



Financial Infrastructure Report

2015

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■ Foreword

The financial infrastructure consists of Financial Market Infrastructures (FMIs) through which payments are made and payments and transactions with financial instruments are handled. This infrastructure makes it possible for individual households, companies and authorities to make and receive payments in a safe and efficient manner. It also makes it possible to safely and efficiently pay for and deliver equities, fixed income securities and other financial instruments traded on the financial markets.

The financial infrastructure thereby plays a central role in the financial system and is a necessary condition for its functioning. This means that problems arising in the financial infrastructure can have serious and negative consequences for the functions of the financial system, with potentially substantial costs to society as a result. It is thus of great importance for the stability of the financial system that the financial infrastructure functions in a safe and efficient way.

The Riksbank oversees the financial infrastructure with the objective of identifying and analysing the sources of risks and efficiency losses and acts to reduce these. The starting point for this work is the Riksbank's responsibility for safeguarding financial stability. The Financial Infrastructure Report is intended to allow the Riksbank to present its assessment of the stability and efficiency of Sweden's financial infrastructure. The report also describes the starting points for the Riksbank's oversight work and how this is conducted in practice.

The report is aimed at FMIs, the FMIs' participants, authorities in Sweden and abroad, and the Riksdag, the Swedish parliament. By publishing its assessments, the Riksbank wishes to encourage continual improvements to benefit the financial infrastructure and thus the financial stability of Sweden. The report is published once per year and is available from the Riksbank's website, www.riksbank.se. The Report takes into account data available as of 31 March 2015.

Stockholm, 31 March 2015

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■ Abbreviations

BIS – Bank for International Settlements

CPMI – Committee on Payments and Market Infrastructures

CSDR – Central Securities Depositories Regulation

EMIR – European Market Infrastructure Regulation

ESMA – European Securities and Markets Authority

FMI – Financial Market Infrastructure

IOSCO – International Organization of Securities Commissions

OTC – Over the Counter

PFMI – Principles for Financial Market Infrastructures

T2S – Target2-Securities

■ Summary

The Financial Infrastructure Report 2015 is intended to allow the Riksbank to present its assessment of the stability and efficiency of Sweden's financial infrastructure. The report also describes the bases for the Riksbank's oversight work, how it is carried out in practice and which areas the Riksbank will focus on in 2015. The report takes into account developments in the financial infrastructure during 2014 and up to 31 March 2015.

The overall opinion of the Riksbank

The Riksbank considers that the financial infrastructure in Sweden consist of safe and efficient Financial Market Infrastructures (FMIs).^{1, 2} However, there is scope for improvement with regard to both the FMIs themselves, the interdependence of the FMIs and their participants, and the regulations covering the FMIs and their participants. The overall results of the survey of participants made by the Riksbank and Finansinspektionen in autumn 2014 backs up this view.

Below is a presentation of some important measures that have been implemented in the financial infrastructure as well as a number of actions that need to be taken to further improve the safety and efficiency of the financial infrastructure in Sweden. Finally, there is a presentation of three areas the Riksbank will focus its oversight work on during 2015, and which will be followed up in the report published in 2016.

Measures that contribute to increased security and efficiency in the financial infrastructure

- ***Change in the Bankruptcy Act ensures the incorporation of the Settlement Finality Directive into Swedish law for Swedish participants:*** An amendment to the Bankruptcy Act that came into force in March 2015 ensures that an official receiver cannot require that a transfer order, such as a securities transaction or payment, entered into a system by a Swedish participant after a bankruptcy is withdrawn. However, the amendment does not cover the question of what will apply in Swedish law to overseas participants.
- ***All Swedish FMIs have produced recovery plans:*** The international PFMI³ standards require that FMIs have recovery plans. These plans show how FMIs can recover and continue their activities even in a situation where the FMI suffers

¹ The Financial Market Infrastructures (FMIs) referred to here are the Swedish FMIs included in the Riksbank's oversight: The Riksbank's system for account transfers RIX, Euroclear Sweden AB's system for securities settlement (the VPC system), Nasdaq OMX Clearing AB's central counterparty system for financial derivatives, commodity derivatives and repos and Bankgirocentralen BGC AB's system for clearing retail payments.

² See Sveriges Riksbank (2014), "The Swedish Financial Market 2014" for further information on the financial infrastructure in Sweden.

³ The Riksbank bases its oversight of the financial infrastructure on the requirements regarding safety and efficiency stipulated in the international standards issued by the Committee on Payment and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) – "Principles for financial market infrastructures" (PFMI).

serious financial problems. All Swedish FMIs under the oversight of the Riksbank have produced a recovery plan.

- **All of the Swedish FMIs have begun analysing the risks linked to indirect participants:** The international PFMI standards have introduced requirements stipulating that FMIs must be able to identify and manage the risks that indirect participation⁴ gives rise to. All of the FMIs have now begun analyses that are to result in action plans for managing such risks.

Actions that should be taken to further increase the safety and efficiency of the financial infrastructure

- **A resolution framework is needed for financial infrastructure companies:** A resolution procedure is an alternative to bankruptcy and means that a company is reconstructed or liquidated under government control. Such a procedure is being introduced for banks,⁵ but it now needs to be developed and adapted to the activities conducted by FMIs. It is particularly important to have a resolution framework for central counterparties established due to the credit risks they manage.
- **Euroclear Sweden's work on replacing its IT system for securities settlement should be preceded by thorough analysis and planning:** The project to replace Euroclear Finland's securities settlement system suffered problems and delays at an initial stage, which have now been remedied. As a similar system replacement is going to be made in Sweden, Euroclear Sweden should learn from this project. There should also be a thorough and complete analysis of the Swedish market's requirements for functionality in the new system, before the replacement is made. In addition, Euroclear Sweden must manage the new requirements that arise in the form of the new European Regulation CSDR.⁶ This requires an organisation with sufficient resources to manage the major requirements entailed by both the coming system replacement and the new regulations.
- **The operator of the RIX system should actively work on routines and processes to retain a high level of operational reliability:** During 2013 and 2014 there were both major and minor disruptions in the RIX system. Some of the minor disruptions reoccurred due to a failure to adequately observe the processes and routines. This shows that improvements are needed with regard to the routines and processes on which the RIX system is dependent. The Riksbank therefore considers that the operator of the RIX system should strengthen the preventive work by carrying out an overhaul of the existing processes and routines and ensuring they are observed. A natural part of this work should also be to evaluate the level of the availability target and determine how the target should be attained.

⁴ An indirect participant is defined as a financial agent that is not subject to the regulatory framework of the FMI but whose transactions are managed by the FMI by using the possibility of participation via a direct participant.

⁵ Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 on establishing a framework for the recovery and resolution of credit institutions and investment firms.

⁶ Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories.

- **Issuers of bonds with variable coupons should adapt these to negative interest rates:** The Riksbank's expansionary monetary policy has led to a low interest-rate environment in which certain market rates have become negative. The need to adapt the FMIs in the financial infrastructure and the practices on the financial markets as a result of negative interest rates has been limited to date. One exception is the market for bonds with variable coupons, so-called Floating Rate Notes (FRN). When interest rates are low, the coupons on these bonds may become negative, which raises both technical and legal issues. The Riksbank therefore considers it important that every issuer of such bonds should, in close dialogue with Euroclear Sweden, make it clear to other market participants how these bonds are adapted to a negative interest-rate environment.

