and disadvantages with a critical infrastructure being located abroad. For instance, this can mean that Swedish authorities have poorer physical access to the infrastructure system abroad. On the other hand, it can be seen as a form of risk diversification that some parts of the infrastructure critical to Sweden are located abroad, as they then would not be affected by a disruption in Sweden.

The Swedish market needs to come to a decision

To avoid the risk of the Swedish securities market becoming marginalised and less attractive to European actors or of Swedish investors not having access to new forms of European saving, it is important that the Swedish securities market develops in line with the rest of Europe. The forms for how Swedish securities are settled therefore need to be developed to ensure that settlement can continue to take place as efficiently and safely as possible and at the lowest possible cost. But an adjustment to new standards and new ways of doing things takes time. It is therefore extremely important that actors in the Swedish securities market analyse as soon as possible which path should be taken to enable this development.

One possible way forward for securities settlement in SEK is the Eurosystem's T2S platform. T2S comprises an important step towards creating a fully harmonised and integrated European securities market, where issuers and investors over the whole of Europe can reach one another. The market also needs to discuss how the conditions for the Swedish securities market will change if T2S's full potential for cross-border securities settlement is realised in five to ten years' time.

²⁹See Sveriges Riksbank (2019), *Finansiell stabilitetsrapport 2019:1*, p. 5, 9.

4. T2S: A European platform for securities settlement

Here we give a description of T2S, followed by potential issues that actors in the securities settlement market, including the Riksbank, will need to analyse.

T2S was created to facilitate cross-border securities trading

The European securities markets have historically been national, with different national regulatory frameworks, routines and processes. The infrastructure for settlement has therefore been built up to enable trading in securities within the national borders. This means that both technology and the legal framework for settlement have primarily been aimed at domestic securities trading. Prior to T2S, the market for securities settlement in the EU was therefore very fragmented and it was much more expensive and more complicated to carry out securities trading across borders than within a country. There was a central securities depository in each country that in principle had a monopoly position, and different countries applied different regulations and routines for securities settlement.

At the end of the 1990s, the European Commission therefore appointed a group of experts called the Giovannini Group to investigate the organisation of cross-border clearing and settlement of securities across borders in the EU. The group then identified the main barriers to efficient, cross-border securities settlement in the EU, known as the “Giovannini barriers” in a report published in 2001. The group identified fifteen barriers, which were divided up into three categories:

1. barriers related to differences in national market practice and technical requirements
2. barriers related to national differences in tax regulations
3. barriers related to legal safety for finality, pledging and so on.

In a second report published in 2003, the group put forward proposals for measures to remove the barriers and pointed to the institutions that were expected to take responsibility for this, including central banks, the European Central Securities Depositories Association (ECSDA), the European Securities and Markets Authority (ESMA), national governments and other actors in the securities market. However, a few years after the publication of the second Giovannini report, nothing had been done to remove the barriers. The European Central Bank then launched the idea of creating a joint platform for insourcing securities settlement, to force a harmonisation between the countries in the EU. In 2008 the project to build T2S was started and the system has been in operation since June 2015. From the start and up until the present day, 21 central securities depositories in 20 EU countries have joined T2S.

How does T2S work?

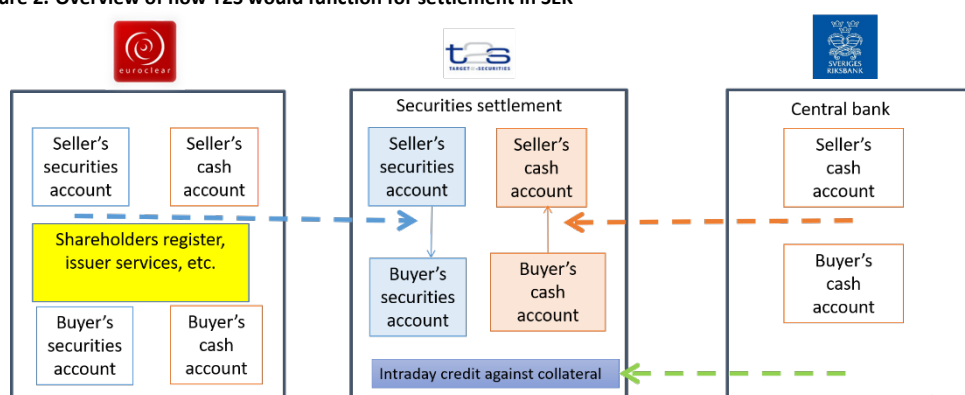
T2S is the European Central Bank’s platform for securities settlement in central bank money and through delivery-versus-payment.³⁰ It is run and developed by the central banks in France, Germany, Italy and Spain – known as the 4CB. T2S has functions for settling in several currencies. At present, transactions are settled in EUR and Danish krone (DKK). The T2S settlement day, that is the time period every day when settlement takes place, runs from 18.45 to 18.00 the next weekday. The system is thus open almost