Focus areas for the Riksbank's oversight work in 2015

- **Evaluation of recovery plans:** All four FMIs under the Riksbank's oversight have produced recovery plans in 2014. These plans show how FMIs can recover and continue their activities even in a situation where the company suffers serious financial problems. In October 2014, CPMI-IOSCO published guidelines with regard to the contents of such plans. For this reason, the Riksbank, together with Finansinspektionen (the Swedish financial supervisory authority), will focus on analysing and assessing how well the Swedish FMIs' recovery plans follow these guidelines.
- **Survey of the FMIs' work against cyber threats:** One operational risk faced by FMIs is the risk of exposure to IT-related attacks that could damage their IT systems, for instance. This type of attack is an example of cyber threats that can have major consequences for the stability of the financial system. The Riksbank therefore intends to investigate more closely, in cooperation with Finansinspektionen, how the FMIs work on managing cyber threats.
- **Analysis of the effects of a potential future T2S connection:** The Swedish market needs to take a stance on whether or not it wants settlement of SEK-denominated securities to take place in T2S. The Riksbank's activities would be affected if there is a connection to T2S. This would both affect how the securities market is organised and the Riksbank's own operational activities. A potential T2S connection would also entail contractual issues resulting from the Riksbank in that case giving T2S instead of Euroclear Sweden the task of administering the Riksbank's special accounts, collateral and credits for securities settlement. The Riksbank will therefore conduct its own analysis of the effects that would arise as a result of a potential connection to T2S. This analysis will be based on a stability and efficiency perspective, an operational perspective and a legal perspective.

■ The Riksbank's oversight work

The Riksbank's work on the oversight of the financial infrastructure has its starting point in the Sveriges Riksbank Act (1988:1385) and the responsibility held by the Riksbank to promote a safe and efficient payments system.⁷

The aim of the oversight is to identify and analyse the sources of risks and efficiency losses in the financial infrastructure and to act to reduce these. However, it is important to point out that the Riksbank's oversight does not in any way take away the individual FMI's responsibility for its own risk management. The ultimate responsibility for the activities being secure and efficient always lies with the FMI itself.

WHAT IS THE FINANCIAL INFRASTRUCTURE?

The financial infrastructure consists of FMIs through which payments are made and payments and transactions with financial instruments are handled. More precisely, the Riksbank defines the financial infrastructure as the FMIs which handle financial positions and/or enable financial flows between various participants, the FMIs' legal frameworks and procedures and the participants' use of these FMIs. In addition, there are a number of related functions⁸ that are critical to the FMIs and for this reason are also subject to the Riksbank's oversight.

The financial infrastructure thereby plays a central role in the financial system and forms a precondition for the efficient functioning of the financial system. It also means that weaknesses in the infrastructure may result in problems that affect one participant or FMI spreading to other participants and FMIs. Weaknesses can thereby affect the functioning of both the payment market and the financial markets - with major economic costs as a potential result.

THE RIKSBANK AND FINANSINSPEKTIONEN COOPERATE

The Riksbank oversees the financial infrastructure with the aim of safeguarding the stability of the entire financial system. Finansinspektionen also has responsibility for financial stability through its supervision of the individual FMIs, and through its responsibility for macroprudential policy in Sweden. Finansinspektionen also grants licenses to engage in such activities as clearing and settlement, as well as operations as central counterparty. The areas of responsibility of the two authorities occasionally overlap. In these cases, they endeavor to develop efficient forms for contacts and cooperation. Formalised cooperation exists between the two authorities aimed at achieving this.

⁷ See Sveriges Riksbank (2013), "The Riksbank and financial stability 2013".

⁸ One example of a related function that is critical to the system is the legal entity responsible for its activities.

BASIC PREMISES FOR THE RIKSBANK'S ASSESSMENT

The Riksbank oversees the FMIs that are considered essential for the Swedish financial system to function efficiently. To assess which FMIs are appropriate for oversight, the Riksbank uses the following criteria

- the number and value of the transactions handled by the FMI
- the size of the FMI's market share
- the markets on which the FMI is active
- the available alternatives that could be used at short notice
- how closely the FMI is interlinked with other FMIs and financial institutions
- the FMI's significance for the implementation of monetary policy

THE OVERSIGHT AIMS TO REDUCE RISKS AND EFFICIENCY LOSSES

With the Riksbank's task of safeguarding financial stability as a starting point, the Riksbank oversees the financial infrastructure. The Riksbank's oversight is based on the requirements placed by international standards on FMIs, and focuses on monitoring and analysing the FMIs and related critical functions to ensure they comply with these requirements.⁹ The Riksbank considers that the following Swedish and international FMIs are currently central to financial stability and should therefore be overseen:

- the Riksbank's large value payment system for the transfer of funds in accounts (RIX)
- Euroclear Sweden AB's system for securities settlement (the VPC system)
- Nasdaq OMX Clearing AB's central counterparty system for financial derivatives, commodity derivatives and repos¹⁰
- Bankgirocentralen BGC AB's system for clearing retail payments¹¹ (Bankgirot)
- The international systems CLS¹², SWIFT¹³, EuroCCP¹⁴, and LCH¹⁵

OVERSIGHT IS BASED ON INTERNATIONAL STANDARDS

The Riksbank bases its oversight of the financial infrastructure on the requirements for safety and efficiency set in accordance with international standards. For FMIs, there are standards issued by the Committee on Payment and Market Infrastructures (CPMI)¹⁶ and the International Organization of Securities Commissions (IOSCO)¹⁷ - "Principles for financial market infrastructures" (PFMI). These standards are aimed at strengthening the financial infrastructure. They entail minimum requirements, and the specific characteristics of the Swedish market may mean that the Riksbank needs

⁹ See Sveriges Riksbank (2012), "The Riksbank's oversight of the financial infrastructure", and www.riksbank.se.

¹⁰ As of 2013, the Riksbank participates in the supervisory college for the supervision of NASDAQ OMX Clearing under the *European Market Infrastructure Regulation* (EMIR).

¹¹ The Riksbank monitors Bankgirot's clearing and settlement service.

¹² CLS is a global FMI for the settlement of foreign exchange transactions.

¹³ SWIFT is a global network for financial messages.

¹⁴ In January 2014, the EMCF changed its name to EuroCCP. EuroCCP is a central counterparty for equities. As of 2013, the Riksbank participates in the supervisory college for the supervision of EuroCCP.

¹⁵ LCH (LCH.clearnet Limited) is a British central counterparty which clears several different classes of derivatives (equity, fixed-income and commodities).

¹⁶ The CPMI is a committee within the Bank for International Settlements (BIS) and was previously known as the Committee on Payment and Settlement Systems (CPSS).

¹⁷ IOSCO is an international organisation dealing with the supervision of securities.

to place higher requirements. The Riksbank expects the systems to meet the requirements in the standards or the higher requirements it sets.

The PFMI also include requirements aimed at central banks and other authorities overseeing or supervising the financial infrastructure. The Riksbank strives to meet the requirements in the PFMI in its own oversight work.

THE FMIs ASSESS THEMSELVES

The Swedish FMIs themselves assess how well they comply with the requirements set by the PFMI, in consultation with the Riksbank and Finansinspektionen. This takes place at least every third year, or more frequently if the Riksbank and Finansinspektionen see reason for this, for example if a FMI has undergone major changes. Based on the FMIs' self-assessments, the Riksbank then makes its own assessment of appropriate areas for improvement to increase the safety and efficiency of the financial system. For Bankgirot, Euroclear Sweden and Nasdaq Clearing, these assessments are made together with Finansinspektionen.

COMMUNICATION CONCERNING DEFICIENCIES IN THE FMIs

The Riksbank has no binding tools to influence participants in the financial system. Instead, the bank primarily exerts influence by communication. In cases in which the Riksbank's analysis points to deficiencies in safety or efficiency, the Riksbank discusses this with Finansinspektionen and encourages the FMI to remedy these. This takes place in the form of public statements, speeches and publications, as well as in dialogue and meetings with the FMIs' representatives ('moral suasion').

The Riksbank's assessments of the safety and efficiency of the financial infrastructure are communicated via this report, the Financial Infrastructure Report. The Riksbank may also need to give clear suggestions for appropriate measures to counteract the risks, and may then publish recommendations to the FMIs and their participants in the Financial Stability Report. One further way of communicating a deficiency in a FMI is to discuss it in the Financial Stability Council, in which representatives of the Government, Finansinspektionen, the Swedish National Debt Office and the Riksbank participate.

THE RIKSBANK'S OVERSIGHT AND OPERATION OF RIX ARE ORGANISATIONALLY SEPARATE

The Riksbank owns and runs the FMI for large value payments (RIX) and is also a participant in the FMI. That part of the Riksbank's operations is organisationally separate from the Riksbank's oversight of the financial infrastructure. The Riksbank's Financial Stability Department is responsible for the oversight of RIX, but the Cash and Payment Systems Department is responsible for the ownership and operation of RIX. RIX is dealt with and assessed on the same basis as other FMIs. However, one difference is that the Riksbank does not cooperate with Finansinspektionen as regards the oversight of RIX, as RIX does not fall under the supervision of Finansinspektionen.

■ 1. Current issues

In this chapter, the Riksbank describes current issues that are important for the stability and efficiency of the Swedish financial infrastructure. The chapter begins with four important legal issues, where the Riksbank has already given its views, in the form of submissions and consultation responses. After that, we present one issue related to the securities market and three areas on which the Riksbank will focus its oversight in 2015.

Legal issues

AMENDMENT TO THE BANKRUPTCY ACT ENSURES THE INCORPORATION OF THE SETTLEMENT FINALITY DIRECTIVE INTO SWEDISH LAW FOR SWEDISH PARTICIPANTS

The Riksbank pointed out in the Financial Infrastructure Reports published in 2013 and 2014 the problem of the Settlement Finality Directive¹⁸ only being partially implemented in Swedish legislation. An amendment to the Bankruptcy Act that came into force in March 2015 largely resolves this problem. This amendment is welcomed by the Riksbank as it is considered to ensure that an official receiver cannot require that a transfer order entered into a Swedish system by a Swedish participant can be withdrawn.

However, the amendment to the Bankruptcy Act does not deal with the question of what applies in Swedish law when an overseas participant in a Swedish system enters a transfer order into the system after the participant has become the object of insolvency proceedings.¹⁹ As there is no explicit provision in Swedish law to regulate what applies to overseas participants, some uncertainty still remains with regard to these situations, which the Riksbank considers to be unfortunate.

A RESOLUTION DIRECTIVE FOR THE FINANCIAL INFRASTRUCTURE SHOULD BE COMPLETED

Resolution is an alternative procedure to bankruptcy for financial companies that are considered critical to the functioning of the financial system, and when the costs to society of a bankruptcy are considered too high. The Riksbank wrote in its comment²⁰ on the Financial Crisis Committee's final report regarding resolution for banks²¹ that an alternative to bankruptcy was also needed for FMIs.

As in the case of the major banks, the FMIs can play a critical role for the financial system and a major disturbance in the operation of the FMI could cause a serious disruption in the financial system. Moreover, the FMI could give rise to

¹⁸ Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems.

¹⁹ A collective concept for various types of proceedings in connection with a company being declared bankrupt or similar.

²⁰ Sveriges Riksbank (2014), ref. no. 2014-559-STA.

²¹ Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 on establishing a framework for the recovery and resolution of credit institutions and investment firms is a European directive that shall be incorporated into Swedish law through the Resolution Act.

considerable contagion effects if declared bankrupt, in that participants, such as banks, would suffer major losses. This indicates there is a need for a resolution framework for the FMIs.

Resolution framework for central counterparties particularly important

Central counterparty clearing is a means for financial companies, such as banks, to manage their counterparty risk by replacing their original counterparty with a central counterparty that is clearly regulated. This form of clearing thus fulfils an important function in the financial system by reducing counterparty risk and increasing transparency to trading of financial instruments. As part of the reform agenda in the wake of the financial crisis, central counterparty clearing will also become mandatory when trading in certain financial instruments.²²

It is thus very important that the activities conducted by a central counterparty can proceed without disruption. Another reason is that central counterparties are exposed to counterparty risk as a natural part of their operations, just like banks, and the risk of financial losses is thus higher for central counterparties than for other parts of the financial infrastructure. Although central counterparties protect themselves against losses by requiring that participants in the FMI to pledge collateral in relation to their exposures and by maintaining a financial buffer, the risk of such large losses that they will nevertheless go bankrupt cannot be neglected. If a central counterparty goes bankrupt, it is also likely that this will in turn lead to direct financial losses for its participants, which are often banks.

The European Commission is working on a proposal for a resolution framework for at least central counterparties, which is expected in 2015. The Riksbank welcomes this work and considers, like the European Commission, that a resolution framework for central counterparties should be given priority in relation to other FMIs. In the opinion of the Riksbank, this framework would need to be adapted to the operations of FMIs and would therefore differ from the framework being introduced for the banks. A common analysis of how an appropriate resolution framework for FMIs should be designed have therefore been initiated between the Riksbank and Finansinspektionen.

ESMA SHOULD IMMEDIATELY INVESTIGATE WHETHER OTC DERIVATIVES DENOMINATED IN SEK SHOULD BE SUBJECT TO MANDATORY CENTRAL COUNTERPARTY CLEARING

During 2014, many of the largest central counterparties in Europe were authorised in accordance with EMIR,²³ but the G20 commitment regarding central counterparty clearing has not yet obtained legal force. Before it does, ESMA is to produce regulatory technical standards specifying which derivatives will be covered by the requirement, and then the European Commission shall adopt them.

The reason why G20 advocates central counterparty clearing is that bilateral exposures in OTC derivatives between counterparties is a source of systemic risks. Compared to the risk associated with bilateral clearing of OTC derivatives, central

²² For further information, see "ESMA should immediately investigate whether OTC derivatives denominated in SEK should be subject to mandatory central counterparty clearing" in Chapter 1.

²³ The Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

counterparty clearing will limit the counterparty risk and thereby also the systemic risk.

ESMA's proposal for technical standards for mandatory clearing

On 1 October 2014, ESMA sent a draft for technical standards to the European Commission for adoption.²⁴ ESMA proposes that the OTC derivatives to be covered by mandatory clearing initially are the most liquid fixed-income derivatives²⁵ in the four largest currencies: EUR, USD, GBP and JPY. The combination of currencies and fixed-income derivatives means that a large share of the market for OTC derivatives in Europe will be covered by mandatory clearing after the requirement is implemented for these particular derivatives. The reason why ESMA has not included OTC derivatives in more currencies is that they had a limited time in which to make their analysis. However, it is clear from the draft technical standard that OTC derivatives in further currencies, including SEK, need to be analysed to consider whether the scope of the requirement needs to be expanded.

The Riksbank is of the opinion that ESMA should immediately investigate whether OTC derivatives denominated in SEK should be covered by the requirement for mandatory central counterparty clearing.

CSDR – NEW EU REGULATION ON IMPROVED SECURITIES SETTLEMENT AND CENTRAL SECURITIES DEPOSITORIES IS WELCOME

Central securities depositories (CSDs) fulfil a central function on the securities markets and contribute to maintaining the market's confidence in securities transactions settling correctly and on time. The new EU regulation CSDR,²⁶ which came into force in autumn 2014, implements the international standards PFMI for central securities depositories.

CSDR entails a harmonisation of the regulatory framework for central securities depositories within the EU and contains new regulations aimed at improving securities settlement and reducing the risks. It introduces limits as to which types of operations a central securities depository may carry out and requirements for authorisation. It also introduces free right of establishment for authorised central securities depositories within the EU and the opportunity for issuers to freely determine in which central securities depository they want to issue their securities. These changes open up for a consolidation of the market for central securities depositories in the EU and they could lead to structural transformation with regard to how and where securities are settled in the future. A significant part of the new regulations focus on increasing the share of securities transactions settled on the intended date, for instance, penalty charges are introduced for delays in settlement. Work on drawing up the details of the new regulations is in progress and they will be implemented gradually.

One change that has already been introduced into the Swedish market is that the number of days from trade to settlement in a securities transaction has been reduced from three to two. This change affected all participants active on the

²⁴ The draft concerns fixed-income derivatives cleared by central counterparties authorised within the EU. Parallel with this, ESMA is working on a further draft for technical standards for obligatory central counterparty clearing of credit derivatives.

²⁵ IRS, Basis swaps, OIS and FRA will be covered by ESMA's proposal for obligatory central counterparty clearing.