³⁰Simultaneous settlement of the payment and securities flow of a securities transaction is used to eliminate settlement risk, that is, the risk of supplying either payment or securities but the counterparty defaulting and not being able to supply the other leg of the securities transaction.

24 hours a day, with a break of two hours between 03.00 and 05.00 for technical maintenance. Settlement is in real time during the day and in scheduled settlement batches during the night. On T2S, around 500,000 securities transactions are settled every day³¹ at a value of more than EUR 920 billion.

T2S supplies a single technical platform where all member CSDs carry out their securities settlement. For a market to join T2S, its CSD must outsource its function for securities settlement and some account holding and administration of securities accounts to T2S. The CSD retains other services³² related to securities and still has its own regulatory framework and agreements with its own participants. This means that some of what CSDs normally do is performed on T2S, namely the securities settlement itself. In the same way, the national central bank outsources the central bank accounts in its currency to T2S, to enable settlement of the payment flow in the securities settlement in central bank money.

Figure 2. Overview of how T2S would function for settlement in SEK



The picture shows a simplified sketch of how settlement in Sweden might take place if it was transferred to T2S. The CSD would then outsource the securities accounts and the function for securities settlement to T2S and the central bank would do the same with the central bank accounts. Settlement takes place on the T2S platform. The yellow box shows that other services related to securities are still managed by the CSD.

One of the aims of T2S is a high level of efficiency in securities settlement. A high level of efficiency here concerns settlement taking place quickly, safely and with as little use of liquidity as possible, without the transaction being queued or delayed. Attaining this involves the use, for instance, of simultaneous settlement of long chains of securities transactions and the need for liquidity is optimised by an incoming payment for a sales transaction being used as payment for a purchase transaction. T2S is open for settlement most of the day and night, which contributes to a high level of efficiency. But T2S is also equipped with several technical functions to raise efficiency. T2S, like many other settlement systems, has functions to optimise the liquidity need by automatic pledging for intraday credit.³³ There is also the possibility to divide up securities transactions into smaller parts to enable the settlement of at least part of the transaction in cases where there are not enough securities to settle the entire transaction at once. Other efficiency aspects of T2S are of an organisational nature. As central banks and CSDs can use the same platform, several economies of scale are achieved. For instance, T2S gathers the accounts of its member central banks and CSDs on one single platform, which provides two advantages. First, it enables settlement in central bank money within and between CSDs on the same terms and conditions. This makes it easier for actors in the securities market to move securities between different CSDs, or to gather them in a single CSD. Second, all securities are gathered in one place, which means that the holder

³¹ECB (2019a), Target2-Securities Annual Report 2018.

³²Corporate actions such as dividends, interest and principal payments, account holding and registration, and so on.

³³It is the central bank that has outsourced the administration of the central bank accounts to T2S which provides the intraday credit. The T2S platform has the technical functionality for this.

of the securities can create a single pool of securities. This contributes to a more efficient use of the securities as collateral, which means that less liquidity is needed. A further aspect of efficiency is that resources and skills in operation, development and security are gathered in the Eurosystem and 4CB, which operates T2S.

What has T2S entailed for the markets that have joined?

One of the main reasons behind T2S is harmonisation. The Eurosystem and the T2S participants have been pursuing from the start an extensive harmonisation agenda for processes and standards related to securities. There are thus specific requirements that a market must meet before it joins. After that, there are other requirements that can be met subsequently after the market has joined. The Eurosystem regularly follows up and publishes the extent to which T2S participants meet the requirements for harmonisation. This work is mainly done by the ECB's Advisory Group on Market Infrastructures for Securities and Collateral (AMI-SECO), which consists of representatives of the participants in T2S. There is also a special group, T2S Harmonisation Steering Group, with responsibility for having an overall view of the work on harmonisation. A report³⁴ from November 2017 mapped the percentage of cross-border settlements in the total T2S settlements and found that only around one per cent of the total securities settlement in T2S was cross-border. However, the report identified several explanations for this and felt it was too early to expect effects in this area. One reason was that the statistical measures taken from T2S did not sufficiently capture what cross-border securities settlement entails. For instance, there is no data on cross-border transactions for users taking part in several CSDs in T2S. Their transactions are instead reported as domestic in T2S statistics. Another reason is, according to the ECB³⁵, that the 20 markets that have joined T2S since the start in 2015 have primarily put resources into adapting their technical systems and processes and implementing the actual connection to T2S. Market participants have also needed to employ resources in adapting to new requirements in the CSDR. For example, the Eurosystem has developed a joint function on T2S for dealing with late settlement penalties, which is part of the new CSDR requirements from autumn 2020. Therefore, no major changes in cross-border settlement and the business models for the new business opportunities offered by T2S have yet been seen. But the ECB says that there is clear potential with T2S that has not yet been realised and that major changes in market participants' business models can be expected going forward.

One potential means of increasing efficiency further is to create links between several different CSDs that have joined T2S. Then, actors could choose to store their securities either in the CSD where they were first issued or in another CSD, an "investor" CSD. So far, however, the number of links between CSDs does not seem to have increased. This is probably because it is expensive to establish links, as a CSD must be able to manage corporate actions in securities even in CSDs to which it is linked, which may have other procedures for corporate actions. So far, the handling of corporate actions is still a barrier to cross-border settlement in that it is not yet harmonised among EU countries.³⁶ We will return later on to how this remaining barrier can be solved. However, there are positive effects that have already been realised. Participants that have joined T2S have noted, for example, cost savings as their need for collateral has declined as a result of the opportunity to create a pool of collateral. For instance, banks that are active on several European markets connected to T2S can have a joint liquidity account for all markets and therefore less total liquidity needs to be tied up. Other examples are liquidity savings in securities settlement as a result of the more efficient

³⁴ECB (2017), Cross-border market practice sub-group (XMAP) – report on cross-CSD activity.

³⁵ECB (2019a), Target2-Securities Annual Report 2018.

³⁶See more about the agenda to remove barriers to cross-border securities settlement on pages 28-29 in the section Remaining barriers.

processes and the mechanisms for liquidity saving.³⁷ Having a pool of securities that can be used as collateral gives increased efficiency in the use of collateral and also lower costs, as market participants no longer need to store securities in several places. Previously this was often necessary in order to have access to services with various actors who were not interlinked. Several custodial and settlement services had to be paid for and securities were stored in different places, which meant that they could not then be used as collateral with actors other than those with which they were stored. The T2S function for automatic pledging for settlement, both of securities on account and incoming securities in purchase transactions, and the many settlement batches have led to a reduced need for liquidity for settlement. Both of these effects contribute to cost savings. So far, the savings arising from a pool of collateral are mainly in the markets with EUR as currency. On the other hand, Swedish actors on T2S could attain the same benefits and cost savings as actors in the euro countries if Swedish business models were harmonised with European ones.

The ECB also notes changes in how post-trade services are offered after the introduction of T2S. Intermediaries offering custodial bank services can choose to become direct participants on T2S and offer their customers access to several T2S-connected markets through a single entry point. This is an example of how improving efficiency and restructuring the market can lead to cost savings as one set of intermediaries disappears.

The ECB also points to the cost savings for member countries, as they do not need to develop new functions to meet new demands themselves. One example is the function to manage the CSDR requirement for late payment penalties, which we have already mentioned. This solution is being introduced on T2S and therefore entails a cost saving for the market in total, as there will be one single harmonised solution for twenty markets instead of twenty separate solutions.