²⁶ The Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories.

securities market, including the financial infrastructure companies EuroCCP²⁷ and Euroclear Sweden²⁸. Following the transition to a two-day settlement period, the settlement ratio on the equity market declined. The market participants have held discussions on this and taken the initiative to measures to redress the declining settlement ratio.²⁹ For instance, Euroclear Sweden has announced that they intend to introduce penalty charges for delayed settlement. The Riksbank will follow how the settlement ratio develops in the coming period.

The Riksbank welcomes CSDR, as this implement the PFMI for central securities depositories. The Riksbank considers it important that market participants prepare in plenty of time to be able to adapt their IT systems and operations to the new regulatory frameworks in a secure manner, without risk of disruptions to their operations.

Issues related to the securities market

ISSUERS OF BONDS WITH VARIABLE COUPONS SHOULD ADAPT THESE TO NEGATIVE INTEREST RATES

The Riksbank's expansionary monetary policy has led to a low interest-rate environment in which certain market rates have become negative. This entails a change that market participants and the financial infrastructure need to adapt to. Part of this adaptation involves removing various technical and legal obstacles to being able to manage negative interest rates. Ultimately this is also an important component of ensuring that it remains possible to conduct monetary policy and to uphold the functioning of the financial markets.

The need to adapt the FMIs and the practices on the financial markets as a result of negative interest rates has been limited to date. It has been possible to make the changes that have been made without any significant difficulties. One exception is the market for bonds with variable coupons, so-called Floating Rate Notes (FRN). The normal procedure for bonds of this type is that the size of the variable coupon is determined by the three-month Stibor reference rate and a spread that is based, among other things, on the creditworthiness of the issuer.³⁰ If the reference rate is low, the coupon may be negative for some of these bonds. The investor will then have to pay the coupon to the issuer and not vice versa, which raises both technical and legal questions. At present, it is unclear how the issuers will deal with coupons that become negative for outstanding bonds. There is also no market practice that outlines how new issues of bonds should be adapted to the low interest-rate environment.

From a technical perspective there are different ways of adapting bonds with a variable coupon to a negative interest-rate environment. One way is for the issuer to make it clear that it will not demand payment of negative coupons.³¹ In those cases where an issuer wishes to demand payment for negative coupons this can, for example, be done by handling the payment manually outside of Euroclear Sweden's

²⁷ EuroCCP acts as central counterparty for Swedish equity transactions.

²⁸ Euroclear Sweden is the only Central Securities Depository in Sweden.

²⁹ Euroclear Sweden bases the settlement ratio on the number of transactions settled on the agreed date (T+2).

³⁰ This supplement is usually higher than zero but may in certain cases be negative for issuers with high credit ratings.

³¹ In this case a floor of SEK zero is introduced for the coupon which the coupon may not fall below.

system for securities settlement.³² There are also alternatives that in purely technical terms can be handled in the settlement system. One such alternative is to adjust the bond's nominal amount by the equivalent amount on the negative coupon. Yet another way is to issue bonds with such high spreads on the variable coupon that this is unlikely to become negative.

Apart from technical aspects there is also uncertainty about legal restrictions. These are most prominent in the case of outstanding bonds, as the contracts have already been entered into. In connection with a new issue, and normally also when a bond programme is changed, there is greater scope to design the terms and conditions for the bonds on the basis of the low interest-rate environment, although there may be limits here too.

The Riksbank considers it important that every issuer of outstanding bonds with variable coupons, or issuers who intend to issue such bonds, should, in close dialogue with Euroclear Sweden, make it clear to other market participants how these bonds are adapted to a negative interest-rate environment. The Riksbank is monitoring developments carefully and conducting a close dialogue with those involved in order to stay informed about the progress of this adaptation.

³² The issuer can, however, receive information from Euroclear Sweden on who owns the bonds.

T2S – a European infrastructure for securities settlement

TARGET2-Securities (T2S) is a European infrastructure for the settlement of securities transactions in central bank money.³³ T2S is developed, owned and operated by the Eurosystem and will be launched in June 2015. At present, the securities markets in all the euro countries, and Denmark, have chosen to connect to T2S. In 2011, the Swedish market considered a T2S connection but decided not to join at that time. The issue has now been raised once again, partly because the securities market as a whole is undergoing major changes as a result of new regulations and the desire to establish a capital markets union within the EU, and partly because Euroclear Sweden is facing the replacement of its existing system for securities settlement. A decision on whether the Swedish securities market will connect to T2S or not is a strategically important decision in this context.

TODAY'S SECURITIES MARKET IS FRAGMENTED

Central securities depositories perform an important function on the securities market. The sale of a security, for example in a stock exchange transaction between a buyer and a seller, is followed by the processes in which the security and money exchange owners. This is called settlement and takes place at the market's central securities depository, which in Sweden's case is Euroclear Sweden. Securities institutions such as banks and brokers, as well as other market players, are participants in Euroclear Sweden's settlement system. The participants are responsible for settling deals conducted by themselves and their customers.³⁴

The settlement of securities requires an infrastructure in the form of IT systems, market practices, regulations and so on. At present, different EU countries use different infrastructures. This means that there are costs and risks associated with the buyer or seller of a security acting on several markets. For the customer it is more expensive to trade in foreign securities than in domestic securities. More steps are also required when settling cross-border securities transactions, which increases the risk of something going wrong.

T2S – A EUROPEAN INFRASTRUCTURE FOR SECURITIES SETTLEMENT

T2S was created because the European securities markets have not been fully integrated. The infrastructure offered by T2S is expected to help make securities settlement more efficient and standardised. T2S is thereby expected to make the process easier and to lead to lower costs for cross-border securities transactions within the EU.

For a market to connect to T2S its central securities depository must transfer the holding and administration of its securities accounts to T2S, and its central bank

³³ Central bank money refers to transfers between accounts at central banks.

³⁴ Customers may be private individuals, institutional investors or other legal entities.

must do the same with its special accounts, collateral and credits for securities settlement. However, T2S will not completely replace the current central securities depositories. The national central security depositories will still be responsible for the securities accounts and will contribute their own regulations and own agreements for their customers. Moreover, T2S will not offer all the services offered by the present central securities depositories, for example the administration of corporate actions and the management of issuances. This means that a central securities depository that is connected T2S must nevertheless have a function for offering the market these services.

T2S – AN IMPORTANT CHOICE THAT REQUIRES CAREFUL ANALYSIS

Now that the issue of a possible connection of the Swedish market to T2S has been raised again the situation is different compared to what it was when this issue was discussed earlier, and a new review is therefore needed. Irrespective of whether it is decided to connect to T2S or not, this is an important choice that will affect the functioning of the Swedish securities market for many years to come.

Focus areas for the Riksbank's oversight work in 2015

EVALUATION OF THE RECOVERY PLANS

The PFMI,³⁵ which the Riksbank applies, make it clear that FMIs should have recovery plans.³⁶ CPMI-IOSCO published a guide on what these should cover in October 2014.³⁷ The European Commission is also drawing up a directive that includes a requirement for recovery plans for central counterparties.

All of the four Swedish FMIs under the Riksbank's oversight have drawn up recovery plans in 2014, which the Riksbank welcomes. In 2015, the Riksbank, together with Finansinspektionen (the Swedish financial supervisory authority), will focus on analysing and assessing how well the Swedish FMIs recovery plans follow the current guidelines. The Riksbank's analysis and assessment will largely be based on the guidance published by CPMI-IOSCO, but will also take the European Commission's work into account.

SURVEY OF THE FMIs' WORK AGAINST CYBER THREATS

An operational risk that FMIs must manage is the risk of being exposed to various forms of IT related attack. If an attacker manages to access a FMI's IT system and the information in processes, this may seriously damage the FMI's operations. If an attack is directed at FMIs this may mean that central financial services relating, for example, to the clearing and settlement of financial transactions are affected and that FMIs of importance to financial services are no longer available. There is significant risk that such a situation will result in serious negative consequences for the stability of the financial system as a whole.