Connections to T2S have generally occurred without any major operational disruptions. However, the connection of the Danish krone (DKK) in October 2018 showed that problems can arise. One of the main reasons behind the Danish connection was to ensure a continuing good market and distribution channel for Danish housing bonds to foreign investors. This market is very important for the Danish capital market and amounts to more than DKK 3,500 billion.³⁸ However, many investors in Danish housing bonds are outside of Denmark and the bonds are distributed via the International Central Securities Depository (ICSD³⁹) Euroclear Bank. T2S offers a standardised solution for issuers of Danish housing bonds to reach investors in all of the markets connected to T2S. According to information received, a large Danish issuer of housing bonds has already seen that they have gained new investors since joining, as the holdings of their securities are increasing on T2S at the same time as existing holdings in ICSDs have not declined.

When the Danish market joined T2S, however, several operational problems arose, which led to a large number of unmatched transactions which took several months to resolve. This was due in part to technical problems at the Danish CSD with regard to sending out confirmation of settlement of transactions to participants. They also introduced a new message standard in accordance with the requirements in T2S at the same time as they retained an older non-standardised message standard, which meant that problems arose in translation between participants using different standards. Other problems arose as a result of introducing new market practice, which was interpreted differently by different participants in the market.

³⁷ECB (2018) Ninth T2S Harmonisation progress report.

³⁸Source: Danmarks Nationalbank.

³⁹There are two ICSDs in Europe: Euroclear Bank in Belgium and Clearstream Bank in Luxembourg. Both of these offer settlement of securities in many different currencies. However, this settlement is in commercial money, unlike settlement in normal CSDs.

The problems that arose show that there are considerable operational risks linked to major changes in the market. It is therefore very important to learn from these events if Sweden is to join. Representatives of the Danish market published at the end of May 2019 a report describing the problems that arose and what they had done to resolve them.⁴⁰

What might T2S entail for Swedish issuers and investors?

As we mentioned earlier, banks and, to an increasing extent, non-financial corporations in Sweden tend to finance themselves through securities borrowing, in both SEK and foreign currencies. An integrated securities market in the EU, including a harmonised financial infrastructure such as T2S, could potentially make it easier for issuers and investors to find one another. In other words, it would open up opportunities for Swedish issuers to reach more and new investors outside Sweden. As borrowing in foreign currencies is increasing, it could become increasingly relevant to issuers, the more integration and harmonisation continues, to issue securities in a CSD that is connected to T2S. However, the CSD used to issue is not the only factor that affects where one chooses to issue. There are still several characteristics in national legislation within the EU that comprise barriers to foreign actors issuing Swedish securities, particularly with regard to equities. Some examples of this are different countries' management of corporate actions, different requirements for registration and different laws regarding the withholding of tax on dividends. However, work is under way on removing these remaining barriers to a single capital market. For instance, these barriers are included in the European Commission's action plan for the capital markets union. When Swedish issuers think about what T2S can mean for them, they should look at least five years ahead. It is of course not possible to know now how the market will look then and how far harmonisation may have come, but if the barriers to cross-border securities trading have been removed, then it should be of interest to be able to settle securities in a harmonised and standardised way on a central platform such as T2S. It can also be assumed that investors will begin to demand that the securities they buy have a link to T2S, so they can gather all their securities there and optimise their use of them, for instance as collateral.

When borrowing in SEK, the issuers issue securities in the Swedish CSD, Euroclear Sweden⁴¹, but Swedish issuers of debt securities can today issue securities in foreign currencies outside the Swedish CSD. They then normally issue securities in EUR, USD or GBP in one of the ICSDs, Euroclear Bank⁴² or Clearstream Bank. Settlement in these ICSDs is in commercial money and not in central bank money as in Euroclear Sweden and T2S. Since the introduction of T2S, however, the two ICSDs have launched a project to adapt their business models to T2S and enable settlement of debt securities issued in a currency other than that of the country in which they are issued, so-called Eurobonds, in central bank money on T2S. This can in the long run lead to the entire market for Eurobonds in currencies connected to T2S, which are today issued and settled in commercial money in ICSDs, in the future being settled in central bank money on T2S. This would entail a major change in the market and it is an interesting example of market adaptation and improvement that can follow on from harmonisation and T2S.

For Swedish investors a Swedish connection to T2S and a more harmonised market could therefore mean that access to different forms of securities for saving would be both greater and cheaper. Harmonisation and the increasing competition could also contribute to new savings products becoming available to Swedish investors.