This issue is raised in the CPMI report Cyber Resilience in Financial Market Infrastructures from November 2014.³⁸ Among other things, the report contains a survey of how FMIs in a number of countries work to manage cyber threats.³⁹ The report points out that in addition to being able to identify and resist attempted attacks, the FMIs also need a well-developed strategy to manage a situation in which IT systems or information have been affected. As FMIs and organisations in the financial sector are dependent on each other to be able to conduct their operations, they also need to cooperate so that the financial system as whole has sufficient resilience to cyber threats.

This type of threat to FMIs may have major negative consequences for the stability of the financial system. In 2015, the Riksbank therefore intends to investigate more closely, in cooperation with Finansinspektionen, how the FMIs work on managing cyber threats.

³⁵ See CPSS-IOSCO Principles for financial market infrastructure (2012). Principle 3: Framework for comprehensive management of risks and Principle 15: General business risk.

³⁶ See Sveriges Riksbank (2014), "Financial Infrastructure 2014", page 20.

³⁷ BIS and IOSCO (2014), Recovery of financial market infrastructures.

³⁸ BIS (2014), Cyber resilience in financial market infrastructures.

³⁹ See BIS (2014), "Cyber Resilience in Financial Market Infrastructures" where cyber threat is defined as "A circumstance or event with the potential to intentionally or unintentionally exploit one or more vulnerabilities in an FMI's systems resulting in a loss of confidentiality, integrity or availability".

ANALYSIS OF THE EFFECTS OF A POTENTIAL FUTURE T2S CONNECTION

TARGET2-Securities (T2S) is a European infrastructure for the settlement of securities transactions in central bank money.⁴⁰ The Swedish market needs to decide whether it wants the settlement of securities in Swedish kronor to take place on T2S or not.

The Riksbank's activities would be affected if there is a connection to T2S. This would affect everything from how the securities market is organised to the Riksbank's own operational activities. A potential connection to T2S would also raise contractual issues as the Riksbank would in this case commission T2S, instead of Euroclear Sweden, to administer the Riksbank's special accounts, collateral and credits for securities settlement.

The Riksbank will therefore conduct its own analysis of the effects that would arise as a result of a potential connection to T2S. This analysis will be based on a stability and efficiency perspective, an operational perspective and a legal perspective.

⁴⁰ Central bank money refers to transfers between accounts at central banks.

High operational reliability important

A common feature of the Swedish FMIs that are subject to oversight by the Riksbank is that they are all important to the efficiency and stability of the financial system. This means that any disruption in their operations may be costly. In the worst case, a disruption could lead to a financial crisis. It is therefore important that the FMIs have a high level of operational reliability. However, establishing a high level of operational reliability requires continuous and extensive work. According to the PFMI, the FMIs should set targets for their operational reliability and review and periodically evaluate these targets in the light of adjustments to technical and business developments. A significant part of the Riksbank's oversight work aims to ensure that the FMIs have an adequate level of ambition for their operational reliability and that they also reach this level in practice.

IMPORTANT COMPONENTS FOR HIGH OPERATIONAL RELIABILITY

Operational reliability is a broad concept. Some important components for establishing high operational reliability are robust routines and processes that minimise the risk of disruptions as well as handle disruptions once they do arise. It is a question of both preventive and crisis-management routines. When disruptions occur, rapid and reliable alternatives such as back-up and redundant solutions⁴¹ must be available. In connection with a disruption, follow-up work is also important in order to be able to identify the cause of the disruption, evaluate, take measures and try to prevent similar disruptions occurring again. Similarly, it is important that the FMIs carry out exercises of the routines and continuity solutions, both internally and with the participants, in order to be well prepared if a disruption does occur.

AVAILABILITY TARGETS SHOW THE FMI'S LEVEL OF AMBITION

Operational reliability means above all that the FMIs should be available for their participants to use them. An availability target shows the FMI's level of ambition. The higher the availability target, the higher the level of ambition and the requirements for redundancy and back-up solutions. The availability target can then also serve more generally as an indicator of the FMI's level of ambition and of the work to ensure a high level of operational reliability. The target makes it possible to measure and compare the actual level of availability with the expected level and thus demonstrates the FMI's efficiency and performance.

The Riksbank considers that an historical comparison of how well an individual FMI has met its availability target over time provides a good understanding of the routines and processes used, and of the redundancy and back-up solutions applied, and how well they work. The Riksbank therefore conducts an annual follow-up of to what extent actual availability reaches the targets set, which is reported for the respective FMIs in Chapter 2.

⁴¹ Two or more alternative - identical or different - systems or components that independently of each other perform the same task and can thus replace the primary alternative if problems arise.

■ 2. The Swedish FMIs

In this chapter, the Riksbank presents its views of the stability and efficiency of the Swedish FMIs RIX, Bankgirot, Euroclear Sweden and Nasdaq Clearing.⁴² The starting point for these views is how well the FMIs meet the requirements set by the PFMI.

The Riksbank considers that the financial infrastructure in Sweden consists of safe and efficient FMIs. However, there is room for improvement. The survey of participants conducted by the Riksbank together with Finansinspektionen in the autumn of 2014 also supports this overall impression.

The RIX system– the FMI for large-value payments

The Riksbank owns and operates the RIX system but is also responsible for the oversight of the FMI. However, that part of the Riksbank's activities that is responsible for the ownership and operation of the RIX system is organisationally separate from the Riksbank's oversight of the financial infrastructure.⁴³ References to the Riksbank in this report relate to the oversight function.

Banks, the Swedish National Debt Office, clearing organisations and the Riksbank are participants in the RIX system. The banks' accounts in the RIX system are used to settle direct payments between the banks as well as payment orders from bank customers. This means that most of the payments involving a transfer from an account in one bank to an account in another bank are settled through the banks' accounts in the RIX system. In 2014, an average of approximately 16,000 payments per bank day were settled in RIX and the average turnover was approximately SEK 430 billion per bank day, which represents an increase as well in the number of transactions as in value since the previous year. This means that a value corresponding to Sweden's GDP⁴⁴ passes through the RIX system in the course of roughly nine bank days.

HIGH OPERATIONAL RELIABILITY CENTRAL IN THE RIX SYSTEM

The RIX system is a central function in the financial infrastructure and it is therefore important to financial stability that the FMI has a high level of operational reliability.⁴⁵ In 2014, the Riksbank conducted a survey among the RIX participants which revealed that the participants' confidence in the RIX system is high. The availability of the FMI reached 99.97 per cent in 2014, thus exceeding the availability target of 99.85 per cent. However, the Riksbank can also note that the RIX system has suffered several disruptions in recent years that have had a negative impact on availability, see Chart 1. The Riksbank therefore considers that the operator of the RIX system should work to improve its operational reliability over the next 12 months.

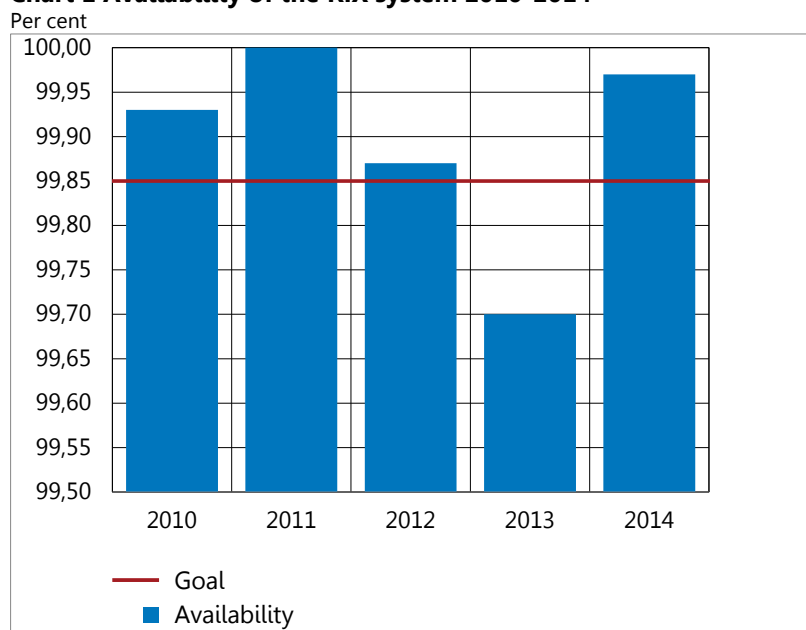
⁴² See Sveriges Riksbank (2014), "The Swedish Financial Market 2014" for further information on systems that make up the financial infrastructure in Sweden.

⁴³ This means that the Riksbank's Cash and Payment Systems Department is responsible for the operational activities of RIX, while the Financial Stability Department is responsible for the oversight of RIX.

⁴⁴ In 2014, Sweden's GDP amounted to approximately SEK 3,908 billion.

⁴⁵ See also the article "High operational reliability important" in Chapter 1.

Chart 1 Availability of the RIX system 2010-2014



Source: The Riksbank

More work on preventive processes and routines reduces the risk of disruptions

The operator of the RIX system is dependent on both internal and external parties for the IT environment and the FMI to function well. The maintenance and development of the RIX system has been outsourced since 2009. The IT operation of the RIX system has been outsourced since 2013. When the IT operation, maintenance and development of a FMI are outsourced, it is of central importance that there is an organisation in place that applies effective routines and processes to ensure that the FMI works satisfactorily. There is an internal function that orders IT services and maintenance and development work for the RIX system and that is responsible for ensuring that this work is done.

During 2013⁴⁶ and 2014, there were both major and minor disruptions to the RIX system. Some of the minor disruptions occurred due to a failure to adequately observe processes and routines. These disruptions have also reoccurred and thus show that improvements are needed with regard to the routines and processes on which the RIX system is dependent.

The Riksbank therefore considers that the operator of the RIX system should strengthen the preventive work by carrying out a review of the existing processes and routines and ensuring they are observed. The focus should lie on the organisation's processes and routines that relate to changes and upgrades in the IT environment. This will ensure a high degree of operational reliability in the RIX system. A natural part of this work should also be to evaluate the level of the availability target and specify how the target should be attained. The Riksbank will monitor this work in the course of its ongoing oversight activities.

⁴⁶ See Sveriges Riksbank (2014), "Financial Infrastructure 2014", pp. 21-23.

FOLLOW-UP OF ISSUES RELATING TO THE RIX SYSTEM FROM THE FINANCIAL INFRASTRUCTURE REPORT 2014

- An inquiry of the need to establish a third operating site has recently been completed. It was decided that a third operating site will be established. A third operating site that uses different software to the first and second sites could make it possible to reduce the consequences of a potential disruption.
- The operator of the RIX system has begun an analysis of the risks that may arise from indirect participants. The Riksbank expects this analysis to be completed during 2015.⁴⁷

Bankgirot – the FMI for the clearing of retail payments

Bankgirot is a bank-owned clearing organisation and is the central actor in the mediation of retail payments in Sweden. An average of over four million transactions to a total value of approximately SEK 50 billion are cleared through Bankgirot's system each bank day.⁴⁸ Several different types of payments and transfers are made through Bankgirot, for example credit transfers, direct debits, suppliers' payments, wage payments, account-to-account transfers, card payments, ATM withdrawals, and cash management transfers between banks.

In 2014, availability in the Bankgirot system was 99.88 per cent, which means that the availability target of 99.70 per cent was met. Viewed over the last five years, the actual availability of the FMI has been good. For 2015, Bankgirot has increased their availability target to 99.75 percent.

BANKGIROT SHOULD IMPROVE ACCESS TO INFORMATION

It is of great importance that an FMI like Bankgirot ensures that the participants, the authorities and the public have access to relevant information. This applies to information that makes it possible for the participants and other stakeholders to understand the risks associated with participation as well as to information on the fees and other costs that participation entails.

At present, there is a lack of clear and easily-accessible information in the form of statistics on transaction values and transaction volumes. Information is also lacking on the fees for individual services and on the available discounts. This information should be available in English. Given this background, the Riksbank considers that there is scope for Bankgirot to improve its public information, preferably on its website.

FOLLOW-UP OF ISSUES RELATING TO BANKGIROT FROM THE FINANCIAL INFRASTRUCTURE REPORT 2014

- Bankgirot has begun work on improving the analysis and inspection of the risks associated with indirect participation. The Riksbank considers that it is of great importance that Bankgirot completes this work and thereafter manages any risks arising from indirect participants on an ongoing basis.

⁴⁷ See Sveriges Riksbank (2014), "Financial Infrastructure 2014", page 23.

⁴⁸ Refers to the Bankgirot system and Dataclearingen.

- Bankgirot conducted a continuity exercise with all of the participants in the autumn of 2014. The Riksbank welcomes this and considers that such exercises should be conducted annually on the basis of various stress scenarios, for example communication breakdowns or problems at one of the participants.
- As the Riksbank has pointed out earlier, there is still no independent board member on the board of Bankgirot.⁴⁹ Discussions have begun with Bankgirot with the aim of ensuring that Bankgirot's definition of independent director harmonizes with the requirements set out in PFMI. The Riksbank expects that the definition will be used in practice in Bankgirot's organization.

Euroclear Sweden – the FMI for central securities depository and securities settlement

Euroclear Sweden⁵⁰ clears and settles transactions in mainly Swedish equities and fixed-income securities. In its role as a CSD, Euroclear Sweden keeps a register of securities and their owners, provides securities accounts and administers corporate actions. In 2014, an average of approximately 53,000 transactions valuing approximately SEK 39 billion were settled per bank day on the equity market, and approximately 1,200 transactions valuing approximately SEK 280 billion on the fixed-income market. The availability of Euroclear Sweden's system has been good and above the availability target of 99.93 per cent over the last five years.

A DECISION ON REPLACING THE VPC SYSTEM SHOULD BE PRECEDED BY CAREFUL ANALYSIS AND PLANNING

The Riksbank has previously noted that Euroclear Sweden's securities settlement system, the VPC system, is outdated, complex and difficult to adapt to new market requirements.⁵¹ In 2014, Euroclear Sweden began working on a plan for the replacement of the VPC system. Euroclear Sweden is now discussing the requirements of a new security settlement system with its participants and is planning to make a decision on a system replacement in 2015.

Replacing the VPC system is a large and complex project that is associated with many risks and that is expected to take several years to complete. It therefore places great demands regarding planning and implementation. Euroclear Finland is currently running a similar project which in an initial phase suffered problems and delays that have now been dealt with. Euroclear Sweden, which to a certain extent shares resources with Euroclear Finland,⁵² has participated actively in this project.

The Riksbank wishes to underline the importance of Euroclear Sweden carefully analysing and learning lessons from the work on replacing the Finnish securities settlement system. It is also of great importance that Euroclear Sweden involves the participants on the Swedish market. This is in order to assimilate the market's demands with regard to functionality, to get the market to commit to the schedule

⁴⁹ In its self-assessment, Bankgirot defines independent board members as being independent of Bankgirot, Bankgirot's management and all of Bankgirot's owners.

⁵⁰ Euroclear Sweden is owned by the Belgian group Euroclear SA. As Euroclear Sweden is part of a Belgian group, some of the Riksbank's oversight of the system takes place in the form of international oversight work that is led by the Belgian central bank.

⁵¹ See Sveriges Riksbank (2014), "Financial Infrastructure 2014", pp. 25-26.

⁵² Euroclear Sweden and Euroclear Finland have to some extent joint resources for management, development and project organisation.

set and to support participants in their preparations for the adjustments to their own IT systems that will be necessary as a result of the new securities settlement system.

THE SWEDISH MARKET MUST MAKE DECISIONS ABOUT THE FUTURE OF SWEDISH SECURITIES SETTLEMENT

The planning of changes in securities settlement in Sweden is a joint task for Euroclear Sweden and the participants on the Swedish securities market. An important issue connected to Euroclear Sweden's system change is that the Swedish market participants make decisions concerning securities settlement in Sweden in the future. For example, the market participants need to take a stance on whether or not they want the settlement of SEK-denominated securities to take place in T2S.⁵³

The Riksbank is a player on the Swedish market that uses Euroclear Sweden's VPC system and will participate in the planning of the changes. In its oversight role, the Riksbank will closely monitor the work on changing the VPC system. All of the parties concerned on the Swedish market should allocate sufficient resources for the planning and implementation of the changes decided on.