⁴⁰ The Danish National Stakeholder Group (2019), The Danish National Stakeholder Group Evaluation of the Danish market migration to T2S.

⁴¹ A certain share of securities in SEK is also issued in the ICSD Euroclear Bank in Belgium.

⁴² Euroclear Bank is part of the same group as the Swedish CSD Euroclear Sweden.

What opportunities are there to realise T2S potential?

As we mentioned above, T2S has the potential to improve efficiency with regard to the use of securities for pledging and processes for administering securities and so on. However, T2S is a technical platform with harmonised requirements and as such it solves several of the problems identified in the first Giovannini report. On the other hand, several barriers still remain before the positive effects of both the capital markets union and T2S can be realised. Above all, the desired increase in cross-border investment has not been realised and so far only one per cent of settlement in T2S is between participants in different CSDs. The largest part of the settlement is thus carried out as before in the CSD where the security was issued. Several Swedish market participants have also pointed out that they did not think that the benefits of T2S had yet been realised and that there were as yet no benefits for Sweden in joining. However, it is important to emphasise that T2S is part of a larger process to remove the barriers identified in the first Giovannini report. The process of creating a single European capital market is therefore not complete with the introduction of T2S; T2S is part of an ongoing project.

Remaining barriers

The work on removing the remaining barriers to cross-border settlement between markets and CSDs is continuing within the EU. In 2016, the European Commission appointed a new inquiry to map how far this work had come with a new expert group called the European Post Trade Forum (EPTF). The group's report⁴³ was published in May 2017. They came to the conclusion that several barriers had been resolved, including those concerning access to CSDs, finality and different settlement period lengths. On the other hand, they also found both that several barriers remained and that several new had arisen, which concern the development of markets since the beginning of the 2000s. The EPTF report therefore also contained a list of the major remaining barriers and a plan for measures to remove them. The EPTF has flagged some of these as particularly important to remove and we describe below the three that topped their priorities list. What all of them have in common is that they concern the lack of harmonisation between Member States.

First, there are barriers with regard to tax legislation, which differs in different countries and that it is very complicated to manage the tax administration following cross-border investments.⁴⁴ The exact processes also differ from country to country, which further increases the administrative burden. The largest barrier concerns the question of withholding tax, where it can be very difficult for investors to retrieve money drawn as tax in another country. Second, there is a major barrier regarding unclear legal matters and fragmented frameworks between different member states concerning a number of different aspects of securities management. There are, for instance, uncertainties regarding a foreign investor's right of ownership if the security is held by an intermediary in another country and the intermediary goes bankrupt.⁴⁵ This risk makes cross-border securities trading less attractive. Thirdly, there are differences and uncertainties with regard to regulations and management of corporate actions, as we mentioned before. This means, for instance, that there are problems for foreign shareholders to exercise their rights in connection with annual general meetings and dividends. These differences and uncertainties mean that it becomes more risky and more costly to invest in other countries' securities markets.

However, work is being done to increase harmonisation in these areas through a number of different initiatives.⁴⁶ The problem with tax regulation was raised back in

⁴³EPTF (2017), "EPTF Report".

⁴⁴EPTF (2017), pp. 102–109.

⁴⁵EPTF (2017), pp. 84 ff.

⁴⁶For a review, see EPTF (2017).

2015 by the EU Member States council for financial ministers, ECOFIN, and thereafter in the European Commission's expert report on how the realisation of the capital markets union can be speeded up.⁴⁷ EU Member States have the right to determine the design of their own tax systems and harmonisation therefore requires a large consensus among the countries. The European Commission has therefore compiled a voluntary code of conduct for harmonisation of regulations regarding withholding tax⁴⁸ and is encouraging Member States to adopt this. Another example is the work on safeguarding investors' rights in connection with corporate actions. There are already market standards for corporate actions and the task now is to ensure that they are implemented. T2S AMI-SeCo and T2S Harmonisation Steering Group are working to promote and oversee their implementation. During 2019, a new evaluation will be published of the progress made and what barriers have been noted.