EUROCLEAR SWEDEN SHOULD CONTINUE TO FOCUS ON HOW TO MANAGE THE INCREASED NEED FOR RESOURCES IN THE FUTURE

The approaching system change places great demands on both Euroclear Sweden and its participants. The Riksbank has previously pointed out that Euroclear Sweden should reinforce its organisation in order to be able to meet an increased need for resources in the future.⁵⁴

Euroclear Sweden took several measures during the course of 2014. For example, the VPC system's data center has been moved to the parent company's data center in Paris, which has entailed a strengthening of the capacity for the operation and security of the settlement system. Several measures have also been taken to improve the competence of the IT suppliers and the services provided by them. Euroclear Sweden has also increased its resources by employing more staff.

It is of the greatest importance that Euroclear Sweden continues to ensure that it has an organisation and project resources that can manage the great demands placed by the approaching system replacement and new regulations,⁵⁵ at the same time as it continues to provide a high level of quality in its ongoing operations.

FOLLOW-UP OF ISSUES RELATING TO EUROCLEAR SWEDEN FROM THE FINANCIAL INFRASTRUCTURE REPORT 2014

- Euroclear Sweden is working on analysing and documenting its IT strategy. The Riksbank welcomes this and expects Euroclear Sweden to present a well-considered IT strategy that is documented in accordance with established standards for IT strategies during the first six months of 2015.
- Euroclear Sweden is working on analysing and identifying the risks arising from indirect participants as well as measures designed to manage these

⁵³ See the article "TS2 – a European infrastructure for securities settlement" in Chapter 1.

⁵⁴ See Sveriges Riksbank (2014), "Financial Infrastructure 2014", page 26.

⁵⁵ See "CSDR – new EU regulation on improving securities settlement and on central securities depositories is welcome" in Chapter 1.

risks. The Riksbank considers that it is positive that this work is being done and expects it to be completed during the first half of 2015.

- Euroclear Sweden has conducted a scenario-based continuity exercise together with certain participants. The Riksbank welcomes this and expects similar exercises to be carried out at least once a year.
- Euroclear Sweden's system does not at present meet the requirement for full use of internationally-accepted communication standards. One of the requirements that Euroclear Sweden will make of the system that will replace the current VPC system is that it should contain standardised messages for corporate events, which will eventually deal with the weaknesses that exist today.

NASDAQ Clearing – the central counterparty for derivatives

Nasdaq OMX Clearing AB, often referred to as Nasdaq Clearing, is a central counterparty for equity derivatives, interest-rate derivatives, FX derivatives, commodity derivatives and repos.⁵⁶ In 2014, Nasdaq Clearing cleared an average of 475,000 derivatives and repos per day, which is a somewhat higher figure than in 2013. In 2014, the availability in Nasdaq Clearing's system was 100 per cent, and the availability has been good over the last five years.

EXTENDED AUTHORISATION FOR FX CLEARING

As the Riksbank noted in the financial infrastructure report in 2014, Nasdaq Clearing was authorised as a central counterparty in accordance with EMIR at the start of 2014. Since this authorisation, Nasdaq Clearing has submitted an application for extension of services. On 25 February 2015 Finansinspektionen granted Nasdaq Clearing authorisation for extension of services which means that they may provide central counterparty clearing of cash-settled FX derivatives. The FX derivatives are both traded on trading venues and OTC and are thereafter settled in US dollars or euros based on the exchange rate in the currency pair traded.

The Riksbank is generally positive to increased central counterparty clearing as it improves the ability of the central counterparty's participants to safely and efficiently manage the counterparty risk that arises in connection with derivatives trading.

PREVIOUS NOS ACTIVITY IS NOW COVERED BY THE RIKSBANK'S OVERSIGHT

In 2012, Nasdaq Clearing acquired the Norwegian central counterparty NOS, which among other things handled commodity derivatives with fish, freight, fuel oil and iron ore as underlying assets. Following the EMIR authorisation of Nasdaq Clearing in 2014, NOS was incorporated into the other central counterparty operations. Following the merger, NOS is covered by the same rules and regulations as Nasdaq Clearing's other commodity clearing and a separate financial buffer has been created for the fish derivatives. As Nasdaq Clearing is subject to oversight by the Riksbank, the clearing of fish, freight, oil and iron ore derivatives, as well as the coal derivatives introduced after the merger, are now subject to the Riksbank's oversight.

⁵⁶ The derivative instruments cleared by the company can be either exchange-traded or OTC derivatives.

BANK GUARANTEES MAY ENTAIL CONTAGION RISKS

Nasdaq Clearing has long accepted uncollateralised bank guarantees as collateral from non-financial participants clearing power and gas derivatives. These guarantees are often issued by banks, who are also Nasdaq Clearing participants, while the purchasers are commodity producers. Financial problems for a commodity producer could therefore spread to the issuer of the guarantee. Uncollateralised bank guarantees may also prove to be less reliable compared to other types of collateral posted to Nasdaq Clearing, as uncollateralised bank guarantees are not pre-funded.

Under the current legislation, EMIR, the possibility to accept uncollateralised bank guarantees as collateral will be abolished in March 2016. Given this background, Nasdaq Clearing has drawn up a plan for how to phase out bank guarantees in an orderly way. This will ensure that Nasdaq Clearing will continue to comply with the applicable legislation also after March 2016.

At present, the Riksbank takes no stance on the acceptance of uncollateralised bank guarantees as there is an exception that permits this.⁵⁷ However, the Riksbank welcomes the plan for the phase-out of uncollateralised bank guarantees that has been drawn up and will follow Nasdaq Clearing's work in this area.

FOLLOW-UP OF ISSUES RELATING TO NASDAQ CLEARING FROM THE FINANCIAL INFRASTRUCTURE REPORT 2014

- Nasdaq Clearing has published a self-assessment in accordance with CPMI-IOSCO principles.⁵⁸ This self-assessment complies with CPMI-IOSCO's requirement for a disclosure framework and thus meets the transparency requirements in the PFMI.
- Nasdaq Clearing continually monitors its indirect participants by comparing the level of activity in client accounts with certain predefined limits. If the activity in such an account exceeds the limits then Nasdaq Clearing analyses this and takes appropriate action. The Riksbank therefore considers Nasdaq Clearing's management of risks from tiered-participation to be satisfactory.
- Nasdaq Clearing has strengthened its liquidity management by increasing the number of liquidity lines from three to four. The Riksbank is positive to the strengthening of the liquidity arrangements, as well as the diversification outside the Scandinavian market.

⁵⁷ For the same reason, the Riksbank has no objection to Nasdaq Clearing considering themselves to fully comply with Principal 5 of the Principles for Financial Market Infrastructures (Collateral). Only if Nasdaq Clearing is able to present sufficient grounds will there be any reason to consider permitting uncollateralised bank guarantees as collateral after March 2016. Such sufficient grounds have not yet been presented to the Riksbank.

⁵⁸ NASDAQ OMX Clearing AB (2014), Disclosure Framework, March 2014.

■ 3. The international FMIs

There are several international FMIs that have considerable significance for financial stability in Sweden. The CLS, which is a FMI for settling foreign exchange transactions, and SWIFT, which is a network for financial messages, are two examples. In addition, there is EuroCCP, which is a central counterparty for equity transactions, and LCH, which is a central counterparty for derivatives. They both play an important role in the clearing of financial instruments in Sweden.

The Riksbank therefore participates in oversight cooperation concerning these international FMIs. However, it is the FMIs' home authorities that are ultimately responsible for their oversight and supervision and that therefore lead the oversight work. The Riksbank does not make its own assessments of these FMIs. On the basis of the information shared in the oversight cooperation, the Riksbank can nevertheless note that the international FMIs function smoothly but that there, as in the Swedish FMIs, is room for improvement.

CLS – a FMI for settling foreign exchange transactions

CLS (Continuous Linked Settlement) works to reduce settlement risk in foreign exchange transactions by ensuring that both currencies in a foreign exchange transaction change owner at the same time, regardless of time zones. The Federal Reserve is the supervisory authority responsible for CLS and is chair of CLS oversight committee, which includes representatives of the central banks for all 17 currencies settled in the CLS. The Riksbank is one of these central banks.

During 2014, CLS settled foreign exchange transactions equivalent to an average value of SEK 35,000 billion per banking day. All of the major Swedish banks take part in CLS and the corresponding figure for settled transactions in SEK was around SEK 420 billion.

NEW REQUIREMENTS ON CLS AS A RESULT OF PFMI

During autumn 2014, the Federal Reserve incorporated the PFMI into its domestic regulation. This entails new standards for CLS to meet. The new standards include drawing up plans for recovery and orderly wind-down and managing risks that arise due to indirect participants. CLS is expected to fully comply with these new standards by 31 December 2015. A further requirement is to produce a Disclosure Framework in line with the framework established by CPMI-IOSCO. CLS published a Disclosure Framework on 30 December 2014.⁵⁹

⁵⁹ CLS Bank International (2014), Disclosure.

CONTINUITY SOLUTIONS SAFEGUARD AN EFFICIENT FOREIGN EXCHANGE MARKET

All of the participants in CLS are dependent on nostro banks⁶⁰ for some or all of their foreign exchange settlements. It is therefore important that the Swedish participants have adequate continuity solutions to safeguard efficient settlement in SEK and other currencies, even if the primary nostro bank suffers problems.

It is therefore important that Swedish nostro banks are prepared to supply secondary nostro accounts to foreign participants to ensure settlement can take place in Swedish krona. Similarly, it is also important that the Swedish participants safeguard their settlement in foreign currencies by opening secondary nostro accounts for the foreign currencies settled. In addition, it may be necessary to have further continuity arrangements to be fully prepared to manage a situation where a Swedish or foreign nostro banks suffered problems.

SWIFT – a global network for financial messages

SWIFT's⁶¹ services are used in more than 200 countries and their users sent approximately 5.6 billion financial messages in 2014. Swedish users sent and received around 134 million of these messages.⁶² SWIFT is a member-owned company with its registered office in Belgium and the Riksbank participates in the joint oversight⁶³ headed by the National Bank of Belgium.

The oversight work, which is based on the requirements in "High Level Expectations for the oversight of SWIFT",⁶⁴ includes following up incidents, examining SWIFT's own assessments and examining audit reports. Moreover, selected risk areas that have been given particular priority are also examined. Over the past year, the focus has been on Cyber security and several large projects run by SWIFT.

CHANGEOVER TO NEW TECHNICAL PLATFORM

SWIFT has been running a project, since 2010, to modernise the technical platform and programming language used for its FIN message service. The purpose of the project is to reduce the risks of using technology that might become outdated, as well as reducing operating costs. The project is being implemented in several phases and the first of these was completed according to plan in June 2013. During 2014, further important changes were implemented. The project plan for the second phase was extended for one year during 2014, with the aim of gaining further assurance on the quality of the delivery, and the plan now is that the project will be completed in 2016.

⁶⁰ A nostro bank is a participant in CLS that offers the service of receiving or sending payments in its domestic currency on behalf of a foreign participant. Nostro banks are necessary for foreign exchange settlements via CLS and bilateral agreements are signed between the participants and nostro banks.

⁶¹ SWIFT is an abbreviation for the Society for Worldwide Interbank Financial Telecommunication. The Riksbank is both a part-owner of SWIFT and user of its services. The Riksbank's oversight of SWIFT is separated in organisational terms from its ownership and use of SWIFT.

⁶² The figure refers to FIN messages and they comprise the largest share of payment and securities messages.

⁶³ The oversight is conducted within the SWIFT Co-operative Oversight Group (SWIFT OG), which consists of central banks in G10 and within the SWIFT Oversight Forum, which is an extended group of selected central banks.

⁶⁴ See National Bank of Belgium (2007), "Financial Stability Review 2007".

CYBER SECURITY IS A PRIORITY AREA

It is very important to SWIFT that their message services maintain a very high level of security and availability and they therefore work constantly and actively on Cyber security. The overall perceived context of a rapid increase in advanced IT-related attacks means that also at SWIFT the knowledge and routines regarding Cyber security must be updated constantly. This is an area closely monitored in the authorities' oversight of SWIFT.

EuroCCP – a central counterparty for equities

EuroCCP N.V. (EuroCCP) currently clears the majority of the Swedish equities that go through a central counterparty. EuroCCP cleared Swedish equities to a value of around SEK 33 billion on average per banking day in 2014.⁶⁵ As EuroCCP makes clearing and settlement more efficient by netting transactions, the value finally settled was around SEK 11 billion.

EuroCCP is a Dutch company and the Riksbank takes part in the supervisory college, which is headed up by the Dutch central bank. Over the past year, the work in the supervisory college has focussed on the authorisation of EuroCCP.

EUROCCP AUTHORISED UNDER EMIR IN APRIL 2014

During 2014, all central counterparties in the EU needed to be reauthorised to ensure they met the requirements in EMIR. In April 2014, EuroCCP became authorised as central counterparty by the Dutch central bank.

EuroCCP has since its authorisation merged with the British central counterparty with the same name. This means that there is now only one central counterparty with the name EuroCCP and this is the Dutch one.

REDUCED NUMBER OF DAYS BETWEEN TRANSACTION AND SETTLEMENT

One change due to the CSDR⁶⁶ that was introduced in the EU in 2014 is that the number of days between trading and settlement of equity has been reduced from three to two days. This change was made to reduce the risks between counterparties. It is a change to which EuroCCP, as agent on the equity market, has needed to adapt to.

LCH – a central counterparty for derivatives

LCH (LCH clearnet Limited) is a British central counterparty which clears several different classes of derivatives (equity, fixed-income and commodities). Three of the major Swedish banks are currently participants in LCH and others clear at LCH through agents. The part of LCH that provides central counterparty clearing of fixed-income swaps is called Swapclear, and it is here that the Swedish banks are most active. During 2014 Swapclear cleared about 2 556 000 interest rate derivatives, and just over two per cent of these were denominated in Swedish krona.

⁶⁵ The value presented here should not be confused with the value of total Swedish equities traded in 2014. This is because central counterparty clearing gives rise to more transactions in that the central counterparty replaces (novates) all transactions and thus one transaction always becomes two transactions.

⁶⁶ See "CSDR – new EU regulation on improved securities settlement and central securities depositories is welcome" in Chapter 1.

As most of the major Swedish banks are participants in LCH, it is important for the Riksbank to follow developments and contribute to its activities being conducted in a safe and efficient manner. Any problems in LCH could affect Swedish banks that are participants and thereby spread to the Swedish market and the Swedish financial system as a whole.

LCH AUTHORISED UNDER EMIR IN JUNE 2014

The Riksbank reported in the Financial Infrastructure Report published in 2014 that LCH had applied to become authorised as central counterparty under EMIR, and that the Bank of England, as supervisory authority for the LCH, had established a supervisory college. On 12 June 2014, the Bank of England, after considering the opinion of the college, issued a Recognition Order to LCH authorising them as central counterparty under EMIR.

OVERSIGHT COOPERATION EXTENDED TO COVER WHOLE OF LCH

The Riksbank is part of a group of central banks that together form an international oversight cooperation body. This group includes, in addition to the Riksbank, other central banks representing a further seven of the currencies handled by the LCH. Previously, the group has focused on overseeing Swapclear, but at the end of 2014 focus was shifted to cover the whole of LCH. The change was made as a result of the relatively large overlap among the participants in the oversight work and those in the supervisory college formed in connection with LCH applying for reauthorisation as central counterparty under EMIR.

The Riksbank takes part in the oversight cooperation, but is not a member of the supervisory college. This means that the Riksbank does not have any influence over the supervision, but on the other hand good access to information about LCH. The Riksbank welcomes an expansion of the oversight work to include the entire LCH as this gives the Riksbank better insight into LCH's activities.

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