To summarise, the factors that have prevented T2S from realising its full potential have been known for a long time and there are several initiatives to remove them. It is therefore fully possible that in five to ten years' time there will be benefits for Sweden in joining T2S that are not available now. If the remaining barriers are removed, new opportunities will open up for a single market. It could therefore be in the best interests of Swedish market participants to take part in the work on harmonisation, to be able to influence the design of joint standards and adapt the Swedish market to new conditions.

⁴⁷ European Commission, Report from the Commission to the Council and the European Parliament: Accelerating the Capital Markets Union: Addressing national barriers to capital flows, 2017.

⁴⁸European Commission (2017), Code of Conduct on Withholding Tax.

5. Questions for future dialogue

The choice of Sweden's approach to T2S is a major and important decision that must be preceded by careful analysis. In this section, we therefore present some questions that the Swedish market needs to address before it can take such a decision.

What could the model for Swedish securities settlement look like in five to ten years?

We see a development in which the euro countries and Denmark have chosen to move towards a more cross-border model for securities settlement. The Swedish market here faces the alternative of either continuing like now, with a national model, moving towards a more regional solution, or joining the European solution. The matter needs to be discussed to identify which alternatives exist and which would have the greatest long-term advantages for the Swedish economy and the financial system.

When Swedish actors in the securities market, including the Riksbank, analyse the question of T2S, their calculations need to include the effects that Sweden joining T2S can be expected to have in a longer perspective, at least five years ahead. In which way could increased harmonisation with the rest of Europe affect the Swedish market? Will there be new or expanded business opportunities once they have the opportunity to reach more customers in the whole of Europe? This needs to be analysed and placed in relation to the cost of joining and settling on T2S.

In the same way, the Swedish market needs to analyse what it would mean to stand outside an integrated European infrastructure for securities settlement. Would the Swedish market then risk becoming isolated and less attractive to foreign investors? Is there a risk of reduced incomes and lower efficiency? Is there a risk of Swedish issuers and investors not having the opportunity to participate in a larger single European capital market? And, if the Swedish securities market is neither connected to T2S nor developed and harmonised in step with the rest of Europe, will there then be a risk of investors and issuers choosing other markets that are more standardised, with more negative consequences for the Swedish economy as a result? What is the alternative to Sweden joining T2S?

How high will the costs be and which model for joining is most appropriate?

For participants in the Swedish CSD, Euroclear Sweden, and thereby for their customers, the extra layer in the settlement chain entailed by T2S would initially mean increased costs. It would cost to adjust their systems and processes to T2S, to which transaction fees to T2S can be added. It is costly both in time and financial and human resources to adjust technical systems to T2S, and also requires an adjustment of market standards for such things as communication (to ISO 20022 standards), processes for the treatment of corporate actions and T2S settlement day to T2S standards ahead of joining.

How large this cost will be depends, among other things, on how the Swedish market chooses to join T2S. It is possible to choose either omnibus accounts or individually segregated accounts. The Nordic account model differs from the European model. This is because, in the Nordic area, individually segregated accounts are significantly more common in comparison with the rest of Europe, where omnibus accounts are more common. Consequently, there are significantly more securities accounts in the Swedish CSD than there are in many of the CSDs connected to T2S. In the event of Sweden joining, the Swedish market needs to consider how the process could be executed with

the greatest possible efficiency but also without costs becoming too high, given the account structure of the Swedish securities market. The Swedish market produced several reports⁴⁹ between 2011 and 2015 that examined the account model on T2S and the issues then deemed relevant for the Swedish market. All actors concerned need to review these reports and make a new assessment of the conclusions. The Danish market resembles the Swedish one as regards the number of securities accounts in the CSD. The Swedish market can therefore learn lessons from the solution chosen by the Danish market. For a connection to T2S to be cost-effective for a market, actors in the market would need to develop and adjust their services in line with the new conditions and possibilities entailed by T2S. However, this is a process that takes time and joining T2S would therefore initially involve a cost increase. For it to be economically justifiable, it is thus important that services and models for joining be adjusted to minimise the costs for actors and also enable new business opportunities. This involves reviewing which services would no longer need to be provided by the CSD after it has outsourced settlement to T2S. It also involves all actors reviewing how they do things today and winding up services that can no longer be justified and instead developing new services to improve and streamline the market. T2S is expected to help create the right conditions for increased competition between actors offering services in connection with securities settlement. It will pave the way for a restructuring and development of both the range of services and the way in which services are provided, thereby also increasing opportunities for increased revenues.

T2S is expected to help lower costs for the markets connected to it as a single solution is being developed instead of one solution per market. One example of this is the new solution for managing late payment penalties developed by T2S. All T2S participants benefit from the same solution, which should mean cost savings for them all.

The ECB's pricing⁵⁰ for T2S is based on full cost coverage but without a profit margin. Pricing is the same for all CSDs, regardless of volume. It must also be simple to understand which services cost what, and the prices must be predictable and stable. The price model developed before T2S entered production was based on forecasts of transaction volumes and a period of a number of years to cover the project's costs. However, since the start in June 2015, transaction volumes have not been as high as the ECB had assumed. Consequently, prices were raised in January 2019 to adjust for the lower volumes. At the same time, the period for repaying the project was extended by a number of years. However, costs can be expected to decrease once the project cost has been repaid. The costs remaining will be for new development and operation. A total of fifteen different services will be debited on T2S. These are related to settlement, information management and account services.

Harmonisation – how important is it to be able to affect international standards?

T2S participants are conducting comprehensive work to harmonise market standards within the securities area. This work is being led by T2S AMI-SECO. Every year, they publish a report on the progress of the work. Swedish actors currently have few possibilities to affect the standardisation work being carried out by T2S participants and thus have less influence over the design of future standards in Europe. On the other hand, Swedish participants indirectly take part in these groups through their

⁴⁹Swedish securities dealers association and SWENUG (2011), Report to the T2S Swedish National User Group from its sub-group on account structure. (2013), Report to SWENUG from the WG on CSD accounts and T2S accounts
Swedish securities dealers association (2015), High-level requirements on a CSD platform in Sweden

⁵⁰ECB (2019b), What does it cost to use T2S?

participation in European interest groups such as ECSDA⁵¹ and AFME⁵². Some Swedish actors also directly take part in these groups. The question for Swedish actors is therefore whether, going forward, it is important to be able, as soon as possible, to influence the European standard in a desirable direction.

Which risks need to be investigated?

In all system replacements and market changes, there is a risk that unwanted effects will arise and that the change will lead to a longer or shorter period of operational disruptions. It is therefore important that the Swedish market carefully investigates and prepares for the risks that could arise. If it is decided to join T2S, it will be important for it to be as pure and simple as possible to ensure maximum efficiency and for all affected parties to be involved so they have time to develop and test the solution in good time. This concerns managing both the actual project risk as well as the adjustment risk.

An analysis should also be made of the drawbacks of outsourcing parts of securities settlement to a foreign infrastructure supplier. For example, Sweden could have less influence over the design of the platform, as the Swedish market will become one of many sharing resources. There is also some uncertainty over costs. For example, if volumes do not develop as predicted, costs could be greater.

The question of protective security and the risks of not having a critical infrastructure within Sweden's borders should be examined. However, it should be borne in mind that parts of Sweden's financial infrastructure are already handled overseas.

One further risk that needs to be considered is what will happen if T2S fails to be as expected or lead to the expected effects. In such a case, the Swedish market would have to bear the costs of joining T2S without enjoying its advantages. The effect could then instead be that settlement becomes more expensive overall, with potentially negative consequences for the Swedish securities market as a whole.

How should the Riksbank provide central bank accounts to more CSDs in the future?

The Riksbank provides central bank money for securities settlement by outsourcing the administration of central bank accounts to the Swedish CSD, Euroclear Sweden. So far, there has only been one CSD in Sweden and the Riksbank has therefore previously not needed to come to a decision on how to provide central bank money to several CSDs. However, this could change, as CSDR simplifies competition on equal terms among CSDs in the EU. This means that CSDs in the EU can now freely compete with Swedish CSDs, assuming that they are authorised under CSDR. For this reason, it is possible that the Riksbank, in the near future, will receive a request from a European CSD for access to central bank accounts at the Riksbank so as to become established on the Swedish market. When the Riksbank provides central bank services, it is to be competitively neutral, which is to say all parties fulfilling the requirements are to be offered the Riksbank's services. Consequently, the Riksbank cannot deny this to an actor without good reason. This means that the Riksbank may be forced to come to a decision on how this is to be resolved and whether T2S could, in this case, be a possible solution. We describe this in more detail in the next paragraph.

⁵¹The European Central Securities Depositories Association.

⁵²The Association for Financial Markets in Europe is an interest group that represents major European banks and other participants in European capital markets.

Is the Riksbank prepared to make securities settlement in SEK possible on T2S?

As we mentioned in the paragraph above, the Riksbank may need to come to a decision on how to manage a request from a European CSD wishing to set up on the Swedish market. The arrangement the Riksbank has today for providing central bank accounts for securities settlement is certainly based on a contract between the Riksbank and a commercial actor for the administration of central bank accounts, but this was entered into in a period when, in practice, CSDs had a monopoly. This arrangement works well, but it is not desirable for the Riksbank to sign such agreements with several commercial actors, as this would lead to increased fragmentation of where and how central bank accounts are administered and, consequently, where central bank liquidity is located. For the Riksbank, this would mean central bank accounts being dispersed among several actors. This would entail major risks and lower efficiency both for the Riksbank and for the market as a whole. For the Riksbank's part, the best alternative would therefore be a standardised solution for central bank money that can be offered to all CSDs. Offering central bank money in Swedish kronor via T2S would present such a solution. In the same way as today, T2S also offers an "integrated model" for central bank money, which is to say that the central bank accounts are integrated into the technical system in which securities settlement takes place. However, the Riksbank needs to investigate the question further before it takes a stance, for example on the terms of the agreement between the Riksbank and the Eurosystem.

6. Concluding comments

With this study, the Riksbank wishes to invite all stakeholders in the Swedish securities market to a dialogue on the future. In this study, we have discussed what Swedish securities settlement might look like in the future. However, much work remains to be done in investigating this issue further, both for the Riksbank and other stakeholders. T2S is one conceivable path for Swedish securities settlement and is thereby a central part of such a discussion. However, it is important that all aspects are captured and that all parties contribute with their own investigations of what joining T2S could entail for them.

Sweden must continue to have an attractive, secure and efficient securities market that contributes towards economic growth. For this, we need to develop forms for how Swedish securities are settled and ensure that, going forward, this can take place as efficiently and securely as possible and without any competitive gaps between Swedish and foreign securities. There is a clear parallel with the market for payments, where developments are rapidly moving towards real-time payments around the clock. Securities settlement needs to move hand-in-hand with this development, which is to say towards settlements over as large a part of the day and night as possible, in as close to real time as possible. To achieve this, it is necessary for the Swedish securities market to develop in step with the rest of Europe. This market adjustment will take time. Consequently, it is already high time to start the work of laying the foundations for the future of securities settlement in Sweden.

Glossary

Central bank money: money issued by a central bank.

Clearing: compilation of commitments between two parties. As regards securities, the term clearing occasionally includes all the events taking place once a securities transaction has been entered into between two parties until it is settled and completed.

Corporate actions: Events that may occur in relation to the ownership of securities, for example dividends, the division of equities via what are known as stock splits, offers to subscribe to new shares in new share issues, interest payments, and debt securities reaching maturity.

CSDR: Regulation (EU) 909/2014 on improving securities settlement in the European Union and on central securities depositories.

Custodian bank: a bank that holds and administers securities for its customers. Can also offer related services such as clearing and settlement, as well as securities lending.

Delivery-versus-payment: means that payment for and transfer of ownership of securities purchased is performed simultaneously to eradicate the risk of either party not receiving their part of the transaction.

Dematerialised: electronically registered instead of in a physical form such as a share certificate.

Finality: Means that a transaction is irrevocable and unconditional.

ICSD: International Central Securities Depository

Intermediary: an actor, such as a custodial bank, that provides services such as access to a central platform or a central securities depository. The intermediary is a direct participant and manages its customers' transactions on the platform on its behalf.

Issuer: issuer of securities. Can include states, municipalities or companies.

Message standard: standard for communication between actors in the financial system. For example, ISO 20022 is a message standard that the participants in T2S use to communicate with T2S.

Settlement: execution of financial commitments in money or securities between two parties. For example, a securities transaction is settled by the transfer of the securities by the seller to the buyer, at the same time as the buyer transfers money to the seller.

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